

PUBLIC PRIVATE PARTNERSHIPS IN INFRASTRUCTURE: GLOBAL OVERVIEW

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ABSTRACT. The study contains basic international trends in the field of PPP in general sense and in section of several aspects. Some consequences of pandemic were also predicted as a result, respective conclusions were made, which may be of interest for application in the conditions of Republic of Moldova.

KEYWORDS: *Public-Private Partnership, project, investments, infrastructure*

Introduction

According to Knowledge Lab, Public-Private Partnership (PPP) is “a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility and remuneration is linked to performance”. [10]

PPP can be treated as strengthened legal form of interaction of state and private sectors with state and municipal property, as well as services provided and provided by state and municipal bodies, institutions and enterprises, in order to carry out projects socially important in a wide range of types of economic activities. [5, p. 116]

In other words, PPP is a specific form of attracting by public administration bodies of private business for the execution of works related to technical maintenance, operation, reconstruction, modernization or green field construction of public infrastructure objectives and provision of public services. With such objectives, the distribution of risks, competencies and responsibilities are determined by contract and national normative acts.

Authors Oktavianus Adrianto, Mahani Iris and Meifrinaldi state that PPPs offer benefits for both public and private sectors. [8]

In the vision of the public sector, PPP increases the value for the public of projects launched by reducing risk, cost efficiency, raising the level of services, efficient and faster completion. PPPs also reduce public capital investment and the use of private partner capital takes place under public partner monitoring.

The benefits of private sector within PPP are expressed by implementing better solutions, new efficiency based on their managerial, technical, financial and innovation capabilities, technologies and improving construction process. PPPs also provide private sector with access to secure and long-term investment opportunities so that they can generate business with the certainty and relative security of a government contract. In addition, the private sector benefits from PPPs by achieving project objectives and being supported by the public sector through fiscal instruments of public finances.

According to researcher Ion Crețu [3, p. 50], in order to cooperate between the public and private sector in the field of infrastructure investments, the implementation of PPP mechanism can be done, especially in those sectors where major investments are needed, depending on the importance their strategic position for national economy.

Typically, the interest in creating a PPP is dictated by the following [3, p. 50]:

- Investments in infrastructure;
- More efficient use of funds;
- Economic and social capitalization of invested funds.

The use of PPPs for infrastructure development around the world has increased significantly in the last time.

According to the World Bank, 8671 PPP projects with a total investment volume of 1.7 trillion USD have been launched in the last 30 years in the world in the field of infrastructure. [9]

At the same time, according to Hub Infrastructure Global in the period 2016-2040 for the development of infrastructure worldwide, investments amounting to 15 trillion USD are needed [2], which makes actual studies on global evolution of PPP market.

A description of used research methods

The main used source of information was The World Bank's database and Market Update Reports for the period 2010-2019, as well as results of analyzes performed by different experts.

In conducting the study, historical method was used in the compartment of global evolution of PPP studying, as well as comparative method in studying the comparative aspect between different segments of international PPP market.

Short analysis of the main bibliographical references in the field of research.

During the years 2010-2019, specialists of The World Bank conducted investigations worldwide regarding projects of private participation in financing of infrastructure. The annual dynamics of which is presented in figure 1.

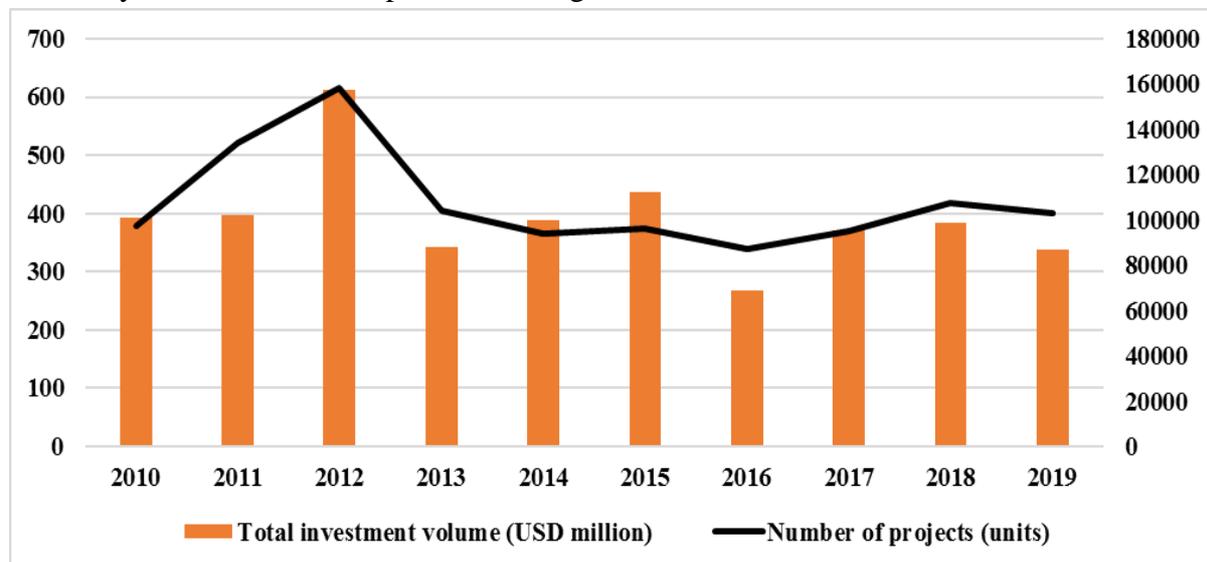


Figure 1. Annual global dynamics of number and volume of funding PPP projects

Source: [9]

Thus, during the nominated period, 4187 PPP projects in infrastructure were launched, dynamics being unstable, minimum level being 340 units in 2016, and maximum - 616 units in 2012.

The financing volume of these projects amounted to 1009.8 USD billion, the annual level also being unstable. The minimum level was in 2016 (USD 68.7 billion) and the maximum level - in 2012 (USD 157.5 billion).

The average annual number of projects was 419 units and the average annual level of investment in PPP projects - USD 101 billion. The average level of investment for a project was USD 241.2 million.

The structure of PPP projects launched during the mentioned period is presented in Figures 2 and 3.

The main share in the total number belongs to greenfield projects (72.3%) with 3027 units, the dynamics being unstable oscillating between 202 units in 2010 and 447 units in 2012.

71.6% of total volume of investments in PPPs for USD 722.8 billion was allocated to finance these projects.

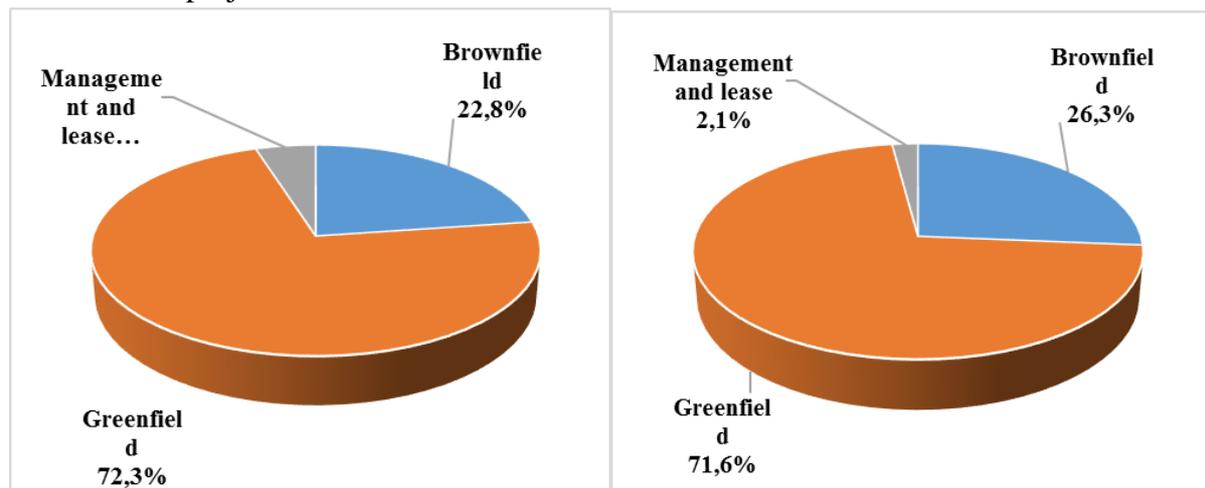


Figure 2. PPP projects number structure by their categories (%)

Figure 3. PPP funding structure by project categories (%)

Source: [9]

Annual investment amounts in these projects ranged from USD 469.9 billion in 2016 to USD 939.0 billion in 2015.

Brownfield projects had a share of 22.8% with 954 units, which were distributed unevenly over years between 52 units in 2017 and 156 units in 2010. Investments in these projects amounted to USD 265.7 billion with a share of 26.3% in the total amount of PPP financing. Annual investments ranged from USD 108.7 billion in 2018 to USD 588.3 billion in 2012.

The lowest share (4.9%) went to management and leasing projects in 206 units with an annual variation between 7 units (2017) and 29 units (2011). Investments in these projects amounted to USD 21.3 billion with a share of 2.1%, with an annual distribution between USD 0.3 billion (2013) and USD 1.7 billion (2016).

The structure of PPP projects according to the level of funding is contained in Figures 4 and 5.

Projects with investments between 100 and 500 million had a share of 32.8%.

Their total number of 1375 units with an investment volume of USD 303.6 billion, which in turn had a share of 30.1%.

Projects with investments between USD 500 million and USD 1 billion totaled 249 units (5.9% of the total number) and wanted funding of USD 177.7 billion (18.6% of the total volume of investments).

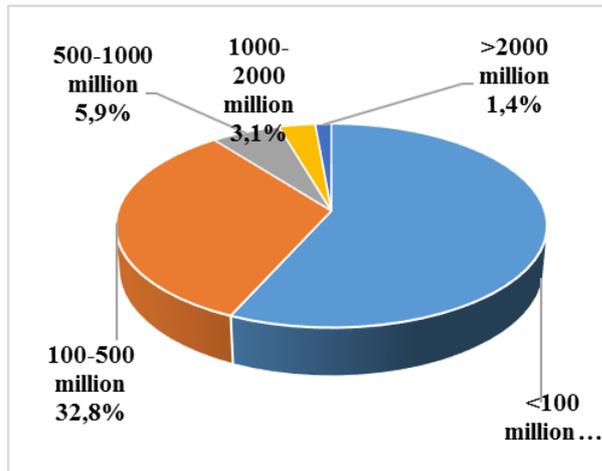


Figure 4. PPP projects number structure according to the level of funding (%)

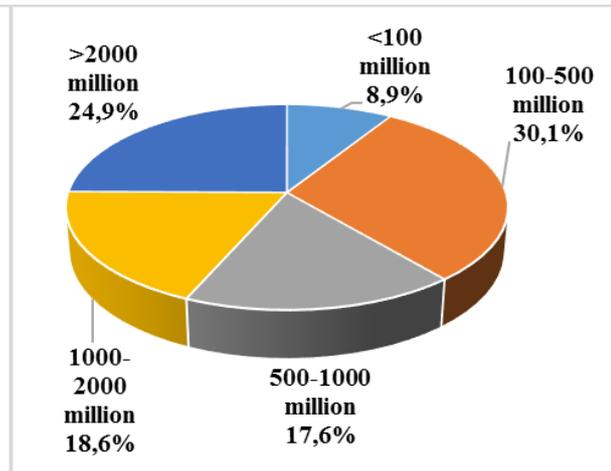


Figure 5. PPP investments structure depending on the level of financing (%)

Source: [9]

PPP projects with investments of 1-2 billion USD were less numerous - 131 units with a share of 3.1%. The amount of investments in them amounted to USD 188 billion (18.6%).

The lowest number of PPP projects (58 units) with the lowest share (1.4%) went to those with a funding volume of more than USD 2 billion. But the amount of their financing was important - USD 251 billion with a share in the total volume of investments of 24.9%

The distribution of PPP projects in infrastructure by areas is also of interest (Figures 6 and 7).

The largest share was held by PPP projects in the field of electricity (57.4%) with a number of 2403 units.

The financing of these PPPs amounted to USD 470.3 billion, which accounted for 46.6% of the total investment volume.

Road PPPs totaled 614 projects, which had a share of 14.7% of the total volume. They were allocated USD 233.6 billion in funding (23.1% of the total volume).

PPP projects in the field of water and sewerage had a share of 8.9% with a number of 372 units and an investment volume of USD 33.1 billion (3.3%).

273 projects with a share of 6.5% were launched in the field of treatment with an investment volume of USD 21.4 billion (2.1%).

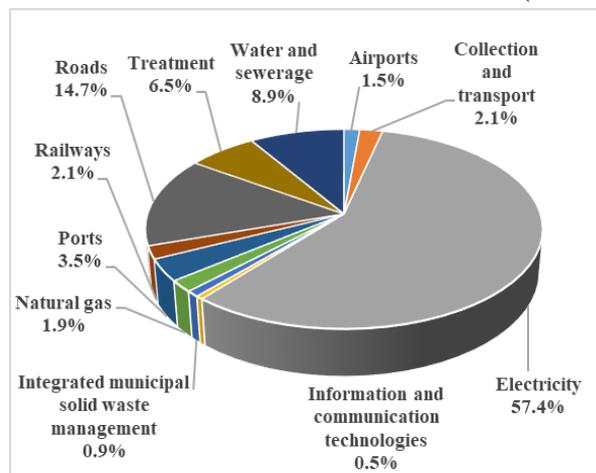


Figure 6. PPP projects number structure on domains (%)

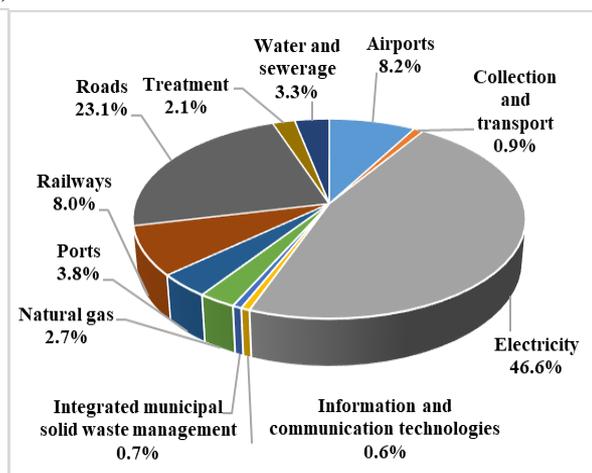


Figure 7. PPP investments structure on domains (%)

Source: [9]

148 PPP projects were launched in ports with a share of 3.5% with funding of USD 38.2 billion (3.8%).

In the field of collection and transport, there were 90 projects with a share of 2.1%, which provided investments of USD 9.5 billion (0.9%).

PPP projects in natural gas had 78 projects and launched with a share of 1.9%, with investments of USD 27.1 billion (2.7%).

60 projects were related to airports with a share of 1.5%. But the volume of investments in them was relatively high - USD 83 billion (8.2%).

The geographical distribution of PPP projects in infrastructure is demonstrated in Figures 8 and 9.

The largest number of projects of 1282 units, with a share of 30.6% of the total number, was launched in Latin America and Caribbean.

The volume of investments in these projects amounted to USD 343.7 billion with a share of 35.2% of the total amount of investments in PPPs.

PPP projects launched in East Asia and Pacific had a share of 30.3% with 1269 units, which had an investment volume of USD 259.5 billion (26.6% of the total volume of funding). PPPs in South Asia had a share of 20.4% with 856 units with a funding amount of USD 154.6 billion (15.8%).

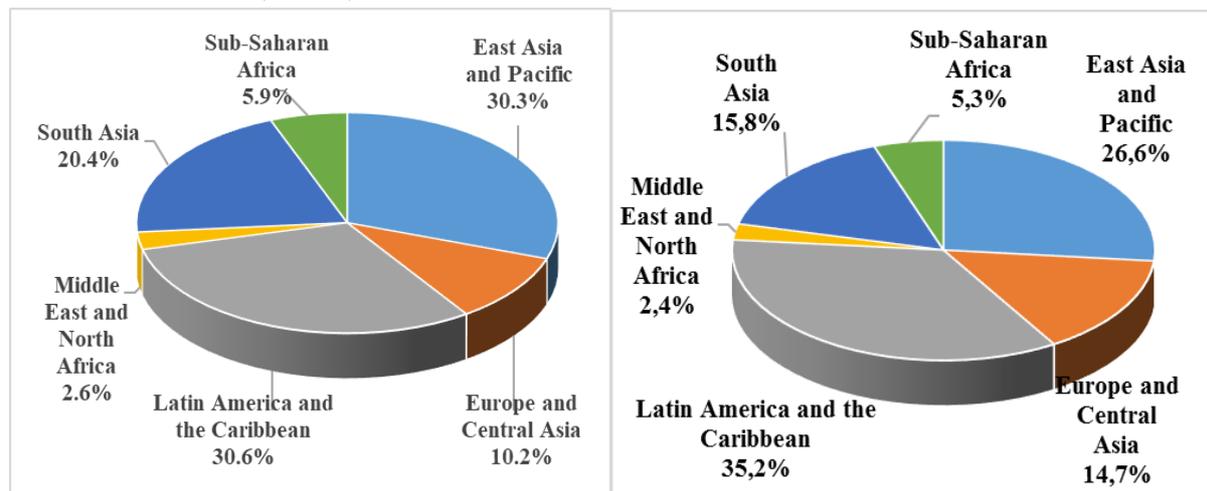


Figure 8. Regional distribution of PPP projects number (%)

Figure 9. Regional distribution of PPP investments (%)

Source: [9]

In Europe and Central Asia there were 426 projects (10.2%) with an investment volume of USD 143.3 billion (14.7%). The number of PPP projects in the Middle East and Sub-Saharan Africa was relatively small - 107 and 248 units, respectively. The volume of investments amounted to USD 23 and 52 billion respectively.

During the period 2010-2019, 652 PPP projects were launched on the European market with a total investment volume of EUR 149.9 billion. On this market took place a general downward trend from 112 projects in 2010 to 29 projects in 2019, and the volume of investments, respectively, decreased from EUR 18.3 billion to EUR 9.8 billion. [6]

The global dynamics of PPP projects in 2020 will be influenced by the crisis of COVID-19 pandemic, which some experts have called the “corona-crisis”. [12]

The total volume of losses caused by this pandemic will constitute 2.4% of global GDP. [4]

UN experts say developing countries will need USD 2.5 billion in international aid for a global victory over the coronavirus. But IMF experts consider this assessment to be very modest. [11]

This crisis will substantially reduce the ability of states to finance infrastructure development due to declining budget revenues, which will increase demand for additional PPP projects. On the other hand, capacities of private partners to assume financial commitments within PPP projects will diminish.

According The PPP Knowledge Lab, the COVID-19 crisis presents challenges for PPP projects, making sustainable design and implementation more imperative than ever. [1]

According to International Monetary Fund experts, this crisis is expected to affect the PPP market in three ways [7]:

- Creating additional costs for all PPP projects, especially those that are operational, largely due to comply with legal norms in a pandemic;
- Significant impact on revenues of PPP projects financed by users, especially transport and energy projects, due to much reduced demand;
- Specific challenges to projects under construction, such as construction delays and supply chain disruptions.

Conclusions

PPPs have become an important tool for global infrastructure development. The general trend has been to increase the number and volume of PPP financing globally, a general upward trend has formed, although in the last two years a downward trend has formed. The study allows to highlight the most popular PPPs in the world. In terms of PPP financing, are preferred projects with investments up to 100 million USD. In terms of branch the largest volume belongs to electricity. The geographical distribution of PPP projects is very uneven. The most active region is Latin America and Caribbean, as well as East Asia and Pacific. The European PPP market tends to shrink. An important challenge for the global PPP project market is the COVID 19 pandemic. It will change conditions for PPP and will probably lead to a reduction in the volume of PPPs launched and implemented. The world trends in the field of PPP market are to be taken into account in promoting respective policies in Republic of Moldova.

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THE DEVELOPMENT OF GREEN ENTREPRENEURSHIP IN THE MODERN WORLD ECONOMY

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ABSTRACT. Global economy is undergoing a new systemic transformation, which led to a significant increase in popularity and profitability of green entrepreneurship throughout the world. The article explores the main trends in the development of green entrepreneurship in modern world economy through a wide range of aspects: as a megatrend in global economy, its share in foreign direct investments (FDI), international trade and consumption, its role and impact. Following the study of the related EU regulations, the author explores the specifics of green entrepreneurship management in Portugal with the focus on the Azores Islands. The research has been conducted using electronic and paper based bibliographic sources in English and Romanian, interviews with the specialists in the field, case study and personal observations.

KEYWORDS: *green entrepreneurship, renewable energy, green products and services, startup projects, synergies, public and private sectors, European Union, Azores Islands, Portugal, pandemic, tourism*

Introduction

Global economy is undergoing a new systemic transformation. According to the founder of the World Economic Forum, Klaus Schwab, it can be categorized as the Fourth Industrial Revolution [1]. It is redefining the core tenets of modern economy and entrepreneurship fast through the Schumpeterian concept of creative destruction. New technologies, like 5G connectivity, artificial intelligence, 3D printing, Internet of Things, drones, autonomous vehicles, as well as many others, are bringing with them the promise of increased productivity and return on capital. However, the modern society expresses the discontent with the current economic model, due to the fact of accelerated consequences of man-made climate change. Consumers tend to eschew companies and products that are known for their careless attitude towards the environment. The representatives of the Millennial and Gen Z generations, who are about to overtake the Baby Boomers as the main consumer group, are leaders in this behavior. These trends, as well as relevant national and sub-national policies and multilateral agreements, have led to a significant increase in popularity and profitability of green entrepreneurship throughout the world. It is associated with the concept of leading with purpose, is indicating the willingness of the businesses to take into account its impact on environment and wider range of stakeholders. Business Roundtable, one of the most influential business lobbies in the United States, issued a statement on August 19, 2019, in which it for the first time in 40 years redefined the purpose of corporations to a much wider interpretation, including “protecting the environment by embracing sustainable practices across our businesses” [2]. This marks an important departure from more than 40 years of Milton Friedman’s ideas on corporations [3] and move towards Klaus Schwab’s stakeholder theory [4]. Thus, the *importance of the topic* of green entrepreneurship cannot be overstated, and the *purpose of the article* consists in providing an opportunity to explore a more global picture of its role. The *research methodology* has included the documentation and analysis of the relevant electronic and paper based bibliographic sources, interviews with the specialists in this field, personal observation as well as a case study.

The article provides an outline of the role of green entrepreneurship in the modern world economy through a wide range of aspects: as a megatrend in global economy, its share in foreign direct investments (FDI), International trade and consumption, its impact on the world economic development. With more opportunities arising for green/eco-entrepreneurs to invest in, green businesses are getting more popular. Therefore, more “greened” products and services are being offered worldwide, while the demand of those consumers who are interested in them and ready to buy/use them, is growing. The trends and specifics of green economy development in Portugal, with the emphasis on the Azores Islands, as well as the current activities in response to COVID 19 pandemic impact on tourism sector are explored in the article too.

Ecologization as a Megatrend of the Contemporary World Economy

The notion of megatrend, introduced in 1982 by John Naisbitt in his work “Megatrends: Ten New Directions Transforming Our Lives” [5], represents a relatively new term in social sciences. Naisbitt defined *megatrend* as “a long-term, broad reach transformational process with broad reach, global scope, and a fundamental and dramatic impact”. Michael O’Sullivan, Head of Portfolio Strategy & Thematic Research at Credit Suisse, defines Megatrend as “... a profound and long-lasting social and/ or economic change that has been spurred by factors such as technological breakthroughs, shifts in the balance of geopolitical power, altering demographic patterns and environmental change”[6]. Many further interpretations of this term exist among various social scientists, financial executives, risk analysts and other actors. In our research, the definition of a megatrend that will serve as a base for further analysis will be the one provided by Z. Siscan: "the most general direction that produces its impact on all socio- economic systems at all levels, shaping ... a global socio- economic space, and which is acting persistently for centuries, forming a global socio-economic time"[7].

Ecologization unarguably constitutes one of the greatest megatrends of our time in economy and general life. Businesses are under more pressure to be environmentally friendly and disclose their climate related risks to investors. To understand the growing impact of this megatrend, it is worth noting that in its 2020 Global Risks Report [8] experts asked by the World Economic Forum [9] cited exclusively environment related risks in their top five of risks by likelihood, those being extreme weather, climate action failure, natural disasters, biodiversity loss and human-made environmental disasters. Among the top-five risks by impact, three are in the “green” category: climate action failure (1st place), biodiversity loss (3rd spot) and extreme weather (4th position).

The impact of Ecologization on entrepreneurship is being increasingly felt not only in big industrial and/or financial conglomerates, but also has influenced the blossoming a lot of small and medium enterprises (SMEs) focused on providing green goods and solutions to the needs of their communities. Thus, the megatrend democratized the entrepreneurship itself, and contributed to its new form, significantly enlarging its geography. In Sub-Saharan Africa, a region that is the most vulnerable to climate change and is experiencing the fastest population growth, green entrepreneurship is a way for many people, especially youth, to escape poverty and solve additional challenges to their way of life [10]. Another illustrative example is the growing presence of micro- and mini-grids. Their maintenance and installation costs are comparatively cheap, they use an abundant renewable source (solar energy) and allow those connected to it a constant access to energy even if conventional power lines are not connected

to their homes or are not functioning due to power outage. Being cheaper, healthier and more environmentally friendly than using diesel generators or firewood, mini-grids established by local entrepreneurs simultaneously provide solutions to the host of other developmental challenges by allowing women to cook without using dangerous fuels or firewood, children to study anytime, but most importantly it provides potential for increasing cold storage capacity for food. In developing countries, only 40% of food loss occurs after harvest and early in the supply chain, which amounts to more than \$310 billion in food waste and loss annually. On top of that, food waste is the third-largest global emitter of carbon dioxide [11]. Thus, the Ecologization as a megatrend also manifests itself by its capacity to influence and transform not just industries and spheres of life that are most responsive to it, but also provides substantial beneficial spillover effects further along the way. Green entrepreneurship is the main driving engine of this megatrend and will continue to be in such a position for the time being.

Green Entrepreneurship: Concept and Main Directions in Development

Definitions of “entrepreneur” and “entrepreneurship” vary depending on study or business dictionary. For the purpose of this research the following synthetic definition of entrepreneurship is being suggested: an activity that involves the discovery, evaluation and exploitation of opportunities to introduce new goods and services, markets, processes and raw materials through organizing efforts that previously had not existed [12], [13]. Berle [14] provided the first instance of using the term of entrepreneurship in academic literature. The connotation of its use was mostly a derivative from the conventional notion of entrepreneurship, involving its core characteristics, such as risk taking, innovation and higher degree of positive social and environmental impact, in its description. The concept has later been developed by Gevrenova [15]. Schaper [16], Dean and McMullen [17] came up with their interpretations, introducing terms “eco entrepreneurship” and “sustainopreneurship”, respectively. Volery [18] identified two types of ecopreneurs: environment-conscious entrepreneurs developing any kind of innovation that decreases resource use and/or improves cost efficiencies on the way to zero-waste target; and green entrepreneurs, who are both aware of the environmental issues and whose business is entirely in environmental marketplace. According to the GREENT project implementers, “green entrepreneurship is the activity of consciously addressing an environmental/social problem/need through the realization of entrepreneurial ideas with a high level of risk, which has a net positive effect on the natural environment and, at the same time, is financially sustainable” [19]. Among the terms available to describe green entrepreneurship, the following are the most commonly used: ecoentrepreneurship, ecopreneurship, environmental entrepreneurship, sustainable entrepreneurship, ecological entrepreneurship, enviro-preneurship or sustainopreneurship.

Proceeding from the aforementioned literature review, it is considered to be the most appropriate to define green entrepreneurship as follows. It is an economic activity, the results of which have net positive effect on the environment (by enhancing the positive changes and/or stemming the negative ones, i.e. internalizing externalities), change consumer behavior in the same direction and reward the risk of such an enterprise with profit.

From being a relatively niche business model, green entrepreneurship is gaining much more attraction and economic weight while the environmental concerns gain in importance and influence advanced and developing economies alike. The low carbon environmental goods and services (LCEGS) sector has continued to expand at nearly 4% per annum while

the global turnover in the sector exceeded \$5.4 trillion in 2012 [20]. That said, the scholarly literature still could not provide us with a cohesive response on how exactly the success of a green innovative startup and its financial performance is influenced by such important factors as innovations and industry life cycles [21]. Verreyne and Mayer [22] suggest that the main factor is the stage of the life cycle of a particular green technology at the moment when the firm enters market. In the initial phase, when standards for the development of said technology are not completely set, the startup firms are plenty and more aggressive in their behavior to gain market clout [23], while in the maturity phase of the cycle there are fewer and bigger firms remaining. They allow themselves more investments in R&D and mainly maintain their competitive edge through process innovations. For now, though, the market landscape is favoring two polar business models. The first one is of the green upstarts that are SMEs operating with a focus on one particular technology solution, in some cases sponsored by venture capital and unlikely to pursue a public flotation of its shares anytime soon. On the opposite end of the spectrum, one can find big so called “superstar” firms that use their economies of scale to significantly increase the green share of their business or to make their main green business even more profitable. Since the range of applications of green technologies is getting wider, the industries where such companies are in is widening as well. However, the beacons of innovation are mostly likely to be found in energy, electricity, car making and mobility solutions sectors.

International Trade in Green Goods and Foreign Direct Investments in Green Production

International trade in green goods is about to receive a new impetus, owing to the following. The 21st Conference of Parties (COP21) and the UN Framework Convention on Climate Change (UNFCCC) in Paris in December 2015 resulted in signing of the ambitious Paris Climate Agreement and COP24 in Katowice in December 2018. It was agreed on almost whole handbook of their implementation (except on Article 6 of the Paris Agreement, which is referring to the establishment of global carbon markets). It became certain that increasing trade in green goods to fundamentally ecologize the modern economy is though not enough, it requires transformation of entire industries, which cannot be achieved without necessary capital and expertise. It is usually coming to many countries in the form of foreign direct investment (FDI). By establishing a foreign company’s affiliate or commercial presence, a company shows that its intentions to set foot in the respective market are serious. Greening production thus is becoming a strong commercial imperative, while host countries increasingly see attraction of green FDI as a priority in their development strategies. UNEP (2017) provides an outline of conditions under which attraction of green FDI will result in success:

- More purposefully aligning inward and outward FDI promotion, facilitation, and governance initiatives with environmental commitments made, and objectives identified in connection with the Paris Agreement and SDGs. This includes examining and strategically orienting host country policies, home country policies, and international frameworks such international investment treaties; such strategic alignment could include, for instance, efforts to use investment policy to advance projects that countries have identified in their Nationally Determined Contributions (NDCs) to Paris Agreement.

- Focusing on green reinvestment as a strategy for upgrading performance of existing assets.
- Ensuring that policy shifts and priorities by upstream national and international development banks enhance the viability and performance of green FDI.
- Increasing the effectiveness of FDI as a channel for green technology transfer.

Along with investment, it is important to look at the growing role of the environmental goods and services in global trade. Even though there are many barriers remaining at the policy level to facilitate their free and unimpeded flow green goods are of increasing importance in global trade. Moreover, this process of expansion is followed by significant reshaping and establishing of new green value chains that can be of any scale from local to global (even though a green global value chain is now hard to contemplate due to a significant impact of shipping sector emissions). The most successful cases are the value chains related to the production of solar panels and wind turbines. The batteries sector is looking for a breakthrough that will allow to transition from the lithium-ion and cobalt (for cars like Tesla) ones to those made of materials that will be mined and delivered more sustainably and ethically.

The Impact of the WTO on the Development of Green Entrepreneurship

International trade in any goods, including green ones, can flourish as much as the regulatory environment allows it. At the international level, the main responsible body is the World Trade Organization (WTO), formed in 1995 after entering into force of the Marrakech Agreements. Under its auspices, a significant work has been done to liberalize various aspects of international trade. Unfortunately, the increasing dysfunction of the WTO has had its negative impact upon trade in green goods as well. One of the main objectives of the WTO Doha Round has been removal or significant reduction of both tariff and non-tariff barriers to the trade in green goods. However, continuous negotiations have not been yielding any significant result. When the WTO launched its version of the Green Goods Agreement for open subscription in 2014, only a few dozen countries have committed to it since then. Authors whose scholarship is focused on providing the perspective of developing countries on the Green Goods Agreement [24] mention that its focus primarily on lifting tariff barriers to trade in goods is too narrow, and that the negotiations per se are not inclusive, because the only non-high-income category countries present were China and Costa Rica. Melo and Solleder [25] also analyze the non-participation of developing countries at these negotiations. According to the authors, several factors have contributed to the non-participation by developing countries. First, the average applied tariffs on environmentally friendly goods in rich countries are around 0.5%, with few tariff peaks. Hence, at the tariff level, very little is at stake for the current participants in the EGA negotiations. Second, as expected, for both lists, average applied tariffs increase as income level decreases. Such asymmetry of interests, compounded by a sustained rise of protectionism and disregard for the rules of the multilateral trade system, mostly likely will continue stalling any meaningful advances in Environmental Goods Agreement negotiations for the time being. However, the growing bargaining power of developing states in climate negotiations at a certain point time will spill over in the EGA ones as well, which will make rich but still considered developing countries like China potential kingmakers. Since the leadership of the PRC embraced international trade agreements more openly, such developments cannot be excluded.

For the Environmental (Green) Goods Agreement to become more inclusive, the logjam should be broken in the WTO reform process as a whole. It will require all 164 countries with voting rights at the General Council to be onboard. When the threat of climate change intensifies and threatens the economy more directly, it is likely we will see the importance of the EGA rising and the negotiations going much smoother than now.

Green entrepreneurship in Portugal: Azores Islands Case

After the completion of the EU Economic and Financial Assistance Programme (PAEF), Portugal needed a further vision of the long-term development of the country. The launch of a new set of structural reforms followed, as well as the targeted investments in such strategic areas as knowledge, industrial policy and the green economy. The Government has been tackling structural reforms in the areas of the environment, energy, spatial planning, transport, housing, science, innovation, agriculture and tourism. It goes in line with the plans and actions reflected in the national strategies (key public policy instruments), among them being The National Research and Innovation Strategy for Smart Specialization (ENEI), The Industrial Development Strategy for Growth and Employment (EFICE) etc., as well as a number of sectorial plans aimed at and based on public-private partnership (PPP). Portugal takes an advantage of the opportunity to promote an integrated and comprehensive vision of the sectors with green growth potential. The “red line” approach lies on nurturing the ability to link research, development and innovation to production, products, services and processes, as well as to proper funding mechanisms.

The Green Growth Coalition (GGC), founded in 2014, puts together the efforts of about 100 associations, business representatives, science and financial sectors, public bodies, foundations and NGOs. The Green Growth Commitment (GGC), published by the Ministry of Environment, Spatial Planning and Energy sets out 14 quantified goals for 2020 and 2030, reflecting on the paradoxical situation faced by Portugal (i.e. possessing talents, resources and infrastructures with high potential, encountering however considerable structural problems) and the ways of overcoming it. The strategic paper highlights the importance of using the existing economic opportunities and the chances to create green growth related jobs (given Portugal has the talent, resources, infrastructures required to win on a global scale in the short-term, and considering the growing demand for green goods and services). The goals of green growth are consistent with the main challenges faced by the society in Portugal, and therefore contribute to meeting them: growth, employment, lower dependency on imports, more intelligent taxation etc.

Backed up by the government support and investment coming from private sector, the country has witnessed the startup revolution, an “entrepreneurial discovery trend”. Portugal’s novo entrepreneurs applied their creativity, started their own businesses, and thereby contributed to the transition of the economy from its traditional manufacturing roots to the one based on innovation. As a result, a number of business incubators were launched (Startup Lisboa), accelerator activity improved (Lisbon Challenge, acknowledged one of the top five most active programs in Europe), startups like TechSned tars, Y Combinator, Seedcamp etc., as well as Portugal and Azores Ventures. Aligned with the Strategic Plan for Waste Management (for Portugal, and for the Azores in particular), recycling practices have increased and have become one of the Government priorities.

Proceeding from the 2030 Agenda for Sustainable Development, and namely Sustainable Development Goal 7: *Affordable and clean energy*, the following guidelines have

been highlighted for Portugal. Promoting the country as Europe's energy supplier and a leader in energy transition to a low carbon economy; promoting renewable sources in the final energy consumption; promoting the potential for cleaner and cheaper energy production; stimulating energy competition and competitiveness and develop an energy technology cluster in Portugal Push for energy efficiency and expand electric mobility etc.

The Azores region, situated in the middle of the Atlantic Ocean, midway between Europe and North America, has a particular state of affairs in the founding documents of the EU. The Azores social and economic situation is compounded by the remoteness, insularity, small size, changeable climate, economic dependence on a few products etc., which in turn requires the specific measures. The Azores Islands also demonstrate significant renewable potential and contribute their renewable energy sources (RES) to the region's needs. Each of nine islands is specific in its own way, their resources being used most effectively based on the potential and use it represents. Thus, e.g. Flores has 54 per cent of its electricity produced by renewable energy (hydro & wind), while San Miguel has 44 of electricity production by renewable energy due to geothermal. San Miguel generates about half of its electricity from 2 geothermal plants and Flores has significant hydroelectric resources. As a result, the latter two were chosen as the first participants in one of the world's largest experiments in feasible energy systems powered by renewable sources (The Green Islands Project: the brainchild of engineers at INESC Porto, a non-profit body affiliated with Portugal's University of Porto, and the Massachusetts Institute of Technology (MIT)).

EU- allocated funds and support have been the essential element in the economic and social development of the region. The main strategic guidelines for 2014- 2020 have been outlined in the Autonomous Region of the Azores: Assumptions and context for the Action Plan 2014-2020, in the context of the Communication from the European Commission "The outermost regions of the EU: towards a partnership for smart, sustainable and inclusive growth" document. The Plan highlights the need of increase in the regional economy's level of competitiveness, covering the core and specialized areas, promoting the diversification of new sectors and areas of economic production. Active promotion of private sector employment is highlighted and became a priority, thereby linking the qualification of human resources to the needs of companies, while at the same time protecting underprivileged sectors of the society. The tools used go in line with environmental sustainability, efficiency and the preservation of resources principles.

Given the specificity of each island, the main potential and advantages of each one should be properly used following the sustainability principles. Among the islands' main advantages to focus on are the following: renewable energy (geothermal & wind); the main industries working basically with their own resources (agriculture, dairy farming, livestock ranching, fishing, tourism); sustainable outdoor/wildlife activities as tourism attraction (whales watching etc.); tourism etc. Tourism, being an emerging sector, is at the same time one of the sectors of the regional economy, which has the greatest potential for growth (green economy growth inclusive). Besides its impact on income generation and employment, it also has a positive effect on the trade balance as an 'export' activity. National Geographic Traveller ranked the Azores in the 2nd place among the leading destinations worldwide for sustainable tourism and was later ranked as the best "Green" destination in Europe. Being a sector which has become an important priority relatively recently in the region economy, it plays a growing role in the Azores region strategy for economic development. The associated growth is linked to the sustainability of the Azores as a destination and a suitable balance

between tourism activities, associated with infrastructure and the protection of the landscape, eco-systems and biodiversity. The islands are not viewed and/or promoted as a “sun, sea and sand” mass tourism destination. The new consumers are targeted, motivated towards special interest holidays, including the “green” component.

A number of innovative research projects (synergies) are worth highlighting. Among the most significant ones are as follows. The Green Islands Project, a multidisciplinary MIT Portugal Program. Its main objective is to design and implement a sustainable energy system that minimizes the dependence from fossil fuels and contributes to the economic and social development of the region). Green Islands Field Monitoring, the main project goals including the creation of a network for the real-time remote monitoring of energy consumption and examining the effect of real-time energy information on consumer behavior). Net Zero Farms, promoting the use of micro-generation facilities as one of the approaches to build a sustainable energy system; design and monitoring clean energy solutions using an optimal system design approach, applying a set of related devices that can be applied within the farming and dairy sectors). Net Zero Schools, the Net-Zero energy buildings (NZEB) concept based. It aims to explore the subject deeper by designing and implementing 3 Net-Zero energy schools (NZES) in the Azores and to couple it with active education strategy, thereby contributing to improving sustainable behavior of Azoreans) etc. Waste prevention and management constitutes one of the pillars of the sustainable development strategy of the Azores ensuring the environment protection and the health of both local population and tourists. To sum up, the recycling practices have increased the Government priority in Portugal and the Azores Islands region, in particular (backed up by the Strategic Plan for Waste Management in the Azores and other national level regulations in question). As a result, the launched initiatives yielded positive feedback. More than 5,000 tons of used tyres have been fragmented, containerized and removed from the Azores for recycling in mainland Portugal. Recycling and its advantages have been actively promoted among Azoreans by the Sociedade Ponto Verde and the regional network of Environmental Awareness Raising Centers (ecotecas), coupled with environmental education at schools (reflecting on waste reduction, reuse, recycling etc.). “Catchy” Ecopontos recycling bins have become widespread throughout the town and countryside and impact the population’s (“eco/green”) behavior/habits. The Azores 2014-2020 Rural Development Programme (PRORURAL+) provides support for investments in agricultural enterprises, processing and marketing of agricultural products as well as measures supporting knowledge transfer, with the aim of increasing productivity and farmers’ incomes, increasing resource efficiency and job creation.

A multi-fund Operational Programme "Regional Azores 2014-2020" with contributions from the European Regional Development Fund and European Social Funds for the period 2014-2020, covers the outermost region of Azores. The programme aims to contribute to the fulfilment of the Europe 2020 strategy through the following: (i) fostering Research and Development (R&D) knowledge transfer to SMEs; (ii) promoting the competitiveness of the businesses of the region; (iii) promoting sustainable transport chiefly by developing and improving low-carbon transport systems; (iv) investing in education, training and vocational training for skills and lifelong learning; (v) supporting the development of renewable energy sources and improving energy efficiency in enterprises and buildings; (vi) promoting sustainable and quality employment and supporting labor mobility. One of the priorities of the regional government is the promotion of energy efficiency in the residential sector and in other sectors such as services, industry, public buildings, public

roads, as well as electric mobility. The related practices and measures have been developed to achieve the objectives that promote energy efficiency, in order to make the region energy efficient, consumers being considered as an integral part of the process.

Facing the COVID-19 pandemic crisis in the tourism economy

The coronavirus (COVID-19) pandemic has led to an unprecedented crisis in the tourism economy, provoking the immediate shock to the sector. The Organization for Economic Co-operation and Development (OECD) [26] estimated 60% decline in international tourism in 2020. To that end, the measures taken today, viewing the pandemic crisis as an opportunity to rethink tourism for the future, will impact the tourism of tomorrow. An extraordinary convening of the G20 Tourism Ministers was held on 23 April 2020, and a statement was issued that welcomed national efforts to mitigate the economic and social impact of the pandemic, and committing to providing the support to a sustainable and inclusive recovery of the sector [26]. The Government of Portugal announced EUR 9.2 billion package, which includes EUR 3 billion in state-backed credit guarantees to provide liquidity for companies affected by the coronavirus outbreak. EUR 900 million are for hotels and accommodations, EUR 200 million for travel agencies, recreational services and event organizers, and EUR 600 million for restaurants (EUR 270 million of which for micro and small businesses). Turismo de Portugal, in turn, launched several specific measures to support the tourism sector, with the objective of minimizing the impact of the temporary reduction in demand levels in tourism, due to the crisis caused by COVID-19. Among them being such actions as: (i) launching a specialized online support service to provide advisory services to businesses in dealing with specific operational issues, helping to design Contingency Plans for COVID-19; (ii) transforming its destination's communication from #CantSkipPortugal to #CantSkipHope, a message of hope for all and adjusted to the moment of uncertainty in which we live [27]; (iii) refocusing its work to collect and provide market information on a weekly basis to companies, and is developing digital content for national operators in each market; (iv) updating the data on International Source Markets to Portugal: Daily update of market information for enterprises (air transport, reservations, tour operators and travel restrictions), produced by the offices of Turismo de Portugal worldwide and publicly available on Turismo de Portugal's knowledge management platform; (v) developing specific initiatives in the area of communication; (vi) collaborating with #Tech4COVID19, a platform to recruit accommodation (hotels and short-term rental) for use by health professionals who are unable or unwilling to return home for fear of contagion to the family etc.

At the background of the pandemic negative impact on tourism sector, aligning with the outlined above policy and measures taken by Portugal, Azores Islands regional and local government in partnership with business, associations, NGOs etc. have been implementing the local action plan on facing the pandemic situation. Some examples of the most recent activities in place since summer 2020, are as follows. The Regional Government launched two new editions of the Campaign for the Promotion of Energy Efficiency in the Azores, dedicated to the business and industrial sectors. The purpose was to boost energy optimization and enhance the positioning of these entities, going in line with the development of a low carbon economy in the Azores through energy efficiency and the use of renewable energy sources. The campaigns fall within the "Energy Efficiency Award - Azores," taking place this year in various sectors of activity, including tourism companies and tourist establishments, the industry, and public and private schools. Besides, a number of charging stations were

allocated and installed in a public access area near the hotels facilities. Technical support in implementing energy efficiency measures was offered. It aligned with Regional Government aim to expand the network of public access charging stations for electric vehicles, as provided for in the Plan for Electric Mobility in the Azores (PMEA). In August 2020, another tourism project that differentiates accommodation offer on São Jorge Island was launched with opening the tourist resort tailored to sustainable positioning of the Azores destination. This contributes to the development of the emerged innovative tourism projects targeting leisure tourism, promoting a closer contact with nature through extensive green areas and other outdoor spaces and facilities. Those projects have been supported and cost-shared by local entrepreneurs who invested their resources despite hard pandemic times.

Conclusions

Green entrepreneurship is a megatrend in the global economy that is reshaping the latter at a growing pace. Growing awareness of the consumers of their impact on the environment, as well as generational change in consumer patterns, put pressure on businesses to be green or to leave the market. Such a situation represents an immense opportunity for green entrepreneurs to take over commanding heights of world economy in upcoming years. The success of green entrepreneurship underpins major global efforts to prevent catastrophic consequence of climate change. Paris Agreement, as well as Green European Deal unveiled by new President of the European Commission Ursula von der Leyen, all bet on a significant reliance on such type of entrepreneurs and influx of private (especially venture) capital to support them. However, states and multilateral institutions are not living up fully to the responsibility of the promotion of green entrepreneurship as of now. Even though governments roll out many incentive schemes for the sectors like renewable energy, red tape remains a significant problem, especially when it comes to fulfilling the potential of green and low-carbon FDI. Liberalization of the green FDI will inevitably require the removal of tariff and non-tariff barriers for the environmental goods, both finished and intermediate. Stalled Green Goods Agreement negotiations under the WTO auspices make for a bleak outlook in this regard. This can lead to the adoption of more radical and soloed solutions in this sphere by various actors.

EU support has been the indispensable element in the economic and social development of Portugal, the Azores region inclusive. Public investment subsidized by the EU has been structured along two main guidelines: (i) providing necessary investment for basic infrastructure in diverse areas and in the nine islands of the archipelago, and (ii) economic and social structures, which consider promoting private investment and enhancing human capital. At the same time, after the completion of the EU Economic and Financial Assistance Programme (PAEF), more approaches and tools have been explored and implemented. Structural reforms at the national level in the areas of the environment, energy, spatial planning, transport, housing, science, innovation, agriculture and tourism were launched, with the investments targeting such strategic areas as knowledge, industrial policy and the green economy. Portugal has been promoting an integrated vision of the sectors with green growth potential. The main approach applied stems from the ability/necessity to link *research, development* and *innovation* to production, products, processes and services, as well as to related funding mechanisms. Supported by the government, as well as by the investments made by private sector, Portugal's *novo* entrepreneurs' efforts contributed to the startup revolution, an "entrepreneurial discovery trend", and thereby to the transition of the economy

from its traditional manufacturing roots to the one based on innovation. In doing so, Eco-innovation becomes a priority. Promotion of private sector employment became a priority and tailors the qualification of human resources to the needs of companies, while protecting underprivileged sectors of society. The applied means and tools go in line with environmental sustainability, efficiency and the preservation of resources principles. Synergies (research projects) between economic growth and sustainability and strategic choices in which the green component is an actual reality in economic growth priorities, have become real.

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[Can't Skip Hope \(PT\) video](#) <https://youtu.be/IFIFkGV207A>

ACTIVITIES TO ENSURE THE MORAL AND ETHICAL WELL-BEING OF THE ELDERLY

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ABSTRACT. Elders psychologically require to act in an entourage of production and consumption of spiritual, intellectual and materials goods in society. Demand for the well-being of the elderly requires research innovative technologies into social, economic, intellectual, spiritual and psychological problems of the well-being of the elderly in the conditions of accelerated ageing of society.

In order to ensure the well-being of the elderly, it is psychologically necessary for the elderly to continuously activate in the process of producing and consuming spiritual, intellectual and material goods. In order to achieve this goal, it is necessary to survey and to analyze a broad spectrum of the needs of the elderly to carry out activities without interruption at the 'parent' enterprise, which would ensure the production and consumption of goods in and for society.

The idea of the present research consists in measurement, maintenance and improvement of psychological well-being of retired seniors. The aim is to gather information accumulated in an international environment (Moldova-Netherlands) by questioning elderly people, processing the data obtained, in order to define, maintain and improve the level of their psychological, intellectual and emotional well-being.

It is analyzed the use of the labor force of the elderly in modern society. It is investigated, and discussed (a) the process of continuity of the elderly activity, (b) the improving the social, spiritual, and psychological situation of the elderly, (c) the development of the moral spirituality and intelligence of the elders, and (4) the necessity of creating for elderly the intergenerational amicable environment, first of all, at the education, culture and research types of institutions, enterprises and organizations.

Based on the data obtained during the research, it comes after the development and implementation of innovative solutions that logically conclude the research carried out, and which in turn will create a more productive, healthier, more comfortable society for the elderly.

KEYWORDS: *consumption of goods, elderly, production of goods, questionnaires*

Introduction

Due to the remarkable increase in life expectancy across countries, sustainable prevention strategies are needed to help individuals preserve psychophysical well-being in old age. In particular, the regular practice of a moderately intense physical activity is recommended by the APA [<https://www.apa.org/monitor/2017/04/cover-aging-motion>] to enhance balance, prevent falls, strengthen muscles, and promote psychophysical well-being. In [Micusa, D-V, 2020, p. 6-11] was analyzed, that the creativity and emotionality have been implemented as part of the psychological living continuity interests of senior professors during the transition period from the pre-retiring period to the post-retiring period, and they have used creativity and emotionality in creating the working intergenerational environment within the university.

Ageing involves physical, cognitive, social and familial losses and brings with it an increased incidence of disability and the need for assistance with activities of daily living. While there is a lot of emphasis on the physical well-being of older people, the same emphasis or importance has not been placed on their mental health and wellbeing. Research shows that having negative perceptions of ageing have also been associated with poorer functioning and increased mortality. Promoting successful ageing is an important part of maintaining physical and mental wellbeing in the elderly.

The demand for mental health practitioners with expertise in older adult care will expand as the older population grows. Demand for mental health services is expected to rise as large cohorts of middle-aged individuals—who are more accepting of mental health services than the current generation of older people—move into old age.

Researchers estimate that almost two-thirds of older adults with a mental disorder do not receive needed services. This problem is particularly acute in rural and underserved groups, such as those living in poverty and some ethnic and racial groups.

Research suggests that a majority of older adults would want to be treated should they become depressed. When given a choice for the treatment of depression, older adults often prefer psychological services to antidepressant medication. Older adults report feeling comfortable receiving mental health services from qualified mental health professionals.

The estimate "AESM is my home" together with the estimate "My House is AESM" reflects the psychological intellectual feeling and emotional feeling created for the pre-retired, retired and post-retired seniors of the AESM within a new AESM Senior Organization ...”

Daily physical exercise represents a beneficial and low-cost strategy, [<https://www.apa.org/monitor/2017/04/cover-aging-motion>] easily accessible to the general population and potentially customizable to specific needs through brief training programs. As was underlined in [Antonella Delle Fave, 2018, p.828] “...**besides physical benefits, participants reported significantly more adaptive emotion regulation strategies ... it is suggesting the potential of moderate physical activity in promoting mental health, emphasizing the additional role of training programs as cost-effective opportunities for elderly people to socialize and improve emotional functioning. Overall, the findings support the view of old age as a stage of competence development and adaptive adjustment, rather than a phase of mere psychophysical decline ...**”

The perspectives on the ageing life course and the role of the elderly within society have made the elderly more essential to maintaining the workforce and offer opportunities for older to **remain economically active long after traditional retirement ages**. The demographic challenge of an ageing population and the increasing diversity of working life have led to an increased focus on the concept of sustainable work over the life course [Antonella Delle Fave, 2018, p.828]. This emphasize the relevance of the quality of a employee’s job and their working environment over the entire course of their working life.

The proposition for the COST Activities “Creation the group of researches to work on International Interdisciplinary Network on Health and Wellbeing in an Age-friendly Digital World” shall intensify research collaboration opportunities to people and robots on physical, intellectual and spiritual dimensions. Special attention is required to study of robots’ influence in the ageing process [Todoroi, D., 2019, p. 68 - 70].

1. The environment in favor of the elderly.

Perspectives on the ageing life course and the role of the elderly within society have made the elderly more essential to maintaining the workforce and offer opportunities for older adults to remain economically active long after traditional retirement ages.

Financial factors are only part of the reason older adults decide to stay in the workforce. Many in this age group work past the traditional retirement age because they want to. Some older workers are motivated by a desire to stay active or to continue workplace social relationships. For others, it is more a matter of the status and self-esteem a job brings. Still others want to pass on their skills and knowledge, a desire the researchers say may be especially important to this generation, and in the best interest of employers.

Employers should keep these motivations in mind if they want to keep these workers and the valuable experience they have to share. Part-time jobs, bridge employment and flexible policies that allow time for volunteering, for example, could meet older adults' need to give back to their communities while also staying in the workforce. In response to the needs of older workers, some employers are making their work environment ergonomically more aging friendly (e.g., making adjustments to accommodate changes in vision or hearing), which benefits all employees regardless of age.

Finding ways to keep older people engaged goes beyond helping individual workers. It could also help the economy, which is facing a workforce shortage and brain drain as older workers with many years of experience and special skills retire.

Encouraging career development for all workers — no matter their age — is one way to keep older workers engaged in the workforce, according to Harvey Sterns, PhD, at the University of Akron. In the past, Sterns explains, most employers did not bother to make training available to older workers. Now employers — and older adults themselves — must recognize that lifelong training is beneficial to the organization as a whole. Employers should offer older employees challenging assignments and evaluate them based on their work merits rather than on stereotypes about older people.

Employers should also make sure that older people can take full advantage of workplace technology. The rapid technological change that has transformed the workplace can threaten older workers' sense of self-efficacy and their willingness and ability to actively pursue employment opportunities, she and her colleagues warn. Age-related changes in perception, cognitive abilities and dexterity can make use of technology challenging for some older people as many systems are designed without considering the needs, preferences and abilities of older adults. Fortunately, there are promising fixes. For example, an older person whose arthritis makes it difficult to operate a keyboard or mouse may do just fine with speech-recognition software.

Our adapted to the Republic of Moldova approach:

It was collected the answers from majority of Rural Administration to introduce SMEs at the different levels and groups using experimental questionnaire of the next type:

1.1. The short questionnaire: on the possibilities of initiation, design, financing, implementation, development and sustainability of SME in your locality

Enter the name of your locality: _____

Do you want to offer a recycling course in the initiation of a SME? Yes/No

Your first name and surname:

Your contact address:

Your direct contact phone:

1.2. The large questionnaire:

1. Write the name of your locality
2. What is the number of population in your locality?
3. Indicate the share of the population in your locality by age categories.
4. Indicate the number of people in your locality who would be interested in setting up business.
5. What types of business (production, offering of services) are there in your locality?
6. Type, number and priority of SMEs, which can be developed in your locality?
7. Do you have free spaces, land that can be rented? If so, please indicate the area (square meters).

8. Spatial needs for your business, in case of business creation, for:
 9. You have the transport available for:
 10. Financial needs for:
 - Building the Rooms required for your business - Yes/No
 - Purchasing equipment required for your business: Yes/No
 - Purchasing raw material for your business:..... Yes/No
 - Remuneration of your business staff:..... Yes/No
 - Public services to your business:..... Yes/No
 11. Do you have media for enterprise (highlighted, initiated, created, consulted and monitored through the WEB-Factory project)?
 12. Needs in specialists for rural SMEs:
 - Economists..... Yes/no
 - Accountants..... Yes/no
 - Informicians..... Yes/no
 - Financiers Yes/no
 - Businessman..... Yes/no
 - Other specialties..... Yes/no
 13. Locality name: _____
 14. Do you want to offer a recycling course in the initiation of a SME? Yes/no
 - Your first name and surname:
 - Your contact address:
 - Your direct contact phone:
- thank you!

1.3. The research projects are proposed and the implementation of the population support activities in the Republic of Moldova in the context of the improvement of the life of youth people and rural intellectuals and, in particular, improving the **living conditions of women, girls and elders** [Todoroi, D., 2019, p. 68 - 70]. Special attention is required to study of robots' influence in the life of age [Todoroi, D., 2020, p. 54-64].

The project "Solutions for migration in the rural sector of the Republic of Moldova" is concerned to **anti-migration management** in the Republic of Moldova [Todoroi, D., 2020, p. 54-64]. The project aims to decrease the number of labour migrants from Republic of Moldova by 40% by creating new working places and developing of abilities of working according to European and global standards. The Project "Solutions for migration of intellectuals from rural sector of the Republic of Moldova" had to implement an twelve month activity by teaching about 80 intellectuals from rural sector of the Republic of Moldova how to write different kind of projects in order to attract local, republic, and foreign investors and to rise rural sector in different areas.

The general objective of the project "Entrepreneurial and Digital Skills from school to university – a solution for future economic development of North-East Romania and Republic of Moldova. Educational network around the RO-MD border" [Nechita, E., 2019, p. 142-146] is to support the economic development on **both sides of the Romania-Republic of Moldova border**, through building a joint network of educational institutions to pilot a program on **entrepreneurial education and digital education**.

The project "Business plans for Women's rural SMEs" will perform the business development **training for women and girls** [Todoroi, D., 2019, p. 68 - 70] on how to write

SOFT Business plans for Women rural SMEs. Main objective of the Project “Rural SMEs for Network “Demand & Supply” [Todoroi, D., 2019, p. 68 - 70] consists in training the population from Ungheni District’s rural localities to prepare Dijital Business plans for rural SMEs. Proposition the Proposal: “The creation of the European Network for the implementation and support of industry for elderly people” contains Strategic goals and Spheres of activities for people in the age.

2. The continuity of the work for the Seniors.

Our team’s Short Term Scientific Mission (STSM), is a part of an **empirical research** named “The psychological particularities of adapting the elderly in a transitional society”, which is also the topic to my dissertation for my doctoral degree.

The STSM at Netherlands is geared towards creating **methods of improving the lives** of all elders, and first of all professionals who have reached retirement age (hereinafter referred to as **Seniors**). They are divided in **3 groups**: (a) the pre-retirement Seniors (those who will retire in the next 5 years), (b) the Active Seniors (the retired Seniors with part-time activity), and (c) the Seniors without activity (the post-retirees).

The primary objective of this dividing seniors in three groups is to assure **the continuity of the work of these seniors in the same enterprise**, in which the seniors are acting in present time, and they will act in the future up to the deepest age [Zhan, Y., 2009, p. 374-389].

The **basis for maintaining and improving the creativity and emotionality** of the senior professionals in their transition from one stage of seniority to another is **to establish negative moments** of psychological breakdown.

The questionnaires [<https://35pytx37zdp5j4hfr35of829-wpengine.netdna-ssl.com/hdfs/wp-content/uploads/sites/13/2019/02/aarc-10-accessible.pdf>], which will be implemented within the STSM, are based on the characteristics of the psychological well-being of the elders in the sectors of psychological energy loss. The obtained results will give the possibility to apply methods of maintaining and improving the creativity and psychological emotional excitement of the elderly.

2.1. The STSM

2.1.1. Society must ensure a psychologically decent life for the elderly which: (1) have to activate in society, (2) have to produce spiritual, intellectual and material goods, and (3) have to consume goods from society.

2.1.2. The elderly require to carry out activities & ensure the effective consumption. The perspectives on the ageing life course and the role of the elderly people within society have made the elderly more essential to maintaining the workforce and offer opportunities for older to remain active spiritually, intellectually, and physically long after traditional retirement ages.

In order to achieve this noble goal, the elderly psychologically require **to carry out activities**, which, psychologically **would ensure the production by the elderly** of spiritual, intellectual and material sustainable goods for society, and psychologically **would ensure the effective consumption by the elderly** of spiritual, intellectual and material sustainable goods from society.

2.1.3. Production of goods by the elderly.

The production of sustainable spiritual, intellectual and material goods for society is a psychological necessity of continuity of social activities with which the elderly have become accustomed for many years until the advanced age. The production of goods by the elderly for

society (and for itself) ensures the conviction of the necessity of the elderly for society: „**The society needs me, therefore, I live because I am necessary for society**”.

2.1.4. Consumption of goods by the elderly.

Psychologically **the consumption** of spiritual, intellectual and material goods in society constitutes a second part of the activity of the elderly. It constitutes a psychological necessity of continuity of social activities, which ensures the daily well-being of the elderly. Society must ensure a decent life for the elderly. Psychologically the consumption of spiritual, intellectual and material goods in society by the elderly, in conclusion, constitutes the major purpose of society.

2.2. Potential outcomes.

The idea of the STSM project represents the spheres of the COST CA 16226 interests, because, as stated above, this mission is a part of an empirical research named “The psychological particularities of adapting the elderly in a transitional society”, which is also the topic to my dissertation for my doctoral degree, and shares the same vision as **SHELD-ON**.

In the Academy of Economic Studies of Moldova (AESM) recently was created the Association “The AESM’s Seniors”. This continuing activity of the seniors have to be investigated with the thoroughgoing study of their **creational and emotional psychological performance**. Most of the researches we make, are oriented to achieve the purpose of maintaining and developing the seniors’ progress in their activities inside their habitat and in the process of transition from one of the group of seniority to another.

The results of our investigations, partly coming from the mission work, carried out through this STSM project, will be used in organizing the activity of the Association “The AESM’s Seniors” - the society of ASEM elderly – the persons with the title of employees, associates and affiliates of ASEM - which supports and implements the continuous life of all ASEM elders, and will be proposed to be implemented in the network of all the educational institutions of the Republic of Moldova and in the network of the European’s universities with the goal to exchange the accumulated experience.

3. More comfortable society for the elderly.

It will be collected information about the **psychological needs of creativity and emotionality** based on international environment (Moldova-Netherlands) of questioning elderly people from different groups of seniors.

Based on collected data on the psychological energy leaks focused on the characteristics of the creativity and emotionality of the elders will be analyzed the statistical **methods of maintaining and improving the psychological excitement of the seniors** from three different groups of the seniors.

Collected data and analyzed methods will support the methodology and the decisions to be proposed in the branch of creating a **more productive, healthier, and more comfortable society for the elderly**.

4. The creative and emotional psychological well-being of the elderly.

It was created and used questionnaire, composed from the 7 directorates of psychological investigation: *My face, My body and its construction, My appearance, My expressive behavior, My appearance as a person, What actions man makes himself weaker and wastes his energy of life?, and A wish card or a view board.*

4.1. Getting acquainted with the host institution at Netherlands is organized by presenting some of the examples.

Example 1: One part of Questionare: For each of the following statements and/or questions, please circle the scale score that you think is best for you

I rate my face as...						My face
1. Ugly	1	2-4	5-6	7-9	10	Beautiful
....					
8. Ungroomed	1	2-4	5-6	7-9	10	Lush

Example: 3. My appearance

I appreciate my appearance (Hairstyle, makeup, cosmetics, clothes, jewelry) as...

Example: 4. My expressive behavior

I appreciate my expressive behavior (gestures, facial expressions, walking, looking) as...

Negative score	Example: 12. In various situations and with I different people							I Positive score
I behave the same way	-3	-2	-1	0	1	2	3	I behave in accordance with the circumstances

Example: 5. My appearance as a person

Evaluate the following statements: My appearance as a person

Example: 6. What actions man makes himself weaker and wastes his energy of life?

By what actions man makes himself weaker and wastes his energy of life:

Example: 7. A wish card or a view board

The Chinese philosophy of Feng Shui. According to the Chinese philosophy of Feng Shui, there are 9 sectors on the wish map: - Wealth; - Glory; - Love and marriage; - Family; - Children and creativity; - Wisdom and knowledge; - Career development; - Travel; - Personal advancement.

4.2. Presenting our methodology and the kernel questionnaire which is to be applied. Discussing Moldovan and Dutch investigative questionnaires about psychological, intellectual and emotional well-being of elders. Adapting the questionnaire to Dutch language, if necessary.

4.3 Access to local library/database in order to select and study the method of work with a second questionnaire, provided by the host, which is to be applied on the group of seniors. Exchanging with the host institution information on the topic “Measurement, maintenance and improvement of psychological well-being of retired seniors”.

4.4. Organization of the group of respondents. Administering the questionnaire(s) to the sample(s) of respondents in Dutch space.

4.5. Analysis, selection, distribution on three age compartments, and memorization of surveys obtained as a result of the questioning seniors from selected Dutch collectives. Discussion, analysis and selection of statistical methods of processing surveys, spread over three age compartments.

4.6. Process the data obtained in order to propose decisions, to further improve the creative, intellectual and emotional psychological state of seniors from different respondent groups.

4.7. Discussing of proposed decisions in order to improve the creative and emotional psychological improvement of the elders of different age levels.

4.8. Proposal of the methodology and methods to improve self-acceptance [<https://justlikefamilyhomecare.com/2018/07/03/elderly-improve-well-being/>], [https://www.researchgate.net/publication/325161807.The_influence_of_occupation_on_wellbeing_as_experienced_by_the_elderly_a_systematic_review]:

- My face. *Methods to improve self-acceptance*. For example: maintain and improve the well-being of the elderly
- My body and its construction. *Methods to improve self-acceptance*.
- My appearance. *Methods to improve self-acceptance*. For example: to lead the intergenerational collective of the SME
- My expressive behavior. *Methods to improve self-acceptance*. For example: to maintain and improve the well-being of the elderly
- My appearance as a person. *Methods to improve self-acceptance*. For example: elderly leader of the SME
- Actions man makes himself weaker and wastes his energy of life and For example: energy recharging methods for the elderly.
- A wish card or a view board and For example: the method to maintain and improve the well-being of the elderly

5. Implementing the actions chosen to improve the well-being of the elderly of different age levels.

The proposed methodology for the activities to be applied to improve the creative and emotional psychological well-being of the elderly which are based on the results obtained under STSM, is ready to be presented and to be included in SHELD-ON agenda.

5.1. Challenging negative stereotypes [<https://www.apa.org/monitor/features/adults-control-aging>]

Ageism at the societal level can lead to overt discrimination, for instance in biased hiring and termination practices. At the individual level, negative stereotypes about aging can prevent people from engaging in preventive health behaviors, which can ultimately decrease life expectancy.

5.2. Changing the narrative [<https://www.apa.org/monitor/features/adults-control-aging>]

A further problem with the way we view aging—one that’s been amplified by the COVID-19 pandemic—is the tendency to describe older adults as a single homogenous group: in this case, a group that’s highly susceptible to disease and death.

“Older adults are actually the most diverse age group, but they are often seen as unilaterally frail, vulnerable or even expendable,” says Diehl. “The COVID-19 crisis is further reinforcing those existing stereotypes.”

In fact, adults who are 65 to 74 years old, 75 to 84 years old, or 85 and over face different risks. And like the rest of the United States population, older adults are diverse in race, ethnicity, socioeconomic status, immigration status, gender identity, sexual orientation, religious affiliation, and rural/urban location. Those characteristics interact in complex ways as individuals age, says Mehrotra.

The new narrative on aging should reflect that diversity, say Diehl and his co-authors, and focus on challenges and opportunities rather than loss and decline.

5.3. Psychologists' role in making changes [<https://www.apa.org/monitor/features/adults-control-aging>]

Psychologists have already played a key role in debunking misconceptions about aging by studying behavioral and neural plasticity, socioemotional development over the life span and the negative effects of ageism. They've also developed theories and techniques of behavior change, such as self-regulation, that can be applied to help optimize aging.

“In addition to publishing research papers, we should move toward translating evidence in a way that communities can understand and implement,” says Mehrotra.

Convincing people to change their behavior is a tall order, but an intervention Diehl developed shows promise. Eight weeks of education on age stereotypes, goal setting and plasticity—along with a structured exercise program—reduced negative views on aging and increased physical activity levels in adults ages 50 to 82 [Brothers, A., 2017, p.13]. Last year, Diehl launched a large randomized controlled trial to test a modified version of the program.

5.4. The role of physical activity.

5.4.1. Yoga:

Yoga is an activity with low impact on the joints which increases flexibility, stability, balance and core strength for people of all ages. For elderly people who often have difficulties maintaining balance, this is especially important as it can help prevent falls or other accidents.

Here is an overview of what regular yoga practice (2-3 times/week) can potentially do for senior citizens:

Yoga can be practiced by everyone and depending on your ability you will start accordingly with certain exercises. As with any new exercise routine, it is essential to train in a facility with certified instructors and make sure to consult with your doctor before starting.

5.4.2. Walking:

A simple, cheap and effective activity which can be conducted anywhere. It can help to maintain mobility and independence for senior citizens. Non-active or sedentary lifestyle can cause muscle loss and can lower the aerobic capacity. Mark Fenton, editor of the Boston-based *Walking Magazine* mentioned on “American Trails” that, “The elderly have some special physical concerns that can be helped with regular exercise like walking.” He also explains that regular walking/exercising can improve mental health through a higher sense of self-esteem and better sense of purpose.

5.4.3. Meditation:

Mindfulness including meditation has become a tool many people use to improve their mental health and brain capacity. Seniors, specifically, have shown improvement. Apps like Calm.com can help to with an easy introduction to this ancient practice.

Our biggest challenge now is to convince the person on the street that they have more control over their own behavior and aging than they know. That's what our field should focus on next.

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The results will contribute to solving problems and actions carried out within the COST CA 16226, Indoor living space improvement: Smart Habitat for the Elderly (SHELD-ON), this way creating a better society for everybody.

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THE CONCEPT OF THE EUROPEAN MARITIME SINGLE WINDOW ENVIRONMENT FOR SIMPLIFIED DIGITAL INFORMATION SYSTEM, INTRODUCED BY THE REGULATION (EU) 2019/1239

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ABSTRACT. The paper discusses the general concepts about the introduction into the national legislations of the member states the requirements of the Regulation (EU) 2019/2039, establishing a European Maritime Single Windows environment. The research methods applied are the ones of the legal analyses and the comparative method. The contribution of the paper consists of general conclusions about the effectiveness of the simplified digital system in the European maritime transport which harmonizes the existing national systems and aims at the administrative burden for the participants to be reduced.

KEYWORDS: *European, maritime, single window, regulation, effectiveness, harmonization, implementation*

INTRODUCTION

Maritime transport is one of the most dynamic sectors in the global world, with nearly 80% of world trade transported by sea and is carried out by sea, with a large share in world trade, maritime transport is becoming a major mechanism in the world economy. With the growing global changes in the maritime sector worldwide, changes are also needed at the regional stage to facilitate the paperwork and cargo handling capacity of ships in ports.

The European Union is one of the main regions in maritime transport, which for the purpose of improvement of the maritime sector with electronic platforms, has adopted the Regulation (EU) 2019/1239 on the creation of the European Maritime Single Window environment. The above-mentioned regulation has been adopted by the European Parliament and the Council and it repeals Directive 2010/65 / EU.

The basic goal of the regulation is to complement Directive 2010/65/ EU, to optimize the paperwork and cargo turnover of European seaports, as well as to contribute for the much better efficiency.

The place and importance of the Regulation in the European maritime sector and port services is huge, with the rapid growth of port ship handling services. It is designed to increase the capacity of receiving and transmitting cargo, with the introduction of the electronic platform.

1. Theoretical background and legal framework of the Regulation

In recent years, the European Union has adopted a number of documents, directives and the recently adopted regulation establishing the European Maritime Single Window environment, which facilitates electronic data transmission in relation to reporting obligations for ships arriving or leaving ports in Union, or stay in these ports [1]. With the establishing of the Blue Belt, the European Commission is easing customs formalities, reducing

administrative burdens, which means less costs for shipowners and faster ship services. The regulation lays down the theoretical basics of the Blue Belt for the facilitation of customs formalities for the examination of ship data, the use of bureaucracy, and a serious administrative check on the presentation of existing specific data [2].

What is the problem?

The EU is heavily dependent on maritime transport for its trade with the rest of the world and within the internal market [3]. Nevertheless, the maritime sector is one of the most important sectors in the European Union and is therefore of particular importance in the structures of the Union. Due to the high administrative burden, which increases costs, the European Union had to simplify customs formalities and ship reporting formalities for ships arriving in and/or departing from ports of the Member States. The predecessor of Regulation 2019/1239 is Directive 2010/65/EU - on ship reporting formalities, which introduces European Maritime Single Window environment. In the meanwhile, the inspections carried out by the European Commission note that the European Maritime Single Window environment does not work equally effectively in all member states of the Union. The lack of expected results necessitates the repeal of Directive 2010/65/EU and the adoption of Regulation 2019/1239 by the Council and the European Commission.

2. The predecessors

The predecessor of the regulation – Directive 2010/65/EU was meant to ensure that member states would no longer need to use paper formats of documents, but to maintain electronic transmission of data for the purpose of facilitating the maritime transport. It should be considered that the full benefit of electronic data transmission can only be achieved where there is smooth and affective communication between SafeSeaNet, e-Customs and the electronic system for entering or calling up data. [4]

Most importantly is to stress the fact that the consequentiality of the regulations in maritime transport has always been sustainable and subordinate to the main objective to prevent unnecessary delays in maritime traffic, to aid co-operation among governments, and to secure highest practicable degree of uniformity in formalities and other procedures. In particular, the Convention reduces the number of declarations which can be required by public authorities. [5]

The firstly adopted legal regulation in the sphere is the International Maritime Organization Convention on Facilitation of International Maritime Traffic in 1965 for the purpose of implementing a more streamlined logistic process. The Convention on Facilitation of International Maritime Traffic (FAL) entered into force on March the 5th 1967. The basic reason for the adoption of the Convention is due to the international nature of shipping where countries may create different standards of documents or different requirements and administrative formalities.

Several amendments have been introduced to the Convention, the latest one The Convention These amendments introduce new definitions for Cargo Transport Unit (CTU), clearance, freight container, the International Ship and Port Facility Security (ISPS) Code, master, ship agent, shipper and single window.

Since 9 April 2019, Electronic exchange of information is mandatory with a transition period of no less than 12 months. The text now refers to the use of "Single Window" systems and has been revised in a gender neutral format.

All IMO FAL forms were revised except for Ship's Stores Declaration (IMO FAL Form 3). Three additional documents were introduced for ship's clearance that may be required by the shore authorities, i.e. security-related information as required under SOLAS regulation XI-2/9.2.2, Advance electronic cargo information for customs risk assessment purposes, and Advanced Notification Form for Waste Delivery to Port Reception Facilities [5].

In response to the above-mentioned amendment in the Convention, and the requirement within 12 months for implementation of electronic exchange of information to be mandatory, the European Parliament and the Council of the European Union adopted Regulation 2019/1239.

The main aim of the Regulation is to lay down harmonised rules for the provision of the information that is required for port calls, in particular by ensuring that the same data sets can be reported to each maritime National Single Window in the same way. This Regulation also aims to facilitate the transmission of information between declarants, relevant authorities and the providers of port services in the port of call, and other Member States. The application of this Regulation should not alter the time frames for, or the substance of, reporting obligations, and should not affect the subsequent storage and processing of information at Union level or at national level [1, p. 4 of the Preamble]

Another reason for the adoption of the Regulation is to prepare the future development and the use of National Single Window for other transport models. These actions would provide for the harmonization of the national single windows at Union level. The harmonization would contribute for the use of every National Single Window of common interface software for system-to-system exchange of information, developed at Union level. Every Member State would be responsible for the integration and managing the interface module, as well as any forthcoming updates of the software. [1, p. 7 of the Preamble]

The implementation of the Regulation would have to consider the SafeSeaNet systems which is established at national and Union level. The SafeSeaNet system facilitates the exchange and distribution of information received through the maritime National Single Window between the Member States in accordance with Directive 2002/59/EC of the European Parliament and of the Council. [1, p. 17 of the Preamble].

In article 1 of the Regulation it establishes the subject matter and the scope of application. For the purpose of the optimal understanding and application of the norms of the regulation, the second article specifies the content of the terms which are used in the document. It provides legal definitions for the terms as “European Maritime Single Window environment (EMSWe), the term “ship”, “maritime national single window”, “harmonized reporting interface module”, “reporting obligations”, “port call”, “data element”, “common addressing service” etc.

Chapter Three of the Regulation provides provisions regarding information via the Maritime National Single Window which should be guaranteed. Thus it means that every Member State should establish a maritime National Single Window through which, in accordance with this Regulation would provide data and all information necessary for the fulfilment of reporting, by means of and in compliance with the EMSWe data set.

It is possible one Member State to establish a maritime single window jointly with another Member State. Member States which do not have maritime ports shall be exempted from the obligation to develop, establish, operate and make available a maritime National Single Window.

The means via which the reporting is being organized may also include: harmonizing reporting interface as well and other means, but most important is how the responsibility of the communicated information would be distributed. It is regulated in article 9 of the Regulation.

Besides the specific technical issues which are taken into consideration with the Regulation, there are a few common provisions which emphasize on the specific national authorities which would be liable for the implementation of the provisions in the national system. The European Commission on the other hand will be responsible for the adoption and implementation of acts laying down the technical specifications, standards and procedures for setting up the common user registry and access management system.

CONCLUSION

This Regulation which establishes the requirements for the creation of unified interface for exchange of information and documentation shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Union. It shall apply from 15 August 2025 onwards. The entire functioning of the newly established technical interface should go hand in hand with the harmonization of a number of the legal acts in accordance with the requirements of the Treaty on the Functioning of the European Union, and in particular Article 100(2) thereof, as well as considering the proposal from the European Commission, the draft legislative act to the national parliaments, the opinion of the European Economic and Social Committee.

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POLICIES OF CONSUMER PROTECTION WITHIN THE PROCESS OF DEVELOPING RENEWABLE ENERGY SOURCES

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ABSTRACT. The decline regarding renewable energy costs, the improvement of energy efficiency, the introduction of smart technologies, continuous technological breakthroughs and the development of policies in this area contribute to ensuring a sustainable energy future. The sustainable energy development has become a priority for the European Union, and the development of renewable sources - a strategic objective within the European policies of development. In order to ensure the energy security and consumer safety, ambitious targets and innovative solutions have been proposed in order to adopt new strategic policies in this field. These targets have been set as the energy market becomes increasingly fragmented and the security of energy supply is jeopardized. From this point of view, the completion of a really integrated internal market is a priority within the European and national policies in the context when consumers have primary legal force as they require to completely benefit from their rights concerning the quality, safety and security in terms of energy production, transport and use.

The purpose of this investigation consists of accomplishing a multi-aspectual research of the European policy in the context of renewable sources development and consumer protection by elucidating factors, subjects and conditions related to it. The methodological support includes a set of means and procedures which concretize the research idea, elucidate systemically, objectively and scientifically the investigated problem. The obtained results consist in problematic approach of consumer rights in the context of renewable energy development policies taking into account the theoretical and practical aspects of all factors and circumstances relevant to the research topic.

KEYWORDS: *renewable energy, European policy, consumer, energy market, strategies.*

Favoring the development of alternative energy sources that has as the effect the increase of the demand for the energy obtained from renewable sources is an important task of the Government of the Republic of Moldova and other decision-makers empowered with responsibilities in this field. The promotion of these policies is also conditioned by the existing energy crises, worsening of climatic conditions, consumers' vulnerability.

For these reasons, the expansion and diversification of alternative energy sources has become an undisputed priority of the Government. At the same time, this includes actions related to the development of the legal and institutional framework in the field of reference, the establishment of some support measures for producers who produce energy from renewable sources, competition promotion.

The primary and the secondary legal framework in Moldova is oriented towards ensuring the organization and transformation of the energy system so that producers and

consumers to take full advantage of the energy obtained from alternative sources. Despite taken actions, the energy transition is a real challenge for current policies because they have to meet those three fundamental dimensions: energy security, energy equity and the sustainability of energy systems. Together, they constitute a "Trilemma", and the achievement of high performances in all three dimensions involves complex links between public and private bodies, governments and regulatory authorities, economic and social factors, national resources, environmental concerns and individual consumer behavior [17, p.8]. The regulation of the three dimensions ensures the development of the energy sector and, respectively, the facilitation of the transition process to a clean energy, determined by the capitalization of renewable energy sources. This process records essential successes, especially at the European level, in comparison with small national achievements.

The development of the energy obtained from renewable sources, also called "green energy", is a viable opportunity in the context in which the entire energy system is aimed at ensuring energy security and eliminating the factors that harm the nature, the environment and affect the quality of life. Considering the fact that the renewable energy refers to those forms of energy produced by the energy transfer of the energy resulted from natural renewable processes [16], such as hydropower, wind, solar energy, geothermal energy, the biomass or even the energy of waves and tides, obtaining it has become an important component of the energy policy at national, european and international level.

The process of elaboration, adoption and implementation of sustainable development policies in the energy sector was launched nationally by signing by the Republic of Moldova of the Kyoto Protocol [8]. Manifesting a form of solidarity against climate change with the other signatory states, our state has committed to take concrete action in promoting renewable energy sources. First of all, it has committed to improve its legislative system because the legislation has the strongest impact on the applicability and development of renewable energy sources and the protection of consumer rights.

The adjustment of the national legal framework to the European and international requirements and standards is also dictated by the desire of the Republic of Moldova to continue its European vector and to become a fully integral part of the European Single Market.

The development of new energy policies has been also boosted by Moldova's admission to the Energy Community in 2010, the legal fact confirmed by Law no. 117 of 23.12.2009 [7]. Reforming the legal framework concerning the sustainability of the energy sector, the development of renewable energy promotion policies and consumer protection were triggered within the commitments assumed by Moldova, with the signing of an Association Agreement with the EU since June 27, 2014. In the field of energy and consumption, the Agreement underlines the commitment of Moldova to further strengthen the energy cooperation EU - Moldova by enhancing the security of energy supply, facilitating the development of appropriate infrastructure, increasing the integration of the markets and the regulation of key elements of The Union *acquis*, as well as the promotion of energy efficiency and the use of renewable energy sources [1; 4, p. 9].

After signing the Association Agreement, the Republic of Moldova continues to adapt national policy in accordance with the European standards and policies. In this regard, the first main document on renewable energy sources was Law no. 10/2016 on promoting the use of energy from renewable sources. This law comes to actualize the provisions of the Directive 2009/28 / EC concerning the promotion of the energy use from renewable sources. The

mentioned Directive was repealed by the Directive 2018/2001 of December 11, 2018, by triggering a number of amendments at national level. Pursuant to the provisions of the Directive 2018/2001, the Law concerning the promotion of the energy use from renewable sources was amended and supplemented by Law no. 34 of March 16, 2018, an increased attention being paid to legal regulations regarding the protection of consumer rights.

This fact is very visible in the context in which, taking into account the provisions of the above-mentioned Directive, at the elaboration of the national primary and secondary regulatory framework in the field, it was aimed was to transpose the European legal provisions regarding the status of energy consumer from renewable sources. Also, in developing the national policies, it was taken into account the fundamental objective of the European Union, which states that the intensification of renewable energy is an important component of the package of measures needed to reduce greenhouse gas emissions established by the 2015 Paris Agreement on climate change [14]

Analyzing the existing legal framework on renewable energy, we note that the Republic of Moldova, following the relevant European policies, adopt legal provisions to guarantee consumer safety. The argument comes in the context in which, currently, energy is the one that ensures personal comfort and people' mobility, being also essential in the development of industrial, commercial and social capacities. From this point of view, obtaining the energy from renewable sources is a key component within a vicious process of qualitative energy assurance of the population as the environment becomes increasingly polluted. In this circle, the safety and the respect of consumer rights have become an objective that is being emphasized with the increase of the energy share obtained at international level.

In order to protect the consumers' rights in accordance with the rules of European law, the Republic of Moldova has improved its legal framework, and currently has several legal mechanisms through which consumer rights can be protected. At present, consumer protection has become a principle of regulation of civil law as a whole [15].

Renewable energy sources play an increasingly important role in improving the national energy security but also that of the European Union as a whole. This role seeks to be mitigated by keeping oil prices low, creating competitive risks. Despite this, in many European countries the share of renewable energy is remarkably successful in the context in which it can already compete on price, with the energy obtained through the use of fossil fuels. Under these conditions, the obtaining and use of renewable energy by the final consumer, leads to a decrease of the negative impact on his health and life.

In order to increase consumer confidence in the use of renewable energy, the European Union has provided in the text of Directive 2018/2001, legal rules on small-scale installations. The use of small-scale installations can significantly contribute to increasing public acceptance of renewable energy and ensuring the implementation of projects related to this form of energy, especially at the local level [3].

In its conclusions from October 23rd and 24th 2014 on "Climate and Energy Policy Framework for 2030" [13], the European Council emphasized the importance of a higher degree of interconnection of internal energy market and the need of sufficient support to integrate higher levels of energy from variable renewable sources, thus enabling the Union to accomplish its leader ambitious goals in the energy transition. It is therefore important and urgent to increase the level of interconnection and to perform progresses in order to realize the objectives of the European Council to fully exploit the potential of energy union.

It was mentioned about the importance of providing information to consumers on how electricity is produced from renewable sources, and finally distributed to final consumers, was also mentioned on how supported electricity is further allocated to final customers. In order to improve the information quality for consumers, we need to ensure that the guarantees of origin are issued for all the energy units produced from renewable sources, unless the member decides not to issue the guarantees of origin to producers who also receive financial support. If the Member States decide to issue the guarantees of origin to producers who also receive financial support or if they decide not to issue the guarantees of origin directly to producers, they should be able to choose by which means and mechanisms to take into account the market value of these certain guarantees of origin. When the producers of renewable energy also benefit from financial support, the market value of the guarantees of origin for the same production should be properly taken into account in the relevant support scheme.

Taking into account these aspects, the European Union and third countries, as well as the Republic of Moldova, must regulate very clearly the right of renewable energy producers, in the context in which they become self-consumers. By becoming self-consumers of their own energy, producers have the following rights:

- to produce energy from renewable sources, including for own consumption, to store and sell their surplus production of electricity from renewable sources, including through contracts for the purchase of electricity from renewable sources;
- install and operate electricity storage systems combined with renewable energy generation facilities for self-consumption without having to pay any double charge, including network charges for stored electricity remaining in their premises;
- to maintain the rights and obligations of final consumers;
- to receive, including, where appropriate, through support schemes, for self-produced renewable electricity which they introduce into the grid, a remuneration which reflects the market value of that electricity and which may take into account the long-term value of electricity introduced for the network, the environment and society.

At the same time, the rights of consumers who are only beneficiaries of renewable energy must not be violated. In particular, consumers should not be restricted to the right to information, the right to choose the energy supplier, the right to choose the source from which renewable energy can be obtained, the right not to pollute the environment, the right to have access to a clean energy in the same conditions and at the same prices, etc.

Unfortunately, regardless of the level applied, these rights are sometimes violated, either because an energy monopoly is established or because the consumer is not fully informed or does not have the appropriate technologies necessary for the use of renewable energy or is placed in a vulnerable economic situation.

Thus, some issues related to non-compliance with the consumer rights in the field of renewable energy, appeared with the placement of the consumer in the center of the energy market as the access to affordable energy has become a real concern for vulnerable groups and those with low incomes in conditions where the energy poverty is being increased. Concerns about improving the energy market are growing among the European consumers and in the context of failures which are related to: complex tariffs, price increase, poor services or inadequate sales, the difficulty of change and confusion about what consumers can do to reduce the bills, including how to be energy efficient is increasingly emphasized.

In order to meet these challenges and to eliminate the legislative shortcomings in the field, the European Union has adopted and implemented numerous measures aimed at

developing, promoting and reorganizing the energy market. First of all, the focus was put on developing the renewable energy sources, by attracting investments in the field, increasing the recovery capacity of national economies by developing renewable energy, protecting the environment and protecting the vulnerable consumer from the energy point of view.

Encouraging the development of renewable sources at European level is a matter for the European Commission. This institution, which plays an active role in the development and promotion of energy efficiency strategies, in addition to acting as a supervisor in the process of implementing the European energy policy at national level, in addition to supervising the implementation of European energy policy at a national level, is also a key player in the field of energy management by proposing solutions, setting priorities for the future, developing and adopting strategies and identifies objectives that have not been fully achieved and those that need to be reformulated.

Annually, the European Commission carries out multiple studies on the Energy Union and the current stage is the implementation of the strategic measures and carrying out various evaluations. As a result of the research, this institutional mechanism issues various communications to express its views and to puts forward for adoption more predictable, transparent, and stable proposals concerning the energy and climate plans nationally integrated. These assessments target major subsectors of the energy field, such as that of renewable energy sources.

Thus, the rational use of green energy has become a concern for this institution, which must constantly update the European energy policies, setting new strategic objectives. These objectives, which are also quite ambitious, are developed depending on technological developments and real possibilities of the consumer to access to the energy obtained from renewable sources.

Hence, the technological changes and new policy objectives adopted in order to decarbonise the energy from the system, contribute radically, but gradually, to the reorganization of the energy market for the next decades. These two aspects essentially contribute to the recovery of the economic situation of consumers by the fact that in the process of the energy transition, these subjects are offered a lot of opportunities, especially by the fact that they can interact with energy, can save financial resources and can contribute to protecting the environment by diminishing the negative impact [2, p. 27].

If we refer to the dynamics of consumer protection policy in the process of capitalizing of the Union's renewable energy sources, we see that it has grown steadily since the signing of the Maastricht Treaty, with the main objective of stimulating the sustainable growth by protecting the environment. The main objective established in the Treaty is to stimulate sustainable growth by protecting the environment. Subsequently, the principle of sustainable development was stipulated in the Amsterdam Treaty, becoming one of the priority objectives of the European Union. In addition, this objective was the basis of the "Europe 2020 Strategy", proposed by the European Commission on 3rd of March 2010 as a 10-year agenda for Europe's economic and social development. This strategy aims at "intelligent, sustainable growth and favourable to inclusion", with greater coordination of national policies [12, p. 102].

In the context of streamlining the energy system and stimulating the desire to use the energy from renewable sources more efficiently, the implementation of the measures set out in the Energy and Climate Package for 2020, adopted in December 2008, has also proved to be very important. Its importance is determined by the fact that, in addition to reducing

greenhouse gas emissions, the Energy Union has also called for reducing the total energy consumption.

The implementation of the package has also boosted the adoption of a new policy at the European level. In this regard, in 2012, the European Commission presented the Communication entitled "Renewable Energy: a major presence on the European energy market". The Communication containing the energy options that should be accomplished after 2020 calls on the Member States of the European Union to take part in a more coordinated approach to providing more diverse and complex support programs in the context of exploiting the energy from renewable sources in the period of transition.

The reforming of European energy policies was also driven by the signing of the Paris Agreement and the publication of the Energy Union Strategy. Their importance is determined by the fact that the Agreement by its finality represents the first universal agreement, of a binding nature, which guides the actions at a global level, to limit the increase of the global average temperature. At the same time, the Agreement gives more rights to consumers, protecting the most vulnerable customers and defining the roles and responsibilities of each participant in the energy market.

Unlike the first document, the Strategy launches several major projects that will focus on key areas for ensuring Europe's competitiveness, and obviously for protecting consumers and small energy producers. Overall, these legislative and implementing acts are part of the European Union's energy policy, a policy that strongly promotes the energy efficiency. As we can see, similar objectives related to the competitiveness of the sustainable energy sector were outlined in the Development Strategy of the Republic of Moldova 2030.

The mentioned objectives shall be achieved in the context of a new legal regulatory framework that was adopted by the Directive 2018/2001 / EU to which we referred earlier. The legal regulatory framework of this Directive is complex and intensively promotes the viable energy from renewable sources, including the protection of consumers in the competitive energy market. Its rules are also the basis of the European Green Pact of 2019, considered the most ambitious plan of all times that has been developed in the energy sector.

The legislative framework of the European Union that has been adopted and promoted under the "Clean Energy for All European Citizens" package also strengthens the consumer rights. This package, in addition to being an opportunity to accelerate the transition to clean energy, as well as the economic growth and the creation of work places, also offers multiple opportunities for consumers to have free access to the energy transition process. In particular, the legal provisions included in this package are intended to ensure access to energy for vulnerable consumers and those who, for social or economic reasons, are at risk of energy poverty.

The new regulatory framework for the European Union's energy market encourages the active involvement of consumers in the development of renewable energy. This fact has been possible due to the implementation of regulations aimed at improving the consumer-oriented competitiveness. By giving them more rights, this framework facilitates consumer participation in the market as active customers, thus contributing to eliminate distortions and create a much freer market in terms of competition.

The implementation of the European legislative framework in the field of energy at the national level has generated various discussions and prompted the initiation of extensive research. In this context, there were enacted the most varied hypotheses regarding the capacity of renewable resources and the importance of the energy obtained by them on consumers.

Energy importance is highly tackled topic in the literature, regardless of whether it is exposed from a legislative, doctrinal, or practical point of view. All aspects are of decisive relevance.

Farihan Mohamad, Jiashen Teh, Ching-Ming Lai and Liang-Rui Chen, energy researchers, also emphasized the importance of harnessing energy. The authors in published articles report that electricity plays a crucial role in the well-being of humans and is a determining factor of the economic development of a country. Electricity issues have encouraged researchers to focus on improving power availability and quality along with reliability. This pursuit has increasingly raised the intention to integrate renewable energy into power systems to curb the problem of energy deficiency [9, p. 2].

Generally, the energy sector has been perceived as a key to economic development with a strong correlation between economic growth and expansion of energy consumption. Globally, per capita incomes are positively correlated with per capita energy use and economic growth can be identified as the most essential factor behind increasing energy consumption in the last decades. It in turn creates employment; renewable energy study in 2008, proved that employment from renewable energy technologies was about 2.3 million jobs worldwide, which also has improved health, education, gender equality and environmental safety [11, p. 2].

Being considered a symbol of socio-economic development and civilization, green energy must be seen as a system of economic activities related to the production, distribution and consumption of goods and services that results in improving human well-being and social equity, while reducing the risks to which it is subject to the environment and the ecological deficit, created by man [10, p. 7]

Thus, the supply of the population with energy obtained from renewable sources determines as a whole, the development of human society. The supplies with this type of energy contribute for the most part to reducing the greenhouse gas emissions because they are obtained naturally and thus contribute to reducing the energy burden that is distributed to consumers. From this point of view, the sustainability of obtaining the energy from renewable sources must be guaranteed because only in this way, the consumers will be insured from an energy point of view and the environment will be protected.

Following up the ideas related above, we can mention that the sustainability of sustainable energy and the protection of consumers from energy risks, continue to be the main priorities of the European Union. In this regard, with the completion of the "Clean Energy for All Europeans" package, new objectives have been set in the field, including the priority directions to be followed by all active actors who are consumers of electricity. Following the pre-established directions, the aim would be to achieve the ultimate goal, namely the unlimited supply of consumers with the energy from renewable sources, within affordable conditions and at affordable prices, without having harmful effects on the environment.

The new targets were set out in the European Green Pact, which was adopted in 2019. This legal instrument comes with much more ambitious targets than those set out in the first package, namely that by 2050, all European citizens and businesses in Europe, will benefit in the transition period to a green economy, clean and sustainable energy obtained from renewable sources. In this context, the civil and economic society will enjoy more benefits in the context of which greenhouse gas emissions will be reduced, the dependence regarding the imported energy will be eliminated, competitiveness between renewable energy producers will be increased and a balance will be established on limiting the price of the energy on the market.

The Pact comes with a set of measures by which a much more just and socially equitable transit route can be established. It is designed in such a way that, in the process of energy efficiency, all people, regions, and states, fully benefit from its advantages.

For a multi-aspectual research of renewable energy development in the context of policies of promoting the consumer rights, were used: the historical method, which was used to research the evolution of the adoption of the main legal instruments in the field; the logical method, being indispensable in studying and analyzing the notions, as well as in formulating conclusions and recommendations; the method of systemic analysis, by means of which were structurally analyzed the development policies and strategies in the field of energy efficiency and the comparative method, by means of which was performed an analysis of the national legal framework adopted in the field of energy in regard to the European legal regulations.

The global energy system must be transformed. Although addressing climate change remains a key driver, the energy transition brings a much wider range of benefits than simply carbon emissions reduction. It can make universal energy access affordable, improve human health, increase the energy security and diversify the energy supply. At the same time, the energy sector alone will not provide every solution. A holistic approach to energy transition should be adopted that considers all facets of the economy and society. The transition should also be just: policies should promote universal energy access and identify and support those who will be adversely affected by changes the transition would bring [5, p.17]

Definitely, the European policy has evolved and set new priorities as it has put particular focus on renewable energy, energy efficiency and on providing equitable solutions for consumers. In any case, no matter how strong is the legislation in the field, at present it cannot fully protect the final consumers from the negative consequences of global environmental degradation. Also, the European policies adopted in the field are not sufficient to stimulate the constant demand for the energy from renewable sources and to support small energy producers.

From this point of view, the regulatory framework adopted in order to develop renewable sources, to increase competitiveness at national level, to ensure the transition towards a clean energy and to protect the final consumer, is constantly subject to changes and completions. These are adopted in the context in which the legal regulations come to cope with the new changes taking place in contemporary society, a society that is increasingly affected by the energy poverty.

The energy poverty is a problem for the whole community. This cannot be resolved very quickly because, at global, European, regional, and national levels, economic crises are severely affecting competitiveness. Regardless of this, the Member States of the European Union, as well as some third countries, such as the Republic of Moldova, are obliged to adopt policies and measures to protect consumers, especially the vulnerable, by improving competitiveness and challenging the price of retail energy. The Governments are also responsible for implementing energy efficiency measures for this vulnerable sector, implementing various financial support programs, including by adopting guarantees against disconnections in the event of non-payment.

As part of the governance process, the Member States must also implement a number of strategies, monitor the energy situation and report on the successes and failures of the fight against energy poverty.

Taking into account the information provided, the European Commission will be able to put forward new proposals for energy efficiency and issue new guarantees to empower and

protect consumers, establishing and guaranteeing high-quality services and conditions that will reduce the energy poverty, respectively.

We now note that the Member States of the European Union, including third countries, have set various objectives, policies, and actions at the national level that are aimed at protecting the vulnerable consumer. Properly adapted, they support the poorest areas. However, the phenomenon of energy poverty can be difficult to combat as the number of vulnerable consumers increases. This issue comes in the context of economic instability, migratory flow, and the increase of the number of people who are unable to work. Regardless of this, the state governments are fighting to reduce the poverty, increasing the burden which is imposed upon the state in order to secure and supply their own citizens.

Under these conditions, the states promote similar strategies for the development of the energy from renewable sources, and similar objectives, respectively, such as:

- Increasing the population's access to electricity by means of and by the support of funding programs from national and European authorities, respectively, in the context of the objectives set for the Energy Union;
- Reducing the energy poverty and protecting vulnerable consumers in order to ensure human rights. This goal can also be achieved only by providing adequate social assistance;
- Establishing a tariff ceiling for energy from alternative sources, including bringing the existing legislation into commitment with the standards and requirements imposed by the European energy efficiency system and the protection of the environment and others.

Thus, in order to improve the quality of life of its citizens, the Government of the Republic of Moldova, the governments of third countries of the European Union and the European Commission have sought to focus its sectoral policies on the issues, interests and aspirations of the society. As a priority, they aimed to make more efficient the consumption of the energy obtained from renewable sources, to capitalize the economic and ecological potential of green energy, but also to support the vulnerable consumer by means of protection measures and information actions.

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EUROBOND ISSUE ON INTERNATIONAL CAPITAL MARKET: PRINCIPILES AND CHALLENGES

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ABSTRACT. Many start-up issuers have either graduated or are about to graduate from low-income country status and transfer to the category of middle-income countries and, as a result, there are reductions in available multilateral concessional funds. Therefore, the growing financing needs for many start-up issuers, together with reduced access to concessional financing, relatively underdeveloped domestic markets and a favorable interest rate environment have made international bonds an attractive financing alternative. The issuance of global bonds allows these issuers to diversify their investor base and exploit fewer credit constraints in a more liquid global bond market. Moreover, by issuing bonds in any of the currencies with the lowest cost of capital, start-up issuers are able to reduce the costs of borrowing by not assuming a significant impairment of the currency over the maturity of the bond.

KEYWORDS: *EUROBOND, debt, international financing, interest rate*

Introduction

What is a Eurobond?

The term "**Eurobond**" applies to all international trade finance through bond issues. The term Eurobond generally refers to a bond that is listed, traded and settled in the European Union (in addition to the EU's domestic government bonds). For example, it may be listed in Luxembourg and issued in accordance with United Kingdom law. However, the Eurobond does not necessarily indicate that the currency of this bond is the euro. In fact, bonds can be denominated in any currency. [3]

A **Eurobond** is a debt instrument denominated in a currency other than the currency of the country or market in which it is issued. Eurobonds are often grouped according to the currency in which they are denominated, such as Eurodollar or Euro-yen bonds. Due to the fact that Eurobonds are issued in a foreign currency, they are often called external bonds. Eurobonds are important because they help organizations raise capital while having the flexibility to issue them in another currency. [4]

In the Republic of Moldova, the provisions of Law no. 419 of 22.12.2006 on public sector debt, state guarantees and state on-lending, explain the notion of **securities issued on the foreign market** as an instrument of state debt issued on the foreign market in the form of negotiable financial security. [5]

One of the main reasons why start-up issuers have exploited international capital markets has been to collect resources, which are not available in local markets, to finance infrastructure projects.

Given the lack of funding in local markets in the amount needed to cover the costs of large infrastructure projects, many countries have had to turn to international markets. This was the case for most African broadcasters, such as Zambia and Senegal, but also for some Latin Americans, such as Paraguay and Bolivia. [2]

Some start-up issuers have issued international bonds to help finance the budget deficit, repay arrears or create a benchmark for the corporate sector. Some countries intended to use at least part of the proceeds for budgetary purposes or, as in the case of Honduras, to cover arrears. International bonds have also been issued as part of the debt restructuring process, such as Seychelles (2010) and Gabon (2007). Others, such as Nigeria, wanted to create benchmarks for the corporate sector. Bolivia, for example, has explicitly acknowledged in its interaction with market participants that it intends to use the new international bond to attract the attention of international investors in the country. [2]

Methods applied. The achievement of the objectives of this analysis was possible due to the selection of the theoretical and empirical methods of research: the analysis and the synthesis, the content analysis, the comparative study. A comparative analysis of the financial aspects and costs of issuing an Eurobond on international financial market by a list of countries such as: Armenia, Albania, Georgia, Macedonia, Montenegro, Tadjikistan, Ukraine, Romania and Moldova, was made based on the examination of the data provided by *Bloomberg*. Their cognitive potential allowed to research and identify the process of a first-time possible EUROBOND issuing on international financial market by the Rep. of Moldova and in comparison with other countries such as: Tadjikistan and Montenegro, to explain the main principles, challenges, positive and negative results in this regard.

Research results

Table no.1 Advantages / disadvantages of financing on the international capital market (Eurobond), maturity 5-15 years

Advantages	Disadvantages
Less dependence on internal funding sources	The discipline imposed by the international capital market may seem restrictive
Lack of conditionality	Currency risk, during the depreciation of the national currency, given the fact that the Eurobond is issued in a foreign currency
Signal of the "power of the country"	The risk of refinancing at maturity, given that Eurobond involves the repayment of the basic amount, usually in a single payment at the end of maturity
Reducing the risk of refinancing due to longer maturities	It involves long-term obligations. For the repayment of the first Eurobond there is a need to issue other international bonds
Large volume of financial resources in a single issue	Regular presentation of information to investors, monitoring of the international capital market
Execution of the show in a very fast time (2-3 months)	Additional fees related to the issue
Interest rate related to international issuance lower than interest rate related to domestic financing sources	The holding cost for Eurobonds issued in large volumes

Source: elaborated by the author [3]

The main benefit of issuing international bonds is to increase domestic savings. When a bond issue is undertaken in the context of a sustainable fiscal framework, it can significantly improve a country's available resources and therefore the sustainable prospects for growth and

prosperity. Other benefits of issuing international bonds are: (i) the additional incentive to increase macroeconomic discipline and advance structural reforms as a result of intense control of the domestic economy by participants in the international market; (ii) establishing the sovereign's presence in international capital markets, which could also allow local corporations to access international markets in the future; and (iii) the substantial expansion of the country's investor base.

However, the issuance of international bonds also involves many risks. The key challenge for all sovereign bond issuers, including start-up issuers, is to maintain sound macroeconomic policies, in particular fiscal sustainability. This is necessary to ensure sovereign creditworthiness, as the confidence of international investors in many low- and middle-income countries is often fragile and quickly reversible. Other risks include the sovereign's exposure to foreign exchange risk as a result of the issuance of the international bond in a foreign currency, possible refinancing needs - especially during periods of strict international financial liquidity - and negative shocks to trading conditions. [1]

Although this financing alternative has the potential to allow countries to finance infrastructure and other urgent needs earlier, these risks stem mainly from the fact that such an issue represents an increase in external government debt and a higher share of GDP for many of these issuers and also a significant proportion for debt that is concentrated in a single instrument. These risks include concerns about debt sustainability, excessive exposure to currency risk and increased vulnerabilities in the debt redemption profile, given the repayment of a significant amount at a given time.

Some of the vulnerabilities have already manifested themselves during the crisis. For example, Seychelles matured a \$230 million Eurobond in October 2008. Following a sharp decline in tourism revenues during the global financial crisis and years of excess government spending, the inability to repay the Eurobond at maturity, implicitly leading to debt restructuring and optimizing government spending.

Moreover, political instability in some countries poses an additional risk to debtors and creditors alike. [2]

Internally, most "start-up issuing" countries are to meet a number of preconditions considered necessary to attract investors in the first international issue before the issue. These preconditions have allowed most of them to obtain the best possible credit ratings, including:

- Creating a record of good economic performance in previous years, maintaining a positive medium-term outlook and demonstrating that the initial problems were part of their debt management framework and did not distort fiscal sustainability;
- Maintaining strong economic growth, keeping inflation under control and ensuring that the external current account deficit has been financed without difficulty;
- Adopt prudent fiscal policies and service existing public debt without any difficulty. In some countries, public debt has been reduced to sustainable levels as a result of substantial debt relief packages;
- Progress in data provision, transparency in the development of their macroeconomic policies and in the implementation of structural reforms; and
- Political situation to support and pursue appropriate economic policies. [1]

The country's macroeconomic bases, fiscal and external sustainability, financial depth and good institutions directly affect the performance of government bonds. Low inflation,

coupled with prudent monetary policy and robust economic growth are expected to boost investor confidence and lower interest rates. A better fiscal policy (higher fiscal balances and lower debt-to-GDP levels) is expected to lower issuance costs.

If we were to examine the Republic of Moldova from the perspective of issuing a Eurobond, we could refer to the Memorandum of Economic and Financial Policies approved in the first quarter of 2020 by the IMF, which certifies the following:

- Through the implementation of the reform program, supported by the IMF, the Republic of Moldova has managed to restore macro-financial stability, revive the pace of economic growth and improve governance in the financial sector. In this regard, decisive steps shall be taken to complete the reform agenda set out in this Memorandum for the remaining period of implementation of the current program. Despite the change of governments in 2019, the program continues to enjoy strong and comprehensive political support.
- Economic growth was better than expected.
- In 2019, the budget balance was below the limits set in the program and the reforms in the banking sector are fruitful. [8]

In the process of issuing a Eurobond, it is also necessary for the sovereign to examine and decide on the specific strategic considerations of an initial bond issue on the international capital market, including volume, maturity, choice of fixed interest rate or flexible and currency. In addition, managerial issues, including the choice of legal and financial advisers, underwriters and issuing capacities, were crucial in deciding on the first issue of an international bond on the international financial market. [1]

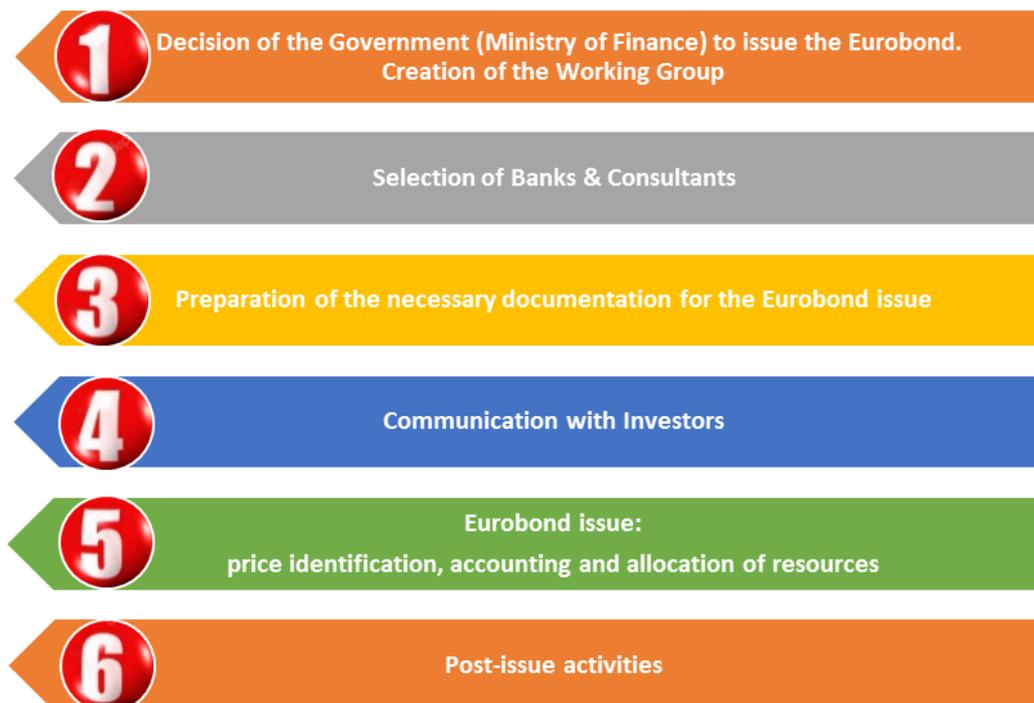


Figure 1 Stages of issuing a Eurobond on the international capital market

Source: elaborated by the author [3]

In order to successfully place debut bonds on international capital markets, sovereigns must pay due attention to the following considerations:

- **The volume of the debut bond.** The size should be determined when conducting the debt sustainability analysis (DSA) exercise for the country. Sovereigns should also not place larger volume bonds than required to cover liquidity shortfalls. Higher bond issues involve higher costs and higher foreign exchange and redemption risks.

- **Use of resources from the issue of debut bonds.** The purpose of the intended use of bond proceeds should be publicly announced, especially if the purpose of the bond issue is to finance infrastructure projects or to repurchase costly government debt. In general, investors tend to offer better conditions for such bond issues.

- **Maturity or repayment structure of the debut bond.** Maturity or maturity and repayment structure should be decided at the initial stage so that refinancing risks are kept to a minimum. Small countries and start-up issuers may also consider a bond amortization structure (multiple payments), rather than a bullet bond (single payment), to ensure a more refined debt repayment profile.

- **The currency of the bond issued.** In recent years, US dollar bond issues have been placed more easily, as US dollar fixed income markets are the deepest and most liquid.

- **Implications for the management of assets and liabilities** as a result of the issuance of the debut bond. An international bond issue should be valued in terms of its implications for the country's balance sheet assets and liabilities and should generally be in line with the country's asset and liability management objectives.

- **The jurisdiction and legal framework** that will govern the obligation to start. The issuer is to decide on the legal jurisdiction in which the bond obligation will be issued mainly on the basis of the investor's target base and currency.

- Sovereigns should pay particular attention to establishing **strong investor relations and creating demand** in the international capital market long before the issue. This may involve the appropriate introduction of the country to international investors through pre-transaction programs ("road-shows") and obtaining a credit rating, preferably from several rating agencies.

- **Selection of financial and legal advisers.** In designing and executing debut issues, sovereigns must hire financial and legal advisers from the earliest stages. Financial advisers help sovereigns obtain a credit rating and prepare economic and financial reports, while legal advisers help them with legal issues (e.g., the laws that will govern the bond, the type of bond (e.g., global bonds, or Eurobond) and the necessary documentation in this regard, reputation and experience should matter most for their selection.

- **Hiring a manager/expert (or managers).** Issuing managers should be selected independently of financial advisors and should primarily assist start-up sovereign issuers. In principle, senior managers should be hired after decisions have been made on the level of debt and the core issuance strategy. Lead managers should also be chosen competitively on the basis of the services they will provide to the issuer, for example, the marketing and distribution of start-up bonds and the commitment to provide post-issue market support. [1]

**Table no. 2 Estimated costs per category related to the issuance of a Eurobond
(eg volume 750.0 million US dollars, maturity 10 years)**

Eurobond	Amount (US dollars)
Issue price (6.15% yield)	748 612 500
<i>Fees and charges:</i>	
Leaders managers	1 125 000
Independent expert	150 000
Legal consultant	250 000
Eurobond rating assessment	750 000
Rating evaluation consultant	40 000
Placement on the international capital market	35 000
Total Commissions and expenses	2 350 000

Source: elaborated by the author [3]

In international capital markets, there are three key categories of participants in an international bond issue transaction (Eurobond): **issuers, intermediaries (banks, unions) and investors.** [3]

The structure of the bond refers to the characteristics and format of the bond documentation (eg, currency, maturity (the most popular maturity being 7-15 years), the type of interest rate (floating, fixed, indexed) and redemption (bullet or amortization)). In addition, the size of the issue is crucial. [3]

Table no.3 Yield, margin, coupon and issue price

Eurobond Maturity (10 years)	Quotes
US treasury bond 10 years	2,85%
Swap margin	10 p.p.
Swap yield (a)	2,95%
Margin for the country (b)	320 p.p.
Offer yield ($c\% = a + b/100$)	6,15%
Semi-annual coupon	6 1/8%
Issue price	99,815

Source: elaborated by the author [3]

Although the volume of initial bonds varies widely for start-up issuers, other features of debut bonds tend to be similar. Most sovereigns in middle-income countries have issued international bonds of at least US \$ 500 million, the minimum volume for a bond to be included in a bond index (eg JP Morgan EMBI Global). [1]

Access to international markets depends on perceived credit risk, often measured by a country's credit rating. An international rating of B- is generally considered the minimum for issuance on international capital markets. [3] Most of the bonds were bullet-type securities with a fixed coupon, in US dollars, with a maturity of between 5 and 10 years and a "sub-investment" country rating. While governments have more control over the structure of their domestic debt, the characteristics of instruments issued in the external market are largely defined by the practices established by the international financial centers. Debt issued on the external market tends to be medium or long term, with a fixed rate and expressed in foreign currencies (USD or EUR). [2]



Figure 2. Rating given by the international company “Moody`s”, evolution of Euribor6M, Libor6M quotes

Source: [bloomberg\[6\]](#), [www.homefinance.nl\[7\]](#)

According to the figure 2, it is concluded that the Republic of Moldova is in the same country risk category in which Tajikistan or Ukraine is found, and close to the country risk category in which Albania and Montenegro are found. Given that country risk is included in the costs of issuing government bonds on the foreign market through the "margin" of this instrument, it is possible to estimate the potential margin and interest rate (coupon) of a potential „Eurobond ” issued by the Republic of Moldova. It is assumed that for the Republic of Moldova, the margin and interest rate (coupon) related to a "Eurobond" would be approximately the same quotations related to the bond issued on the foreign market by the government of Tajikistan or Ukraine, or higher in the case of Albania or Montenegro. Respectively, obtaining a better country rating is imperative in this regard for assessing and reducing the costs of issuing and servicing a Eurobond issued by the Republic of Moldova on the foreign market.

Table no. 4 Number of active bonds (Eurobond)

Maturity	Albania	Armenia	Georgia	Macedonia	Moldova	Montenegro	Tadjikistan	Ukraine	Uzbekistan
Total	2	4	2	4	0	4	2	34	4
2040								2	
2039									
2038									
2037									
2036									
2035									
2034									
2033									
2032								2	
2031									
2030								2	
2029		2				2			2
2028								2	
2027							2	2	
2026								4	
2025	2	2		2		2		3	
2024								4	2
2023								3	
2022								2	
2021			2	2				3	
2020								5	

Source: [bloomberg \[6\]](#)

According to the table presented (no.6), we attest an active performance of Ukraine's current presence on the foreign financial market. Moldova is being the country with approx. the same country rating as Ukraine, close geographical and economic view. Respectively, for an assessment of the current situation, Ukraine is a good example for the Republic of Moldova to examine. At the same time, the quotations of Eurobond issued by Tajikistan, Albania and Montenegro, which are equally active on the international capital market, are also to be taken into account.

Table no.5 Characteristics of the last Eurobonds issued by other countries

	Year of issue	Maturity	Volume (mln)	Currency	Price	Coupon rate (% annual)	Moody's
Albania	2018	2025	500	EUR	99.695	3.50	B1
Armenia	2019	2029	500	USD	97.976	3.95	Ba3
Georgia	2011	2021	500	USD	98.233	6.88	Ba2
Macedonia	2018	2025	500	EUR	98.442	2.75	Ba3
Montenegro	2019	2029	500	EUR	97.846	2.55	B1
Romania	2020	2050	1600	EUR	99.702	3.38	Baa3
Tadjikistan	2017	2027	500	USD	100	7.13	B3
Ukraine	2017	2032	3000	USD	100	7.38	B2
Uzbekistan	2019	2024	500	USD	100	4.75	Ba3

Source: [bloomberg\[6\]](#)

Considering the group of countries assessed above as being the closest to the Republic of Moldova, the following notes may be observed. In 2017, Tajikistan issued a Eurobond in the amount of 500.0 million US dollars, with a maturity of 10 years, at a price of 100, with a fixed coupon (annual interest rate) of 7.13%. Ukraine issued a Eurobond in the same year in the amount of 3 000.0 million US dollars, with a maturity of 15 years, at a price of 100, with a fixed coupon (annual interest rate) of 7.38%. In 2018, Albania issued a Eurobond in the amount of 500.0 million euros, with a maturity of 7 years, at a price of 99.7, with a fixed coupon (annual interest rate) of 3.5%. Likewise, Montenegro, in 2019, issued a Eurobond in the amount of EUR 500.0 million, with a maturity of 10 years, at a price of 97.8, with a fixed coupon (annual interest rate) of 2.55%. In this sense, it is pointed out that the bonds issued by Albania and Montenegro are at a lower coupon (lower annual interest rate) compared to those issued by Tajikistan and Ukraine, have different maturities, a better country rating, a lower issue price, and are issued in euro, EURIBOR quotations on the international market being negative (see figure no.2).

Table no.6 Eurobond issued by Tajikistan and Montenegro, maturity - 10 years

Scenario	Volume (mln)	Currency	Price	Coupon rate (% annual)	Type	Debt service expenditure, (annual, mln)*	Debt service expenditure, (annual, mln, MDL)**
Montenegro	500	EUR	97.846	2.55%	fixed	11.6	222.7
Tadjikistan	500	USD	100	7.13%	fixed	35.7	625.6
				Difference			-402.9
Montenegro	500	EUR	100	2.80%	fixed	12.7	244.6
				Difference			-381.1

* For Montenegro, an USD equivalent was used

** NBM exchange rate at 11.02.2020

Source: *elaborated by the author*

According to the table no.6, the attention is drawn to the fact that Tajikistan issued the Eurobond at a price of 100.0 (par value), while Montenegro - at a price of 97,846 (at a discount). Therefore, using the formula for calculating the price of a bond, we may estimate that if Montenegro had issued the same Eurobond at the price of 100.0 (par value), then the coupon (fixed interest rate) would have been higher and would have constituted approx. 2.80% per annum. At the same time, it is assumed that the fixed coupon (annual interest rate) would have been higher if Montenegro had been assessed with the same country rating as Tajikistan, which is included in the risk margin (component of the interest rate). In both cases, we could find that the bonds issued on the international financial market in US dollar are currently more expensive in terms of their service than those issued in euro, the cause being the negative quotations of EURIBOR in that period.

Taking into account the aspects mentioned above (volume, maturity, country rating, issue price, macroeconomic situation) it is estimated that if the Republic of Moldova issued a Eurobond on the international market in the amount of 500.0 million in euro, with a maturity of 10 years, at a price close to par value, the fixed coupon (fixed annual interest rate) (debt service expenses) would be in the current financial conditions in the range of 4.0-4.5% annually.

Conclusions

- In the light of recent experience, countries considering an international bond issue should carefully consider the associated benefits and risks and prepare well before attempting to raise funds in international markets.

- Governments should plan their actions over a period of time that extends beyond the market access stage and consider bond issuance in a broader, medium-term debt sustainability framework.

- In addition, if the start-up issuer wants to establish its presence on international markets or create a sovereign benchmark, it should opt for the issuance of a bond with features that ensure a large investor base, liquidity in the secondary market and, if possibly including at least one of the major bond indices used by investors and asset managers. [1]

- International issuance needs to be placed in a broader debt management/DSA context. Countries should avoid exploiting international markets on the basis of opportunistic views.

- Countries need to start preparing in advance for the redemption of these instruments. Refinancing risks occur at maturity, when the first bonds begin to mature and could end up in an environment with much higher interest rates.

- Finally, countries must pay attention to the best principles in the operational stages of issuing debut bonds. These operational steps (managers, experts, consultants, existing procedures) are important to avoid excessive costs. [2]

Regarding the Republic of Moldova, the following is concluded:

- In the current conditions, the Republic of Moldova has managed to restore macro-financial stability, revive the pace of economic growth and improve governance in the financial sector.

- the bonds issued on the foreign financial market in US dollar currency are currently more expensive in terms of their service than those issued in euro, due to the negative quotations of EURIBOR in that period.

- if the Republic of Moldova initiated the issuance of a Eurobond on the international capital market in a volume of approx. 500.0 million euros, maturity - 10 years, at an issue

price close to par value, the fixed coupon (annual interest rate) would be estimated in the quotation range 4.0-4.5% annually.

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MODELS OF CORPORATE FINANCIAL MANAGEMENT IN THE CONTEXT OF GLOBALIZATION OF FINANCIAL MARKETS

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ABSTRACT. The article examines topical issues of using models of corporate financial management. The purpose of the article is to systematize models of corporate financial management and substantiate the prospects for their development in the context of globalization of financial markets. Used modern methods of comparative analysis, systematic and integrated approach to scientific research. The theoretical and methodological aspects of improving corporate financial management taking into account the processes of globalization are considered.

KEYWORDS: *corporation, management models, corporate financial management, financial market, globalization.*

Introduction

Strengthening of globalization processes, integration of domestic corporations into international processes give rise to necessity to modernize scientific approaches to form innovative models of corporate financial management. Certainly, the key attribute of the current international economic relations is the globalization of financial markets. The processes of international integration have led to financial globalization and financial instability. Fund market, the banking system, foreign trade relations significantly affect the formation of an effective model of corporate financial management. The efficiency of corporate financial management is hard to reach without the deep understanding of the national institutional terms. Therefore, the research of international experience in the formation of national models of corporate financial management is the actual task. The extrapolation or copying of existing models are not important, but rather the determination of the fundamental principles is important in accordance with the particular qualities of the business environment and the level of social and economic development of the country, in which the model of corporate financial management is being formed. The solution of these problems will help to increase the efficiency of the country's corporate sector, improve the investment climate and develop the institution of corporate social responsibility.

A short analysis of the main bibliographical references in the field of research.

The problems of globalization of financial markets are considered in the works of many scientists. Features of the formation and development of the corporate sector of the economy are analyzed in their works by G. M. Andrusenko, V. I. Antonenko, A. Yu. Berezhna, O. S. Bondarenko, L. Sh. Mamatova., A. Yu. Leos, O. M. Lozovsky, O. M. Polinkevich and other researchers.

Scientists have identified groups of risks of financial globalization, which associated with the irrationality of economic policy at the national level, and the uncontrolled development of financial markets in the context of globalization. Economists point out the need to reform the supranational regulation of the world financial market because the international financial institutions do not adequately meet the challenges that they face in

modern conditions. The role of international financial institutions has declined amid the growing importance of global capital, as evidenced by the growth rates of capital imports and international financial transactions.

At the same time, as scientists note, it is obvious that the evolution of corporate financial management models is determined by the national characteristics of a particular country, namely, the socioeconomic prerequisites for implementation, the level of institutional and legal support for the functioning of the business environment, the availability of financial resources, technologies and human factor.

Thus, the problems of financial globalization are considered mainly at the macro level, and the issue of rationalizing economic policy for integration into the international financial market at the national level remains insufficiently studied. The basics for the functioning of the financial sector of a particular country in the context of countering the contradictions of the development of the world financial market require a theoretical development.

A description of the research methods used. In the article were used the following modern general scientific and special research methods. There are the method of structural and logical analysis on the formation of the logical structure of the research, methods of comparative analysis in the research of the models' evolution of corporate financial management. In addition, graphical method for drawing figures and an abstract-logical method and generalizations were used in formulating conclusions and recommendations for improving the corporate financial management system in the context of integration into international space and globalization of financial markets.

Findings and discussions. The structure of financial management of the corporation of each individual country has specific properties, at the same time, there are many common features of corporate financial management, which allows specialists in the field of world corporate processes to identify the main models of corporate financial management.

However, the models are not mutually exclusive their components mutually penetrate in different countries, and may indicate the absence of obvious advantages or disadvantages of one of the models. Thus, a comparison of corporate relations in different countries allows us to conclude that the system of corporate financial management in each state combines unique elements from different models.

Corporate financial management should be based on two main principles [1, p. 123]. The first postulate is to find ways to reduce the general corporate risk. The general risk of a corporation implies a whole set of risks for the company's assets, therefore, it is supposed to combine all these risks into one portfolio. To implement this postulate, it is necessary to study all the necessary information about the position of the external economic environment, about financial markets, external and internal factors, corporate risks, what causes them, analyze the dynamics of risky operations, identify patterns, draw up summary reports and statements on the work done. It is necessary to study the securities market, to be aware of events that directly affect the change in the value of the corporation's securities.

The second postulate implies the need to consider the capital of a corporation in the form of its two main elements: own and borrowed capital. The essence of the postulate is to constantly analyze the position of the capital structure, identify ways and reserves to reduce borrowed capital and cover it with own funds.

Thus, the functioning of the corporate financial management system must be based on the principles, tasks and methods, which follow from the structure and current position of the corporation (figure 1).

PRINCIPLES	TASKS	METHODS
<ul style="list-style-type: none"> •priority of the corporation's strategic goals over financial goals; •integrity and unity of the corporate governance system; •the consistency of the economic interests of all participants in the group in accordance with the hierarchy of goals; •priority of economic interests of profitable business entities over interests of unprofitable business entities. 	<ul style="list-style-type: none"> •formation of financial resources adequate to the development needs of company; •distribution of financial resources by areas (main, financial, investment) activities of the company; •optimization of the structure of sources (own, borrowed) financial resources; •minimization of all types of expenses (tax deductions, optimization of production costs, etc.); •control over the use of funds; •forecasting the financial condition to anticipate the possibility of insolvency or bankruptcy of organizations. 	<ul style="list-style-type: none"> •financial planning, forecasting the possibility of a financial deficit at a certain point in time or period; •reserving funds for a possible deficit (reallocation of funds, attracting external sources of financing); •maintaining transparent financial accounting and reporting status; •conducting inspections by representatives of the owners of financial accounting and reporting; •constant control over all financial flows of the company (control over cash flow).

Figure 1. Principles, tasks and methods of the corporate financial management system

Source: developed by the author based on [10]

There is a wide variety of different financial models in corporate financial management. The corporate financial management model is an analogue of a certain action or process that occurs within the framework of financial management and makes it is possible to understand the specific properties of the modeled process for the given research objectives [10, p. 162]. Financial management models allow to describe a variety of processes that occur within the framework of the enterprise's activity (for example, management decisions on financing, the policy of managing the assets and liabilities of the enterprise, directions and goals of investment, long-term strategies and tactics, planning and forecasting financial results, etc.).

The essential aspect of the corporate financial management system evolution has the nature, causes of occurrence, development features, implementation mechanisms and the final results to which the processes of modern transformations lead. The functioning of the corporate financial management system is inherently a complex phenomenon, therefore, in the process of its development is an element of certain unpredictability. One of the main reasons for the emergence of evolutionary processes in the corporate financial management is that any system and its components are capable of self-development, therefore, they naturally strive to maintain their balance. At the same time, with the growth of internal tension, the evolution of the system and its individual elements, controlled from outside or from within, is possible.

The main models of financial management are descriptive, predicate and normative [7, p. 90]. Descriptive models are designed to describe the ongoing processes that arise when assessing the property of an enterprise or its financial condition. Such processes at the

enterprise include: all analytical calculations of financial nature: analysis (horizontal and vertical) of the balance sheet, its main indicators, analysis of cash flows, etc.; calculation of final indicators and their dynamics according to financial and accounting statements, etc. All calculations in such model are based on the company's financial statements. The indicators can be evaluated over several years to identify certain positive or negative trends in the company's financial development. Also, this model allows to describe the financial condition of the enterprise today and give a long-term forecast for the future. Calculations and forecasting at the enterprise should be carried out by the specialists who are able to competently apply descriptive models, be able to use them.

The predicate models are designed to predict the development of the company's financial condition using analytical calculations and coefficients, relying not only on the data of accounting and financial statements, but also on global market trends. Unlike descriptive models, predicate models are based on calculations rather than describing company processes. So, in predicate models are widely used:

- calculation of analytical financial tables that are forward-looking;
- calculation of the break-even point and the level of the minimum possible sales;
- calculation of the company's development trends in various areas;
- situational and factorial analyzes, etc.

Regulatory models allow the management of the company to see the actual results according to the data of financial analysis and compare these results with the planned ones. That is, this model gives an idea of the actual implementation of the planned targets, and in a detailed context. Based on these results, it is possible in the future set standards for certain areas of activity, which are real for implementation.

Thus, corporate financial management models allow a descriptive, analytical and regulatory way to determine at what stage of development a firm is, what awaits it in the financial future, and what the company is actually capable of in terms of production.

Depending on the level of centralization of management, there are three main management models used in corporations:

- centralized financial management model;
- combined financial management model;
- decentralized financial management model.

In the model of centralized corporate financial management, the powers of financial services of organizations within a company are transferred, according to an agreement between participants and management, to a separate structure that centrally manages all the company's finances in the absence of financial services in each organization, except for accounting departments [3, p. 58]. The central finance service develops a financial management strategy, maintains accounting and management records of all organizations that make up the company; authorizes and controls the payments of each of them; reduces the budgets of organizations; forms the consolidated budget of the company; legal registration of operations. Centralized financial management is carried out through the head of the organization and allows you to fully control the financial activities of company.

The model of combined corporate financial management assumes partial decentralization of management functions by distributing them between management bodies or by establishing procedures, regulations, and standards for their implementation by group members [8, p. 696]. Direct financial management within the framework of its powers is carried out by the financial service created in the organization. Central financial services

provide direction through the direct manager of the organization. This management model is appropriate for use in diversified companies organized on a divisional basis. The central financial service is usually vested with the following powers in relation to the organizations included in the group:

- development of a financial management strategy in the company;
- determination of performance indicators of the managed structures;
- attraction and distribution of financial resources between organizations;
- development of the composition, content and frequency of consolidated and current financial statements submitted by organizations to the central service;
- control over the reliability of financial statements by the method of audits;
- analysis of the financial condition of each organization;
- legal registration of financial transactions, etc.

At the divisional level, the direct head of the service sets financial management tasks for organizations within the framework of the financial management strategy developed by the central financial service this organization, which is part of the group of companies, develops and organizes methods for their implementation in accordance with the goals of the group. As well as operational control of the financial service, determines the structure and size of the financial service, depending on the nature of the organization's activities and the volume of operations performed.

The financial service of each organization independently carries out the current financial planning of its activities, develops and maintains its own system of internal and external financial accounting, conducts current payments, and implements control of current financial activities.

A combined financial management model is preferable in companies where the activities of the structures that make up it are geographically fragmented or diversified.

The decentralized corporate financial management model assumes a high degree of decentralization of governance. The central financial authority determines the financial management strategy, provides the organization with the necessary financial resources upon request, but does not interfere with the operational activities of the organizations [9, p. 160]. In accordance with the proposed strategy, the group members, within the framework of certain powers (agreement), independently develop financial management plans, manage cash flows, financial investments, carry out settlements and payments, maintain financial and management accounting, ensure compliance with the uniformity of information methodology, reporting, a sufficient level control.

Thus, the models of corporate financial management have similar features and differences, the importance of highlighting which is necessary in the conditions of the formation of modern model. On the other hand, any model of corporate governance has a certain conservatism, that is, the formation of its elements is directly conditioned by historical peculiarities. In addition, none of the models we have considered is free from disadvantages and is not universal (table 1). Currently, there is a pronounced trend towards convergence and interpenetration of various corporate financial management systems.

In modern, rapidly changing economic conditions, a decentralized structure of corporate financial management is more preferable, because it has a higher reaction rate to ongoing changes and flexibility of financial resource management, lower labor intensity and planning duration.

Table 1. Advantages and disadvantages of corporate financial management models

Corporate financial management model	Advantages	Disadvantages
Centralized financial management model	<ul style="list-style-type: none"> ▪ the emergence of the effect of operational synergy; ▪ reduction in management costs, including for the maintenance of financial services in each organization, as a result of combining dissimilar businesses; ▪ the effect of the combination and distribution of complementary resources; ▪ saving costs for research and development (when combining production and research structures); ▪ improving the quality of control due to the unification of management and accounting functions; ▪ reduction of unit costs for the services of lawyers, auditors, consultants, advertising agents, etc. 	<ul style="list-style-type: none"> ▪ limited adaptation of management; ▪ slow response to environmental changes.
Combined financial management model	<ul style="list-style-type: none"> ▪ transfer of responsibility for the achievement of indicators to each level of an economic entity within the company; ▪ increasing the efficiency of management by decentralizing the adoption of operational management decisions; ▪ the effect of financial synergy is manifested; ▪ reducing the cost of attracting debt capital; ▪ reducing the risk of bankruptcy as a result of business diversification; ▪ growth in return on capital; ▪ the possibility of using elements of hidden financing; ▪ tax cuts, i.e. the ability to reduce tax payments on your free cash flows. 	<ul style="list-style-type: none"> ▪ possible deviations of the activities of business entities from the strategic goals of the company; ▪ decrease in the efficiency of resource use due to a decentralized cash management policy; ▪ high costs of maintaining the management staff due to duplication of functions.
Decentralized financial management model	<ul style="list-style-type: none"> ▪ acceleration of financial processes by increasing the efficiency of management; ▪ more efficient use of financial resources to achieve the set goals; ▪ creation of a clear system of functional links between departments, united by common goals and interests. 	<ul style="list-style-type: none"> ▪ the composition of financial services of organizations may vary depending on the market situation and the functions performed.

Source: developed by the author based on [9]

The so-called family capitalism and family business groups have spread to almost every country in the world. This corporate governance system is common in Asia and Latin America, Canada, and European countries such as Sweden, Italy and France. In this model, management is carried out by members of the same family. Capital is concentrated and distributed through family channels, and control of the business is wholly owned by the

family. Examples of such business groups are the Wallenberg dynasty in Sweden, the Bronfman dynasty in Canada, the Oppenheimer family group in South Africa and the Lee Kai Shi family group in Tavana, the Agnelli business group in Italy.

The optimal model is the national institutional three-tier model of corporate financial management, which including the macro-, meso- and micro-levels with the corresponding regulatory mechanisms and factors of influence inherent in each level. Therefore, a comprehensive approach should be formed to the understanding of the term "corporate financial management", which is applied not only to the activities of business entities, but also at the level of a particular region and state.

Conclusions

In world practice, corporate financial management systems were formed under the direct influence of the securities market. An important aspect of the growth and development of companies is access to capital. At the same time, the shareholders, when becoming the owners of the company, act as the main suppliers of capital [2, p. 20]. This is the main factor in the formation of the corporate financial management system: in exchange for the risk that associated with the company's investment, shareholders receive certain rights.

Therefore, in our opinion, the evolution of the corporate financial management should be understood as transformation of forms and methods of corporate management and as reorientation of the functioning of companies and society with the aim of their transition to the base of universal values and the development of social capital.

The necessary conditions for the development of corporate financial management should be creating transparent capital markets that offered significant incentives to entrepreneurs and would attract investments at acceptable costs; protection of property rights and interests of all shareholders, as well as interested parties [4, p. 104].

This will allow more efficient allocation of resources, make decisions in favor of companies and more effectively use their knowledge and skills for managers.

An effective corporate financial management system contributes to the development of public administration based on the rule of law, effective investment policy and the development of market infrastructure.

In addition, an important factor in improving the corporate financial management system, in our opinion, is the very level of corporate culture in a company. It is not without reason that some experts argue that corporate innovation potential is to a decisive extent determined by the human factor, which is closely related to corporate culture [6, p. 123].

At the same time, an effective corporate governance system presupposes: compliance with internal and external principles of corporate governance, a balanced system of corporate risk management and corporate control, as well as compliance with the requirements of corporate social responsibility.

In conclusion, we note that each model of corporate governance is based on the cultural, historical and technological characteristics of the country in which they originated. Their formation was and is influenced by specific economic, political and social conditions. No corporate governance model is perfect or even better. Each of them is effective in its own way, and the corporate governance structure specific to one country is difficult to transfer to another country. At the same time, it is difficult to ignore the existence of a request from investors, regulators, society to search and disseminate not even a model, but the best

corporate governance practices, on which the well-being of stakeholders and the efficiency of the economy as a whole depend.

Recommendations

The development of socially responsible corporate management is associated with such factors as the need for companies to enter the international financial markets, the requirements of stock markets and the introduction of new stock indices based on sustainable development criteria, an increase in the business reputation of companies, the development of human capital and labor productivity, and the end – the progressive development of companies in the long term, taking into account the growth in value and market capitalization.

Thus, corporate financial management is a system of relationships, governing rules and procedures for making managerial decisions regarding the activities of an enterprise and the implementation of control procedures, as well as the distribution of rights and responsibilities between divisions in accordance with the enterprise [5, p. 51]. Its effectiveness lies in increasing the level of competitiveness and profitability of the enterprise by ensuring equilibrium of influence and balance of participants in corporate relations, financial transparency and the implementation of rules of effective management and proper financial control.

As a result of the measures taken, the supporters of different approaches to the organization of corporate governance should agree that, regardless of the corporate governance model used, it should contain such elements as:

- transparent ownership structure and company organization;
- ensuring awareness of all shareholders and their participation in the management of the company;
- effective protection of the rights of shareholders who do not own a controlling stake;
- providing high-quality information about the company's activities.

The main indicators of the efficiency of corporate financial management are indicators reflecting the degree of compliance in the company with the principles of corporate governance, characterizing the results of the company's financial and economic activities and reflecting the risks of corporate financial management. Today, the improvement and development of corporate financial management will allow enterprises to coordinate problems related to the distribution of profits, personnel management, and can become a powerful mechanism for influencing the economic development of the country.

Without an effective corporate financial management system, it is impossible to ensure the further development of the securities and capital markets, and to increase the efficiency of companies. Also, the problem of improving corporate financial management as a system of relations between shareholders, the state, management bodies, other stakeholders, the public is one of the most relevant in world economic theory and practice. A high-quality corporate financial management system acts as a condition for the efficient operation of companies, opens access to world capital markets, and also from the point of view of business ethics, consolidates the social obligations of companies to society, it allows the formation of social corporate responsibility of domestic companies.

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CONCEPTUAL AND PRACTICAL ASPECTS OF HUMAN CAPITAL FORMATION IN THE NEW REALITY

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ABSTRACT. The human capital plays a key role in sustainable economic growth in modern society. In the article, the author presents a structural analysis of average disposable income and expenditure per capita, which influence the state and development of the main subsystems of the Republic of Moldova in the context of the formation of human capital. As a result of the analysis, the author notes the importance of synchronization and correlation of subsystems (education, labor market, health) in the formation of human capital, which have an impact on economic and social development.

KEYWORDS: *human capital, education, health care, national wealth.*

1. Introduction

The relevance of the presented topics is due to the fact that in the national conditions of economic globalization and the implementation of the processes of European integration, the emergence and development of new system-forming trends is becoming more and more distinct. It is no longer possible to ensure high quality and stable economic growth only by increasing the traditional factors of production. In inevitable development and the new economy, aimed at high technology products, information technology and financial services, the human factor plays the key role in the prosperity of the state.

The purpose of the article is to consider the main factors of the formation of human capital in the new reality of the Republic of Moldova.

The main tasks of the article are:

- analyze the factors of human capital formation;
- to carry out a structural analysis of human capital at the macro level;
- to carry out a correlation analysis of subsystems of factors that play a decisive role in the formation of human capital.

In the innovative process, an exceptional role play, the creative abilities of a person, his intellect, ingenuity, and the ability to find unconventional solutions to complex problems. At the same time, the solution of economical, scientific, artistic, technical, and social problems need creative interaction of innovators. It means that, the human abilities are the main capital of any enterprises.

The founders of the concept of human capital can be considered representatives of the "Chicago school" - T. Schultz and G. Becker. In their scientific work the first time the definition of "human capital" was introduced, focusing on investments of human capital and evaluating their effectiveness.

In writing the article, were used the scientific works of researchers in the field of management, economics and sociology, which paid special attention to the importance of human capital.

Among the scientists who have contributed to the study of human capital are the following: D. Minzer, C. Marx, U. Petit, I. Fisher, G. Minzberg, P. Drucker, M. Amstrong, I.

Ansoff, S. Bowles, M. Porter, L. Thurow, D. Norton, R. Caplan, R. Solow, S. Cuznets, O. Nicolescu, A. Kibanov, V. Gerchicov, R. Fathutdinov, A. Vihanskii etc.

In the Republic of Moldova, practical and methodological aspects were studied by: G. Belostechnik, S. Kirca, A. Birca, A. Kotelnik, A. Onofrey, L. Bilash, L. Shavga etc.

2. Materials and methods

The formation of human capital at the current stage in the Republic of Moldova has been studied using various research methods, including: complex, analytical, survey and comparative methods.

The official statistics were the basis for the analysis of the socio-economic situation in the world and the Republic of Moldova.

Methods of analysis and synthesis were also used, mainly in defining basic concepts, as well as in analyzing the main indicators.

Common methods of research allowed to analyze the current situation of sub factors that have a leading role in the formation of human capital.

3. Results and discussions

The human capital of an organization is defined as the total psychophysiological, intellectual, physical, moral, social, moral and other abilities of all employees to earn income to organization.

A person, being a subject of socio-economic relations, simultaneously accumulates his intellectual capital and generates (gives up) his creative energy through the performance of creative actions. Hence the consequence: being in a particular social environment, he is able to increase the social level of his own creative capabilities, which then, through the manifestation (generation) of creative energy, increase his labor productivity in the material (production) sphere of activity (Gorelov, 2010, p. 155) [0].

Analysis of the content and conditions for the capitalization of human capital allows A.N. Dobrynin and S.A. Dyatlov to develop a general definition of human capital as an economic category of a modern information and innovation society. “ Human capital is a certain stock of health, knowledge, skills, abilities, motivations which are formed as a result of investments and accumulated by a person, and which are used in the labor process, contributing to the growth of its productivity and earnings” (Smirnov, Soshnikov, Romanchin, Skoblyakova, 2005, p. 99) [0].

Today, the main paradigm of the global economy is formed, assigning a central role to a person, his ability to be a source and generator of innovations and capital.

It is necessary to understand how each individual employee forms his own human capital, and the individual characteristics and employees are summed up and form the potential of organization as a whole.

Human capital, as part of the national wealth, is a three-level subsystem with form factor and the development of the new economy (Figure 1).

Quality of human capital is a major factor in the innovative and socio - economic development of the state.

State measures aimed at the formation of human capital that carried out through the implementation of social policy. Social policy that determines investments in education, health care, social protection, employment and employment, as well as other measures necessary for the development of human capital.

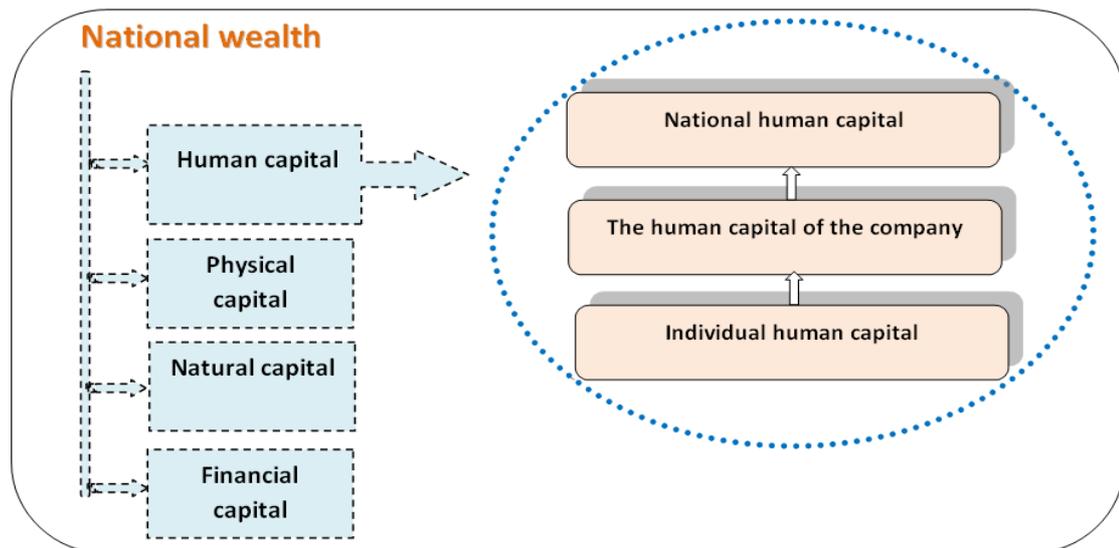


Figure 1. Components of national wealth

Source: Elaborated by author

In modern conditions of Moldova, we can see the following main negative points, which are affecting the formation and use of human capital as well:

- demographic situation in the state;
- problems in the system of motivational factors aimed at the development of human capital;
- weak correlations between the education system and the labor market;
- weak capitalization of human potential.

Existing demographic dynamics of the country's population is one of the most acute problems: in the past few years, starting with the '90s, the population steadily declining. In 2019 the population was 3,542.7 thousand people.

The Basic reason of demographic crisis is the migration of the population, mainly is economic active part (the average number of travel outside the Republic of Moldova in search of work in 2018 amounted to 352.7 thousand. pers.) And aging of population (the rate of aging population in 2019 year was 17.7 points).

The results of studies on the causes of population migration, socio - economic aspects are noted. Of those surveyed 41 people and living on the territory of Gagauzia, 28 people (68.3 %) noted as the main reason to travel outside the republic - low wages.

The Republic of Moldova is the country with the lowest living standard of living among European countries, which contributes to the search for a new job with a higher wage. For most working people, wages are the main source of existence.

In 2019, the disposable income of the population amounted to 2,880.6 lei per person per month, an increase of 523.5 lei or 22.2% compared to the income of 2018.

According to the National Bureau of Statistics, wages, social benefits and remittances from abroad are the main sources of income for the average citizen of Moldova, accounting for 81.3% of the income received (Figure 2).

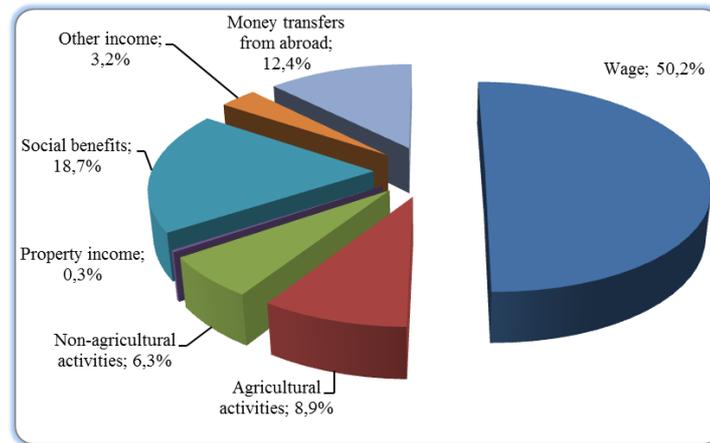


Figure 2. The structure of the average monthly disposable income of the population of Moldova per capita in 2019

Source: Elaborated by author based on National Bureau of Statistics data [0]

The average wage that was received in the Republic of Moldova does not fully meet the needs of life. In the analyzed period, 2013-2019 years, the average monthly wage per employee in the Republic of Moldova on the economy had a steady growth trend. In 2019, the average monthly wage amounted to 7 356.1 lei, which is 3 591.0 lei or 95.4% more than in 2013. Converting wages into foreign currency at the exchange rate at the end of the reporting periods, the wages amounted to 427.7 US dollars, which is 48.1% more than in 2013. A more modest growth, almost 2 times less, is evident in the wages of one employee when converted into US dollars.

The average amount of monthly consumption expenditures per capita in 2019 amounted to 2 786.5 lei, which is 397.4 lei or 16.6% more than in 2018 (Figure 3).

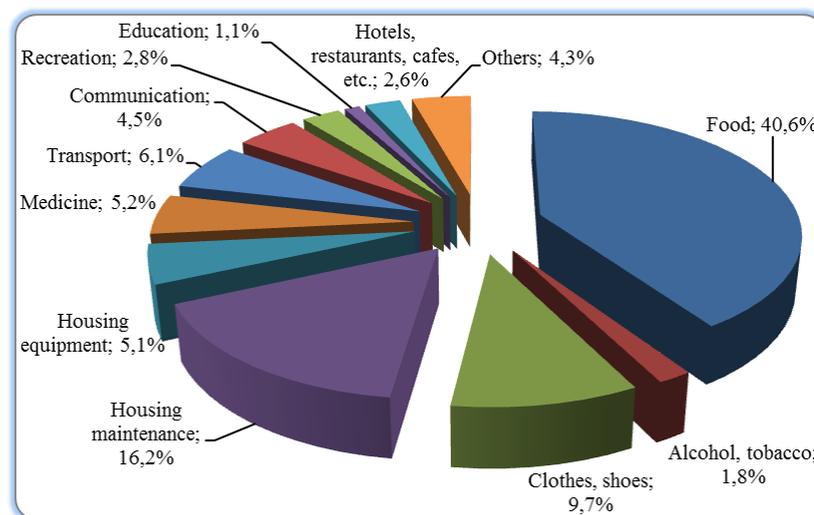


Figure 3. The structure of average monthly consumption expenditures of the population of Moldova per capita in 2019

Source: Elaborated by author based on National Bureau of Statistics of the Republic of Moldova data, (visited on 06.14.2020) [0]

In the structure of expenditures, the largest share is made up of consumer expenditures on food consumption - 40.6% of total expenditures.

Also a major burden on the consumption expenditures is the cost associated with the maintenance of meters of housing, which in 2019 accounted for 16.2% of total expenditure (451.4 lei per person).

Other type of expenditures account for less than 10.0% of total consumption expenditures. The insignificant expenditure on health care (medicine) - 5.2% and on education - 1.1% are of total consumer spending.

One of the positive demographics of Moldova is the level of education of the population. Analyzing the structure of the working population and educational level, is noted a great potential of human resources (table 1). The presence of education (higher, secondary specialized and secondary) is at the level of 65.2% of the total employed population in the Republic of Moldova in 2019.

**Table 1. The structure of the employed population by age group and level of education
2019 year**

Education	Employed population	Age group, years					
		15-24	25-34	35-44	45-54	55-64	65+
Total ,%	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Higher,%	27.9	15.1	39.2	32.8	20.1	20.7	23.7
Secondary education ,%	14.6	15.5	10.3	9.8	18.0	21.2	22.9
Secondary education ,%	22.7	21.2	18.5	19.7	29.3	26.0	15.8
Lyceum, general education ,%	17.7	22.8	12.9	16.9	19.3	22.4	14.7
Gymnasium ,%	16.7	25.1	18.6	20.6	13.2	9.5	20.8
Primary or no education ,%	0.4	0.4	0.6	0.3	0.1	0.3	2.2

Source: compiled by author based on National Bureau of Statistics data [0]

The largest percentage of people with higher education (39.2 %) is the age group within the range of 25-34 years, the category that is at the very beginning of labor activity.

The demographic decline has predetermined a negative trend in the number of pupils and students at all levels of education. The dynamic of the number of pupils / students in educational institutions of Moldova in the 2010/2011 - 2018/2019 academic years is shown in Figure 4.

In the 2018/2019 academic year, the number of pupils totaled and 192 017 people, which is 29.6% or 80 568 students less than the 2010/2011 school year. This tendency is directly projected on further levels of education.

A similar decline is observed in secondary vocational education, the indicator of which decreased by 28.5% from the indicator to the 2010/2011 academic years (- 6,113 students).

The greatest decline in the analyzed period is observed at the level of higher education. The average annual decrease in the number of students at the higher education level was 4.9%. Thus, for 9 years, analyzed the number of students was reduced and by 43.8% compared to the 2010/2011 academic year, amounting to 2018/2019 academic year is the 60th 608 students enrolled in all institutions of higher education in the country.

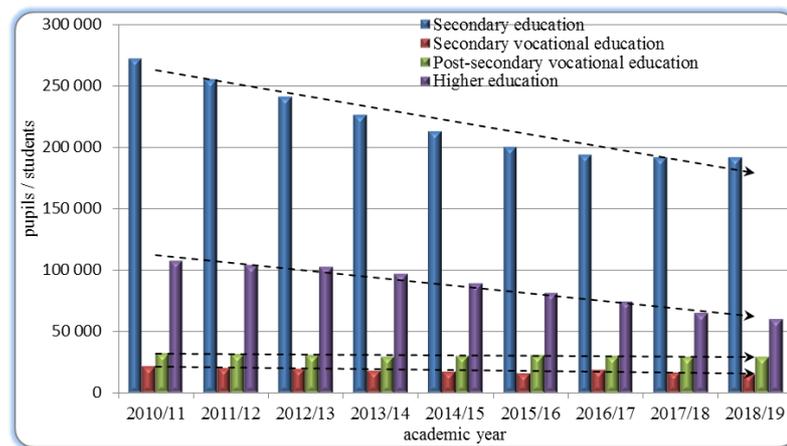


Figure 4. Dynamics of the number of pupils / students in educational institutions of Moldova in 2010/2011 - 2018/2019 academic years

Source: Elaborated by author based on National Bureau of Statistics data [0]

According to steady decline is also observed in the dynamic of higher education graduates. In 2019, the number of graduates from higher education institutions was 16,266, which is 18.4% less than the number of graduates in 2017.

Analyzing the structure and dynamic the number of graduates in higher educational institutions in the context of specialties in 2011 - 2019, it can be noted that it has not undergone radical changes.

The main change was noted in the specialty "Economics and Management". This specialty has a negative trend. In 2019 the number of graduates in this specialty was 3 874 people, which is 2.2 times fewer graduates in 2011. However, due to a decrease in the total number, the share of the analyzed specialty was 23.8% of the total number of graduates in 2019, decreasing by 6.2 percentage points.

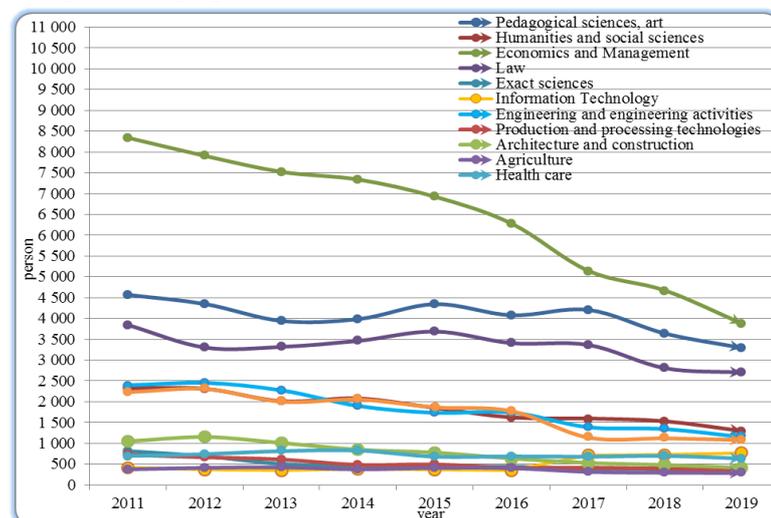


Figure 5. Dynamics of specialties graduated by higher educational institutions of Moldova in 2011 - 2019

Source: Elaborated by author based on National Bureau of Statistics data [0]

In conditions of rapid changes in the economy, demand in the labor market, significant changes in the structure of specialties graduated from higher educational institutions, are not observed (Figure 5).

The main specialties for the entire analyzed period were and remain "Economics and Management", "Pedagogical Sciences and Art" and "Law". Together, their share is 64.0% of the total number of graduates in 2019 (Figure 6).

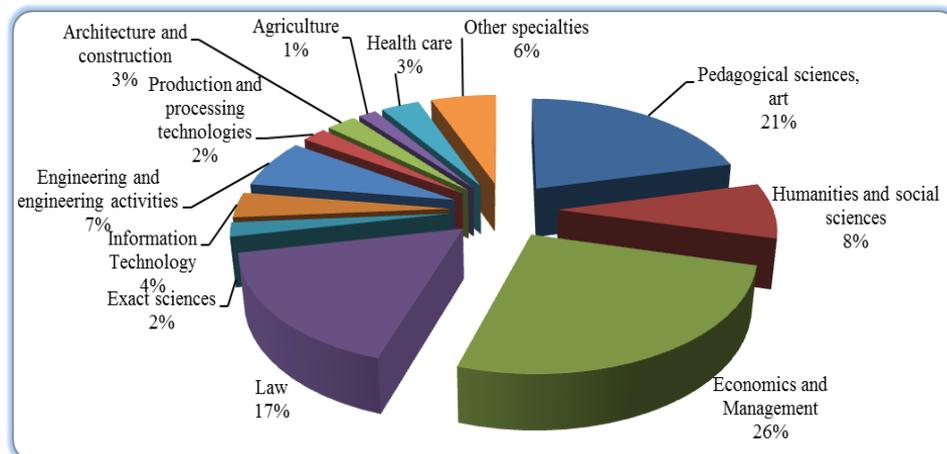


Figure 6. The structure of graduates of higher education institutions by specialty in 2019

Source: Elaborated by author based on National Bureau of Statistics data [0]

In this context, the analysis of the labor market demand was carried out on the basis of three leading Internet resources offering vacancies in the territory of Moldova. The results of the analysis demonstrate the supply of jobs in the context of specialties which are shown in Figure 7.

Analyzing the demand in terms of education, is worth noting that specialists with higher education are less in demand on the labor market. This is also evidenced by the data of the National Agency for Employment [0].

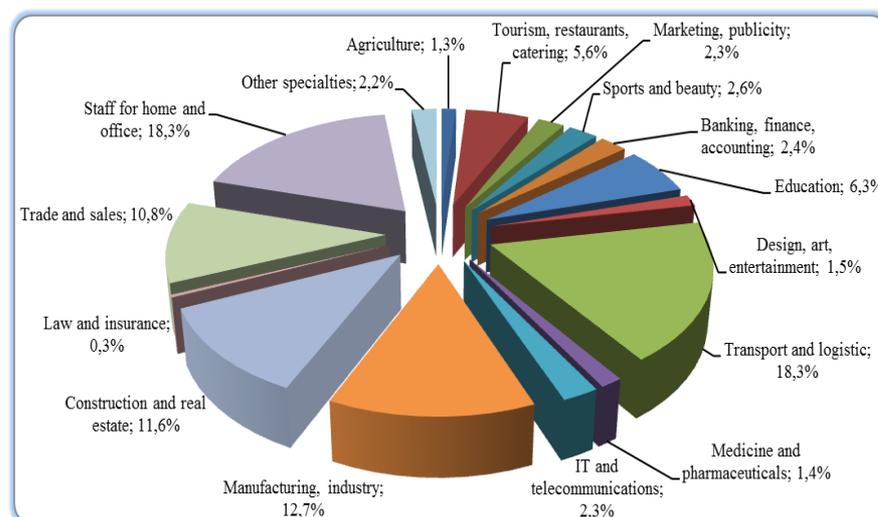


Figure 7. The structure of vacancies offered in the labor market of Moldova

Source: Elaborated by author based on data from the three leading Internet resources of Moldova (data for July 2020)

The current situation leads to the fact that a large number of graduates of educational institutions are employed in the first place of work not in their specialty, thereby losing their theoretical knowledge and skills.

The situation is aggravated by the fact that a population with huge human capital and potential is migrating. In general, migrants have a relatively good level of

education. According to statistic, 51% of migrants have specialized secondary or higher education and 49% of migrants have a gymnasium or lyceum level of education.

Along with education, public health is an important factor directly influences present in the formation and functioning of human capital. Poor health also leads to workforce, lower productivity, lower living standards and other socio-economic hardships.

Over the past 10 years, expenditures on health care in absolute terms have shown a steady upward trend (Figure 8). In 2018 expenditure amounted to 7 960.5 million. lei, which is more than 2 times higher than a figure of 2009 (3 846 900 000 lei).

However, after analyzing the tendency of US dollars and health care expenditures in the general expenditures of the consolidated budget and in GDP, we note a slight decline. Thus, the share of health care expenditures in the total expenditures of the consolidated budget in 2018 amounted to 12.9% of the total amount of the consolidated budget, which is 1.2 percentage points is less than in 2009.

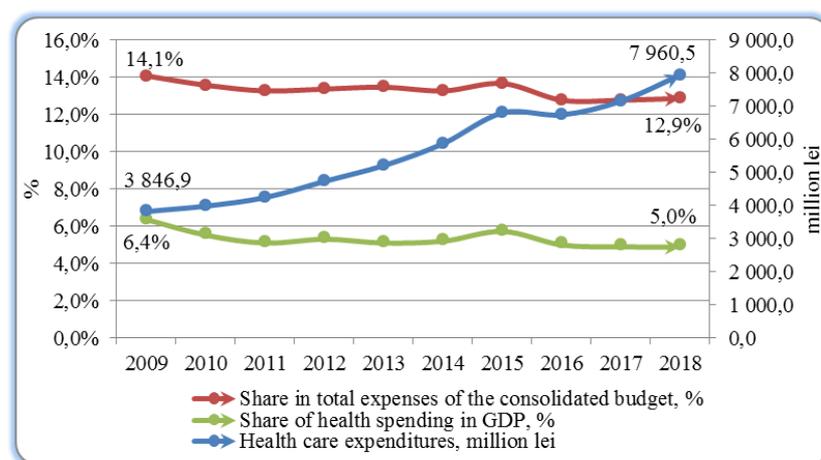


Figure 8. Dynamics of health care expenditures in the period 2009 - 2018

Source: Elaborated by author based on National Bureau of Statistics data [0]

A similar trend is observed in terms of the share of health spending in relation to GDP. Thus, in 2018, the share of health care expenditures decreased by 1.4 percentage points compared to 2009, amounting to 5.0% of GDP.

During the period, 2012 – 2018 years the number of reported cases has risen steadily on. Exceptions began in 2018, when the index decreased by 4.1 thousand people (-0.14%).

Despite the positive quantitative indicators of human potential in the Republic of Moldova, the qualitative indicator demonstrates a diametrically opposite situation. The quality of the education and health care system in Moldova is inferior to European and world standards.

According to the Report on Human Development, published on United Nation Development Program, the index of "Human Development" The Republic of Moldova is part of the group of countries with high human development and is located on the 107 world ranking and in last place among the European Union [0].

In 2018 the Republic of Moldova Catching la 75-th place among 157 countries in the ranking index of human capital according to the World Bank [0]. The proposed index measures the productivity level of the next generation of workers in comparison with the benchmark the full course of study and full health.

4. Conclusions

The determining factor of socio-economic development in the Republic of Moldova, in context of economic globalization and transition phase from the classic to the new economy is human capital. Its formation and accumulation should be considered as the most important factor in the economic growth of the state.

One of the main factors in the formation and development of individual human capital is the amount of income received. Wages are the main source of income (50.2%). The low wages are the main reason for migration and low investment in individual human capital.

Despite the importance of human capital, individual investment in it is minimal (1.1% of average monthly consumer spending per capita). In Moldova, the expenditure on education is considered the consumer spending than investment.

In conditions of insufficient funds for a person to meet his elementary physiological needs, there can't be talked of a complete restoration of the moral and physical wear and tear of the labor resource. The owner of human capital will improve biophysical, social, intellectual, spiritual and other abilities, provided that the amount of wages will meet the primary needs of life.

Public investments aimed at the formation of human capital are not effective enough. It should be noted in particular that there is the gap between subsystems of the public education and the labor market.

The result of the inconsistency of the subsystems is the employment of the population outside their specialty, the inconsistency of qualifications with the requirements of jobs and other aspects, as well as an increase in the number of overqualified persons among the employed population with higher education.

Joint contribution (from the state, enterprises and individuals) to the formation and effective use of human capital in order to ensure a healthy, educated and competitive population in the labor market will ensure a successful transition to a new economy and an increase in national wealth.

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- <https://www.worldbank.org/en/publication/human-capital>

WOMEN UNEMPLOYMENT DRIVEN BY THE INFLATION

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ABSTRACT. Although the Government take some actions in gender equity, the women unemployment is a challenge that exists in the labor market. Implication of women in economic activities will have a positive impact on economic development at national level, and more financial resources will be injected into the economy. As result a growth of inflation of the country is expected for long term period. The paper presents a balance between women unemployment and inflation rate. If unemployment falls below a certain rate, inflation accelerates, so the sufficiently high rate of unemployment, which can avoid this, is called the rate of unemployment that does not accelerate inflation. In the last four decades, macroeconomic research has expanded the analysis, so today we are talking about the existence and estimation of NAIRU, an acronym for Non-Accelerating Inflation Rate of Unemployment, which reflects that level of unemployment corresponding to stable inflation. In the NAIRU model, the real wage negotiated increases with the level of employment, as increased employment means fewer jobseekers and more bargaining power for unions. Unemployment is what regulates the workforce. Any policy aims to declare both a low level of unemployment and moderate inflation. This, with the essential aim of creating high and sustainable economic growth. However, recent decades have shown us that the processes of inflation and unemployment are interfering in many areas and with increasingly unexpected effects.

KEYWORDS: *women unemployment, economic development, gender equity, labor market.*

Introduction

The objective of the paper is to analyze the role of women in economic development of the country, by more active implication in labor market.

The key stakeholder, the Ministry of Economy and Infrastructure (MEI) is responsible for macroeconomic monitoring, analysis and forecasting. The development of the socio-economic forecasts is possible with active involvement of other key institutions, including the National Bank of Moldova (NBM), the Ministry of Finance (MoF), the National Bureau of Statistics and all line ministries. The scope and framework for development of macroeconomic and socio-economic forecasts is largely determined by the need to provide input to the development of MTEF and the draft annual budget Laws for the next year (including the laws on annual state budget, annual budget for state social insurance, and annual budget for health insurance). Ministry of Finance is responsible for the development of aggregate fiscal forecasts for the MTEF, as well as the detailed budget projections for the state budget.

National Social Insurance Agency and National Health Insurance Agency are responsible for the social insurance budget and health insurance budget projections respectively.

Traditionally, it is considered that there is an opposite correlation between inflation and unemployment [1,2], namely anti-inflationary measures generate unemployment, while the growth of employment can generate an increase in demand –that is more elastic compared to the supply of goods - and therefore it is generated the inflation. In order to understand what

the natural unemployment rate means, we start from the premise of the existence of inflation in the economy, expressed by a certain rate and the achievement, at the same time, of two conditions that do not change the size of inflation: not to create a surplus of demand, and no shocks of supply.

Methodology

The study is done using of the country developed macroeconomic model as an Excel Worksheets. More advanced models are under examination to be used for future and more advanced evaluation. The key indicators included in the socio-economic model include:

- Gross domestic product (GDP)
- Consumer price index (CPI) (projected with the National Bank of Moldova, NBM)
- Exchange rate (with the NBM)
- Exports
- Imports
- Trade balance
- Industrial output (together with the Ministry of Agriculture and Food Industry and the ME)
- Agricultural output (together with the Ministry of Agriculture and Food Industry)
- Investments in fixed capital
- Average nominal wage
- Labor Remuneration Fund

The following procedures are used to develop the forecast:

- data updating
- equations re-estimation
- specifications amendments (the forecast or the political simulation)
- forecast development
- results analyzing into Excel file, prepare for the presentation of the forecasting results.

The Phillips Curve

The relationship between inflation and unemployment was discovered by the British economist of New Zealand origin, Alban William Phillips [6], who researched a series of phenomena and statistics covering the period 1861-1957, highlighted an inverse relationship between the inflation rate and the unemployment rate, following the example of Great Britain. This relationship is known as the Phillips curve [7].

It is observed that, when the inflation rate increases, the unemployment rate decreases, because the increase in prices stimulates the expansion of economic activity, the increase of employment and the reduction of unemployment. On the other side, when the inflation rate decreases, there is an increase in the unemployment rate, as economic agents are not interested in expanding their activity. The conclusion is that, the fight against unemployment would require, to a certain extent, inflation; in return, combating the accentuation of the inflationary phenomenon would imply, to a certain extent, unemployment, which attenuates the possibilities of buying and raising prices. The Phillips curve found its confirmation in the economic reality of the market until the years 1960-1969.

The Phillips curve, as defined in 1958 by William Phillips, is based on the following relationship between the growth rate of salary $g(W)$ and the level of employment $f(U)$:

$$gW = gWT - f(U)$$

By this formula, Phillips tells us through this equation that the salary tends to increase according to its trend (T dependence of the salary), and to decrease when the level of unemployment increases. At the suggestion of Abba Lerner (1940) who argued that salary wages are adjusting to inflation expectations, in the 1970s the model was adjusted by introducing this term into the equation:

$$gW = gWT - f(U) + \lambda * gPex.$$

In simpler words, the salary depends on its trend (gWT), the level of unemployment (U) and the expected inflation ($\lambda * gPex$). Latter it was reached the inverse relationship between the inflation rate and the unemployment rate through another "artificial mathematical construction" based on a Keynesian innovation - the "natural level of production":

$$Y = Y_n + a \times (P - P_e)$$

where: Y –current production (logarithmic values),

Y_n –natural value of production (that does not depend on the price),

P –current prices and, P_e are the expected prices.

In this model it is assumed that "a" is a constant that must always be positive.

Economic theory mention, for example that, after a period in which a state's economy has been in recession, the unemployment rate will be quite high, which means a surplus of labor supply. From the moment the economic situation improves, the aggregate demand for labor will increase, leading to a decrease in the unemployment rate, and implicitly, an increase in the employed population. At the beginning, there will be little pressure to increase wages, and after a while, wages will increase in line with increasing labor productivity. This will increase the fixed and variable costs of businesses, while being felt in the prices of goods and services purchased by the population, which in turn will increase. Therefore, a decrease in unemployment leads to a general increase in prices, so to inflation. However, there are also situations when the Phillips curve does not find its applicability in the macroeconomic reality, especially in the years 1970-1984, when inflation showed values much higher than the unemployment rate, this situation being called stagflation.

We can conclude that, there is no long-term sustainable relationship between inflation and unemployment, with the Phillips curve being verifiable only in the short term:

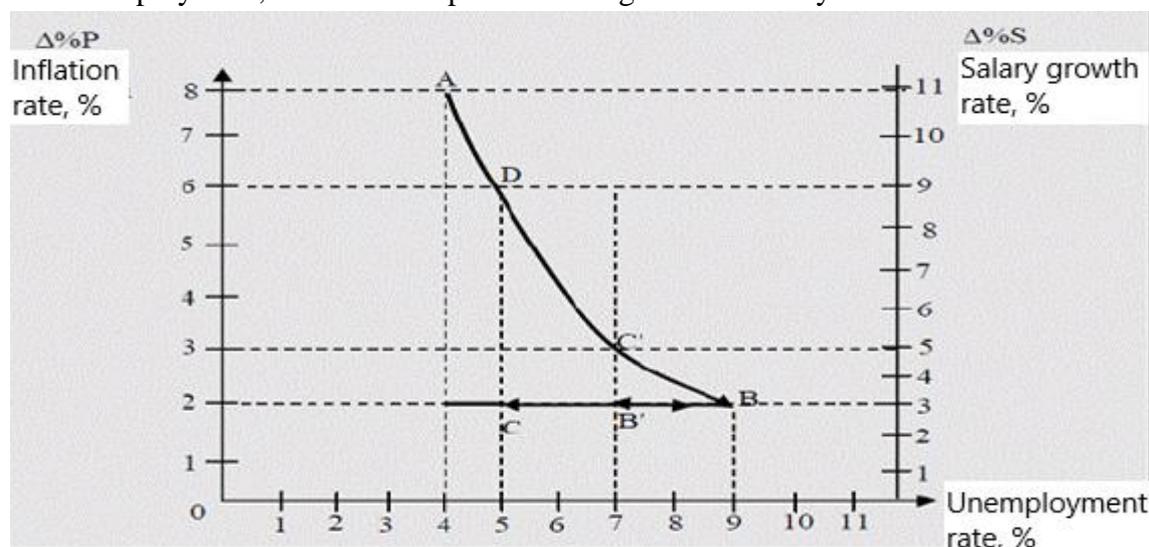


Figure2. Graphical example of the short-term Phillips Curve

Source: <http://academiadeinvestitii.ro/care-este-legatura-dintre-inflatie-si-somaj-2/>

According to the Figure 2 (above), economic decision makers, faced with alternative options, can choose between a low level of unemployment, satisfaction that must be paid with high inflation or vice versa.

The Figure above shows that in order to reduce the inflation rate by 6 percentage points (from A to B, from 8% to 2%), the sacrifice in the form of an increase in unemployment from 4% to 9% must be accepted, and the rate annual salary increase decreases from 11% /year to 3% /year. Conversely, in order to reduce, for example, the unemployment rate from 7% to 5% (B' → C), an increase in the annual inflation rate from 3% to 6% (C → D) must be accepted. For many years - practically throughout the period 1958-1975, the Philips curve (with the developments of R. Lipsey in 1960) helped to strengthen the Keynesian and Neo-Keynesian theories on the link between the state of the labor market and the inflation rate: to achieve some stability - a high percentage of unemployment must be accepted. At unemployment equal to its natural rate, the inflation rate is the lowest possible (theoretically zero).

Results

The result of assessment of impact of women implication in the labor market shows a positive GDP growth due to more financial resources injected into the economy. The econometric model, used for the development of the macroeconomic forecasting alternative scenario, was implemented in the context of medium term financing planning.

The econometric model forecasts the development of the principal variables from 4 economic sectors:

- Real sector (GDP by resource categories)
- External relations (balance of payments, financing of the external deficit, external debt)
- Budgetary sector (budget revenues and expenditures, their financing, internal debt)
- Banking sector (prices and monetary aggregates)

There are two types of linkages between the economic variables within the model, and both of them represent a system of equations making up the core of the model, and especially:

Identities, reflecting the reality without being confirmed by the estimation procedure. For example, the budget deficit requires financing, leading to one of the following consequences:

- Monetary policy liberalization (if the budget deficit is covered by credits granted by the NBM)
- Increase of external capital flows (if the deficit is covered by the external debt)
- Use of savings and less credit available to the economy.

Behavioral relations, as for example the permanent economic relations, which require to be confirmed by statistical recording, as follows:

- Free monetary policy, which was mentioned above, can lead to higher inflation;
- The external capital flows can determine the appreciation of the national currency, and consequently the increase of imports and the growth of the current account deficit;
- The reduction of credits to the economy will lead to the decrease in investments and consequently to the decrease in economic growth.

This paper shows that in the medium-term perspective the economic situation (within the model, as in the reality) depends on the economic policy of the authorities. Thus, the short list of factors determining the forecasted development level includes:

- Structural policies
- Tax policy quality
- Monetary policy strictness
- International markets attitude towards the Republic of Moldova (direct foreign investments, IMF programs, foreign transfers etc.)

Non-Accelerating Inflation Rate of Unemployment

If unemployment falls below a certain rate, inflation accelerates, so the sufficiently high rate of unemployment, which can avoid this, is called the rate of unemployment that does not accelerate inflation. In the last four decades, macroeconomic research has expanded the analysis, so today we are talking about the existence and estimation of NAIRU, an acronym for Non-Accelerating Inflation Rate of Unemployment, which reflects that level of unemployment corresponding to stable inflation. In the NAIRU model, the real wage negotiated increases with the level of employment, as increased employment means fewer jobseekers and more bargaining power for unions. Unemployment is what regulates the workforce. Any policy aims to declare both a low level of unemployment and moderate inflation. This, with the essential aim of creating high and sustainable economic growth. However, recent decades have shown us that the processes of inflation and unemployment are interfering in many areas and with increasingly unexpected effects.

Importance of the Phillips Curve for Moldova

The Phillips curve shows the optimal values of inflation for a certain unemployment rate to reach economic equilibrium. This helps central banks to establish the most effective monetary or fiscal policy: low inflation and a high employment rate.

When the inflation rate increases, the unemployment rate decreases, because the increase in prices stimulates the expansion of economic activity, the increase of employment and the attenuation of unemployment. Conversely, when the unemployment rate decreases, there is an increase in the unemployment rate, as economic agents are not interested in expanding their economic activity. Hence the conclusion is, the fight against unemployment would require, to a certain extent, inflation; in turn, combating the accentuation of the inflation would imply, to a certain extent, unemployment, which attenuates the possibilities of buying and raising prices.

Data for the Republic of Moldova of unemployment rate and inflation rate in the period 2008-2017 show the following evolution [8]:

Table1. The unemployment rate and inflation rate in Moldova, %

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
unemployment rate, %	7.4	6.7	5.6	5.1	3.9	4.9	4.2	4.1	3.0	3.0
unemployment rate for Men, %	9.1	7.7	6.8	6.0	4.6	6.2	5.5	4.8	3.5	3.5
unemployment rate for Women, %	5.7	6.6	4.3	4.1	3.1	3.6	2.9	3.3	2.5	2.5
inflation rate, %	7.36	7.61	4.66	4.64	5.10	9.67	6.48	6.57	3.05	4.84

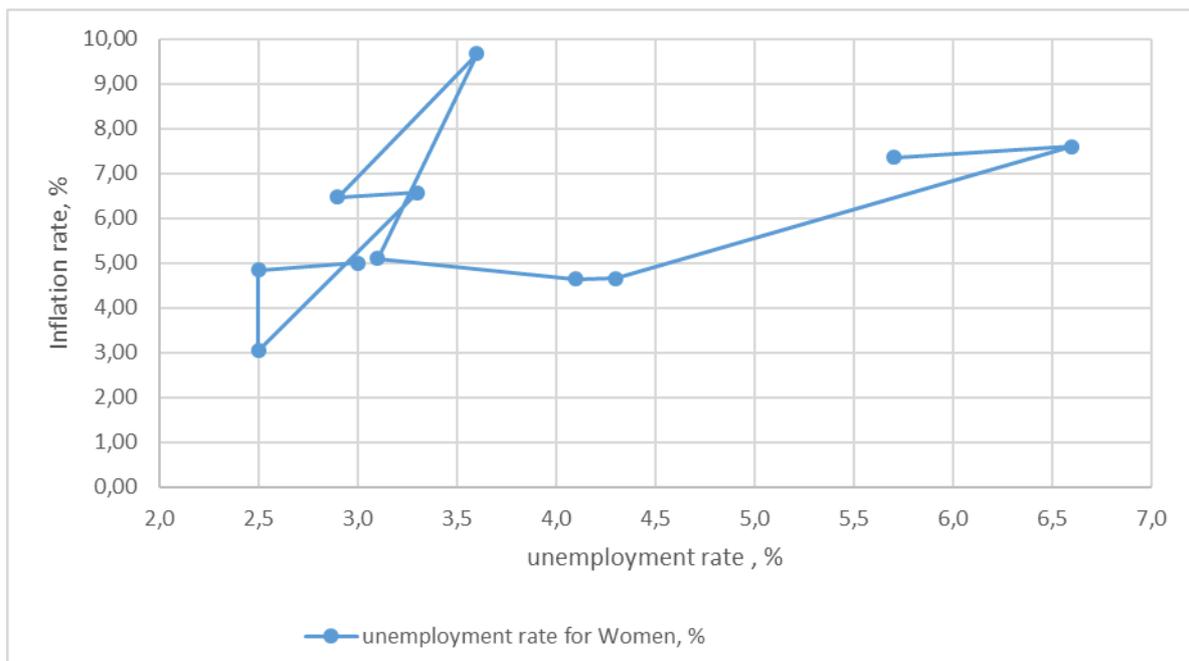


Figure3. The Phillips Curve for the Republic of Moldova, %

Source: developed by the author

The analyses of trends 2010-2020 shows that in order to reduce the inflation rate by 5 percentage points (from 9,6% to 4,6%), the sacrifice in the form of an increase in unemployment from 3,6% to 4,3% must be accepted, and the rate annual salary of women decreases from 12% /year to 9% /year.

The analysis of the Phillips curve showed that for the Republic of Moldova maintaining inflation at 4,6% ensures a minimum value of about 4,3% of women unemployment. If inflation falls from 9,6% to 4,6%, unemployment rises from 3,6% to 4,3%, if inflation rises from 4,6% to 7,6%, women unemployment rises from 4,3% to 6,6%. It is possible to obtain a minimum value of about 2,5 – 3 % of unemployment rate for women with an inflation rate of about 5% in conditions of existing trend of depopulation of Moldova. One of possible reason for decreasing unemployment might be the trend of depopulation of the country. The research is based on “What if” analyses and the general conclusion is that there are other factors that have impact on the women unemployment and more research is necessary to carry out with consideration of all driving factors. Figure 4 bellow shows the trend 2010-2020 of unemployment rate of women, and the forecast for 2020-2050.

The forecast for 2020-2050 will be analyzed in more details in the Figure 5 bellow. The objective is to observe the interconnection between inflation, unemployment and women’s salary growth rate. The result will offer us information on what is the impact between these indicators.

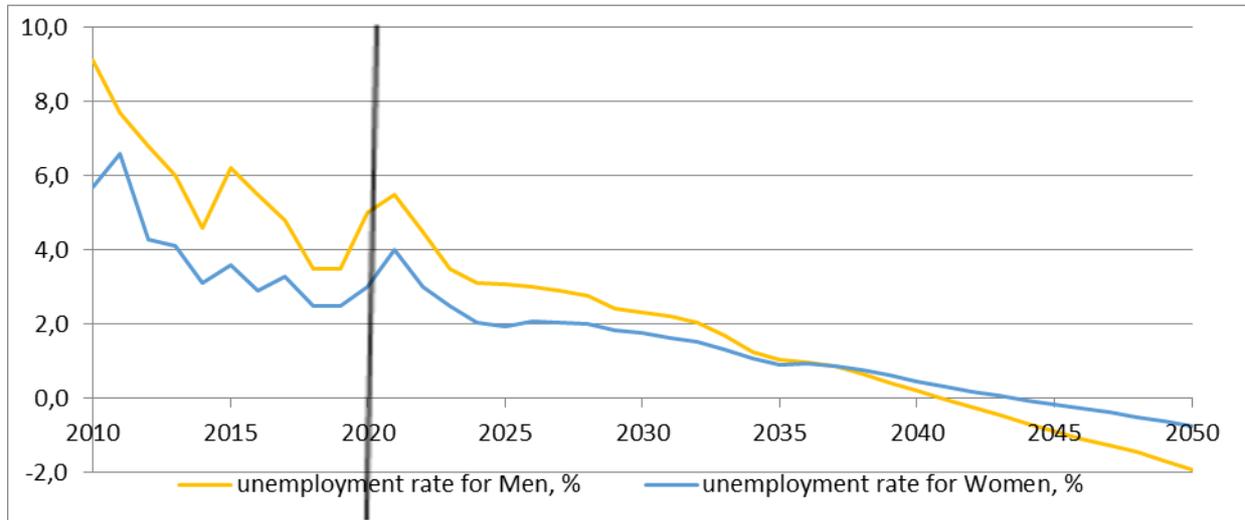


Figure 4. The trend of unemployment rate during 2010-2019, and forecast for 2020-2050, %

Source: developed by author based on data from NBS (National Bureau of Statistics)

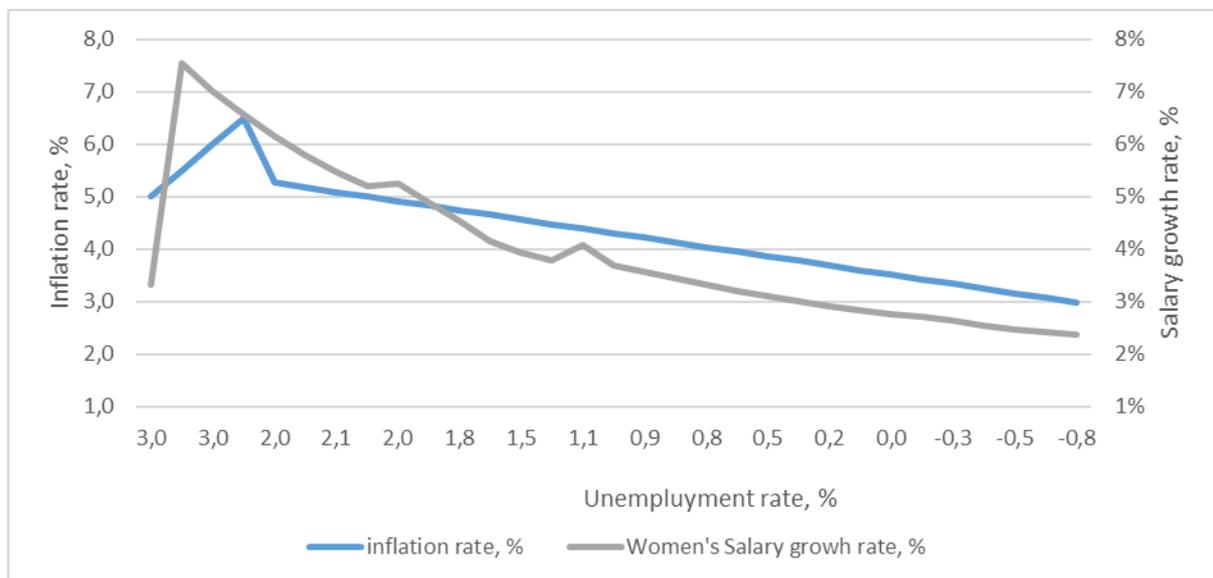


Figure 5. The forecast of inflation, unemployment and women’s salary growth rate during 2020-2050, %

Source: developed by author based on data from NBS (National Bureau of Statistics)

The Figure 5 above shows that in order to reduce the inflation rate by 3 percentage points by 2050 (from 6,5% to 3%), the sacrifice in the form of an increase in women unemployment from 2,5% to 4% must be accepted, and the rate of annual salary decrease from 7,5% /year to 2,5% /year. Conversely, in order to reduce, for example, the unemployment rate from 3% to 0%, a decrease in the annual inflation rate from 6,5% to 3% must be accepted.

Conclusions

The main findings of the research done on impact of women unemployment on the economic development of the country can be summarized as follows:

- When the inflation rate increases, the unemployment rate decreases, because the increase in prices stimulates the expansion of economic activity, the increase of employment and the reduction of unemployment. On the other side, when the inflation rate decreases, there is an increase in the unemployment rate, as economic agents are not interested in expanding their activity. The conclusion is that, the fight against unemployment would require, to a certain extent, inflation; in return, combating the accentuation of the inflationary phenomenon would imply, to a certain extent, unemployment, which attenuates the possibilities of buying and raising prices.
- There is no long-term sustainable relationship between inflation and unemployment, with the Phillips curve being verifiable only in the short term
- The Phillips curve shows the optimal values of inflation for a certain unemployment rate to reach economic equilibrium. This helps central banks to establish the most effective monetary or fiscal policy: low inflation and a high employment rate.
- For the Republic of Moldova maintaining inflation at 4,6% ensures a minimum value of about 4.3% of women unemployment. If inflation falls from 9,6% to 4,6%, women unemployment rises from 3.6% to 4,3%, if inflation rises from 4,6% to 7,6%, women unemployment rises from 4.3% to 6,6%.
- It is possible to obtain a minimum value of about 2,5 – 3 % of unemployment rate for women with an inflation rate of about 5% in conditions of existing trend of depopulation of Moldova. One of the reason for such an effect might be the depopulation trend of the country.
- In order to reduce the inflation rate by 3 percentage points by 2050 (from 6,5% to 3%), the sacrifice in the form of an increase in women unemployment from 2,5% to 4% must be accepted, and the rate of annual salary decrease from 7,5% /year to 2,5% /year. Conversely, in order to reduce, for example, the unemployment rate from 3% to 0%, a decrease in the annual inflation rate from 6,5% to 3% must be accepted.
- For the Republic of Moldova, the depopulation of the country is a serious issue and urgent actions are needed now in order to avoid challenges that will start by year 2040 created by deficit of labor on the market.

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EVOLUTION OF RESEARCH AND DEVELOPMENT EXPENDITURE AT GLOBAL, REGIONAL AND NATIONAL LEVELS

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ABSTRACT. Currently, the funding system of the research sector around the world has undergone impressive structural changes. The purpose of this study is to present the evolution of research and development expenditures: total, regionally, by leading countries and in the Republic of Moldova. The analysis of global expenditures for research and development, over a period of 15 years, highlighted their doubling.

KEYWORDS: *research sector, research and development funding, public investment in science*

INTRODUCTION

Public investments in research and development contribute to the achievement of strategic objectives for sustainable development, but also to the evolution of the national research system. The activities performed by the research sector include activities, which generate the creation of new products and services, as well as the scientific solution of national and international problems. Budgetary expenditures for research and development represent the state's financial effort for development strategic priorities. The research sector involves high costs because it needs special material resources and highly qualified personnel trained in scientific activity.

The research objectives are: analysis of global expenditures for total research and development and in regional division; analysis of global research and development expenditures by leading countries; analysis of research and development expenditures in the Republic of Moldova.

The analysis of public expenditures for research and development is a subject covered over the years by scientists and researchers, among which we can note some local authors such as: V. Fetiniuc, I. Luchian [2], T. Furdui [3], Gh. Cuciureanu, C. Ungur [1], A. Şuşu-Ţurcan, O. Oprea [6], and others. Their works and studies are a real treasure for science.

The general research methods used in this study are oriented mainly at presenting the dynamics and trend of total global expenditures in the regional division, in the leading countries and in the Republic of Moldova. The study period is 15 years, from 2005 to 2019. The following research methods were applied are: statistical method, to determine the indicators: annual growth rate, increase, average and quota of global research and development expenditures; the analytical-comparative method, for the analysis and comparison of the global expenditures for research and developed by regions and countries; the documentation method, for selecting the information necessary for the present study through periodic observations of the annual evolution of the researched indicators.

For the elaboration of this study, the following informative materials were used: Annual R&D Magazine reports for the years 2005-2019 [9], Annual reports on the activity of the Council for Science and Technological Development for the years 2005-2017 [5],

Allocation reports budget of the Ministry of Culture Education and Research for the years 2018-2019 [8] and others.

RESULTS AND DISCUSSIONS

Analysis of global expenditures for total research and development and in regional division

The total volume of global research and development expenditures, during the years 2005-2019, registered an increasing trend (figure no. 1).

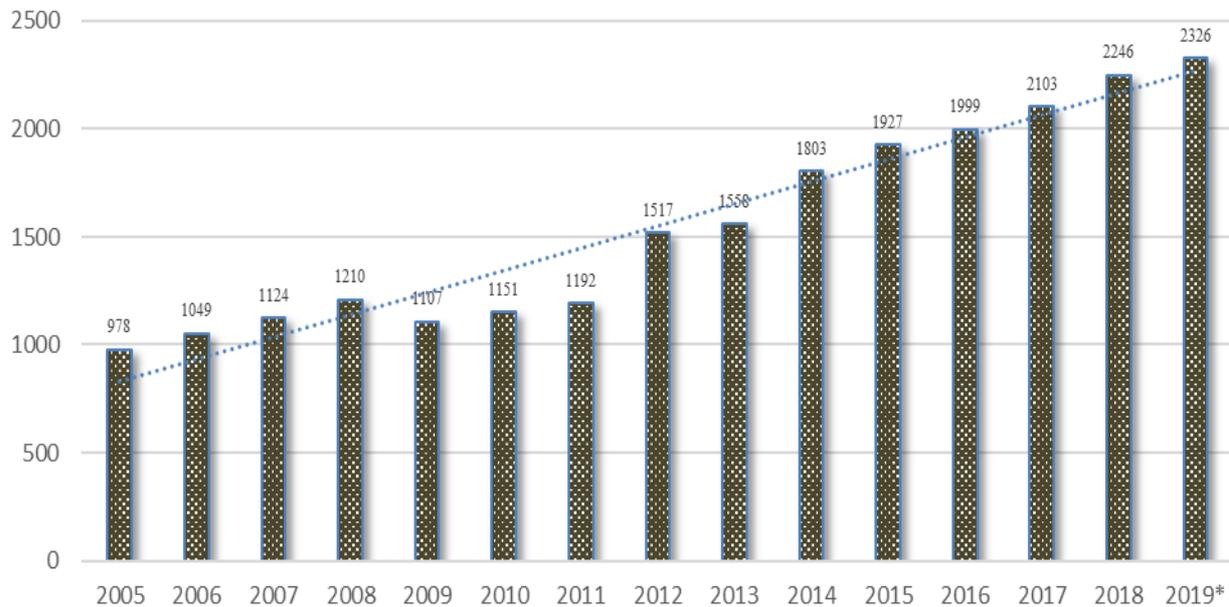


Figure no. 1. Dynamics of global research and development expenditures during the years 2005-2019, billion USD

** Note: for 2019 have been included planned expenses*

Source: elaborated by the author after [9]

Thus, the overall expenditures for research and development, in the analyzed period, increased by ≈ 2.4 times, or by 1347.9 billion USD, from 978.3 billion USD in 2005, up to 2326.2 billion USD in 2019. In 2019, an increase in global research and development expenditures was forecast by ≈ 79.7 billion (or $\approx 3.5\%$) compared to 2018. The average annual growth rate of global research and development expenditures in the period studied was 106.2%, and the highest annual growth rate is recorded in 2012 compared to 2011 (127.3%), where research and development expenditures increased from 1192 billion USD in 2011 to 1517 billion USD in 2012. From 2015 to 2019, the annual increase in global research and development expenditures ranges from 3.5 % and 6.8%. In 2009, due to the global economic crisis, there was a decrease, compared to 2008, of global expenditures on research and development by ≈ 103.2 billion USD or 8.5%. At the same time, it is noteworthy that, during the analyzed period, the annual growth rate increased ≈ 1.04 times. Currently, there is a slight upward trend in overall research and development expenditures.

The dynamics of global expenditures for research and development in the regional division is presented in table no. 1.

Table no.1. Dynamics of global research and development expenditures for the period 2005-2019 in regional division, billion USD

Region / year	America	Asia	Europe	Rest of world
2005	369,1	341,3	236,1	31,8
2006	374,9	387,2	264,3	23
2007	387	436,2	276,3	24,4
2008	401,1	494,4	288,8	25,9
2009	433,2	372,5	267	34,3
2010	446,7	400,4	268,6	34,8
2011	458	421,1	276,6	36,3
2012	485	601	350	81
2013	489	637	349	83
2014	577	724,8	387,7	113,6
2015	590,4	795,2	416,6	124,3
2016	616,3	878,8	435,3	68,4
2017	630,8	897,8	441,5	132,4
2018	664,9	977,2	462,8	141,5
2019*	681,6	1028,2	472,2	144,2

* *Note: for 2019 have been included planned expenses*

Source: elaborated by the author after [9]

During the studied period, the world leaders in funding of the research sector are: America, Asia and Europe. If in 2005, the world leader in this regard was America, then, starting with 2012, Asia becomes the leader. Asia's global research and development expenditures averages 626.2 billion USD annually and they grew up 686.9 billion USD, or ≈ 3 times, from 341.3 billion USD in 2005 to 1028.2 billion USD in 2019. Global research and development expenditures in Asia increased in 2019 compared to 2018 by 51 billion USD, or by $\approx 1.1\%$ (from 977.2 billion USD to 1028.2 billion USD). America's research and development expenditures averages 507 billion USD annually and has increased ≈ 1.8 times, or 312.5 billion USD, from 369.1 billion USD in 2005 to 681.6 billion USD in 2019. The dynamics of America's global expenditures on science is positive. The annual growth rate of America's global research and development expenditures in 2019 compared to 2018 is 102.5%, they increased by 16.7 billion USD (from 664.9 billion USD to 681.6 billion USD). Another positive trend has been the financing of science in Europe, where on average about 346.2 billion USD is invested in research and development, and the increase is ≈ 2 times, from 236.1 billion USD in 2005 to 472.2 billion USD in 2019.

At the same time, in 2013, the volume of global expenditures on research and development in Europe decreased, from 350 billion USD in 2012 to 349 billion USD in 2013. The increase in global expenditures on research and development in Europe increased in 2019 compared to 2018 by USD 9.4 billion USD (from 462.8 billion USD to 472.2 billion USD). Global research and development expenditures for the rest of the world averages 73.3 billion USD annually. The increase in the volume of global expenditures on research and development of other regions in the period under review is ≈ 4.5 times, or 112.4 billion USD. The annual growth rate of global research and development expenditures of the analyzed region, from 2019 to 2018, is 101.9%, increased by 2.7 billion USD (from 141.5 billion USD, to 144.2 billion USD). The highest average annual growth rate of global expenditures on research and development is observed in the "Rest of the World", about 116.8% annually.

Asia has an average annual growth rate of science funding of $\approx 108.4\%$, and America and Europe have an average of 105% annually.

From figure no. 2, the dynamics of the share of research and development expenditures in regional aspect, for the period 2005-2019 can be seen.

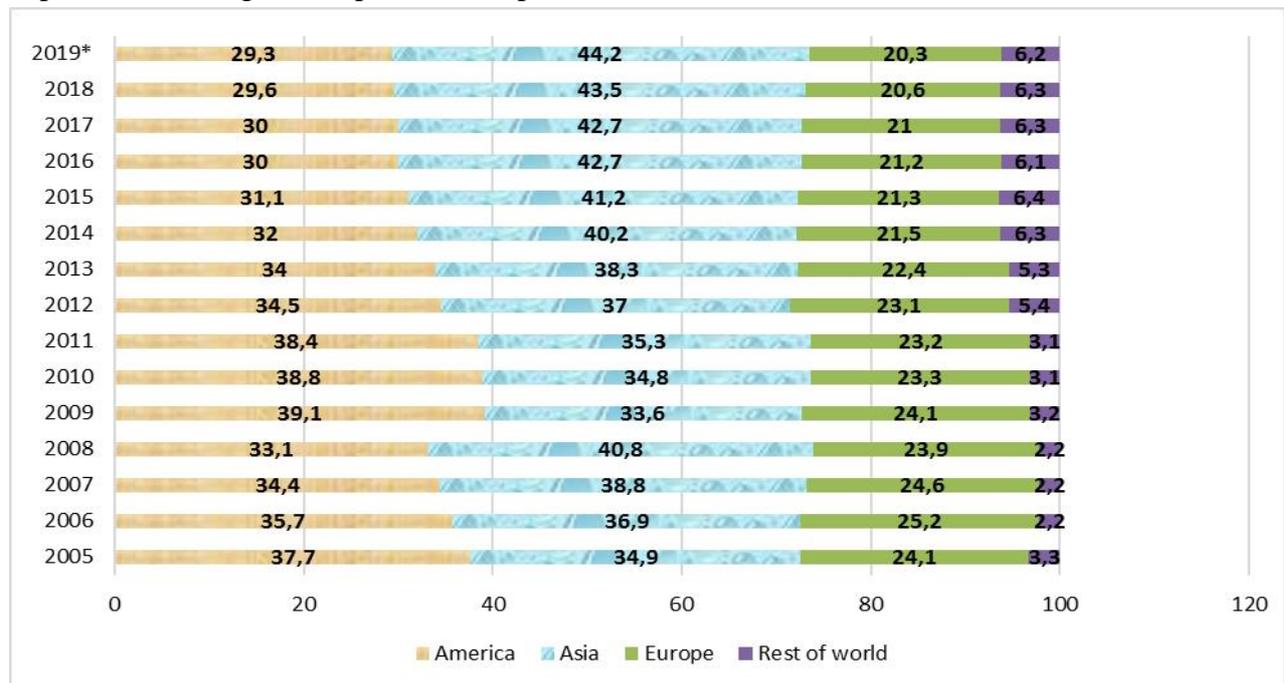


Figure no. 2. Dynamics of the share of research and development expenditures in regional aspect for the period 2005-2019 in regional division, in%

* Note: for 2019 have been included planned expenses

Source: elaborated by the author after [9]

During the study period, Asia has the largest quota of global research and development expenditures, averaging 39% , followed by America with an average of 34% and then Europe with an average quota of 23% of total global research and development expenditures. In 2019 compared to 2018, only Asia recorded an increase in the quota of total global expenditures on research and development in the regional division, the increase was $\approx 0.7\%$, but at the same time, America and Europe recorded a decrease in the quota in the regional division of research and development expenditures by $\approx 0.3\%$ each. The rest of the world registered a decrease in the quota in the regional division of research and development expenditures by $\approx 0.1\%$.

Analysis of global research and development expenditures by leading countries

In table no. 2, the dynamics of the global research and development expenditures of the leading countries are presented.

Table no. 2. Dynamics of global research and development expenditures for the period 2015-2019 divided by leading countries, billion USD

Country	2015	2016	2017	2018	2019*
US	496,8	521,8	537,6	565,8	581
China	372,8	424,8	444,8	485,5	519,2
Japan	164,6	185,9	185,5	191,5	193,2
Germany	112,2	114,6	114,8	120,8	123,2
India	66,5	73,6	76,9	86,2	94,1

* Note: for 2019 have been included planned expenses

Source: elaborated by the author after [9]

From 2015 to 2019, the top 5 countries that invest the most in research and development are: USA (≈ 540.6 billion USD annually), China (≈ 449.4 billion USD annually), Japan (≈ 184.1 billion USD annually), Germany (≈ 117.1 billion USD annually) and India (≈ 79.5 billion USD annually). The largest increase in global research and development expenditures in China is ≈ 1.4 times, or 146.4 billion USD, from 372.8 billion USD in 2015 to 519.2 billion USD in 2019. India's global research and development expenditures they grew up ≈ 1.4 times, or 27.6 billion USD, from 66.5 billion USD in 2015 to 94.1 billion USD in 2019, which favored the acceleration of India from 8th place in 2009, 6th place in 2015 and then 5th place in 2019. The United States of America has increased global expenditures on research and development in the last 5 years ≈ 1.2 times, or 84.2 billion USD, from 496.8 billion USD in 2015 to 581 billion USD in 2019. Japan also increased global expenditures for research and development on ≈ 1.2 times, or by 28.6 billion USD (from 164.6 billion USD in 2015, to 193.2 billion USD in 2019). Over the period under review, global expenditures on research and development in Germany they had slowest growing, by about 1.1 times, or by 11 billion USD, from 112.2 billion USD in 2015 to 123.2 billion USD in year 2019.

In the analyzed period, 3 out of 5 countries registered a positive increase in the annual growth rate of global research and development expenditures: India (101.6%), United States of America (100.3%) and Japan (100.2%).

Referring to research expenditures, an important aspect of funding is the quota of budget expenditures for research and development in GDP (figure no. 3).

Budgetary expenditures for research and development in GDP in the leading countries for investment in research and development, in 2019, constitute on average 2.3% and register an increasing trend compared to 2009 (on average $\approx 1.9\%$), with 0.4% or ≈ 1.2 times. Romania remains at the same level of 0.5% during the analyzed period. However, the Republic of Moldova has the lowest quota compared to other states of the European Union and neighboring, which is only 0.3% of GDP, down from 2009, by 0.2% (≈ 7 times).

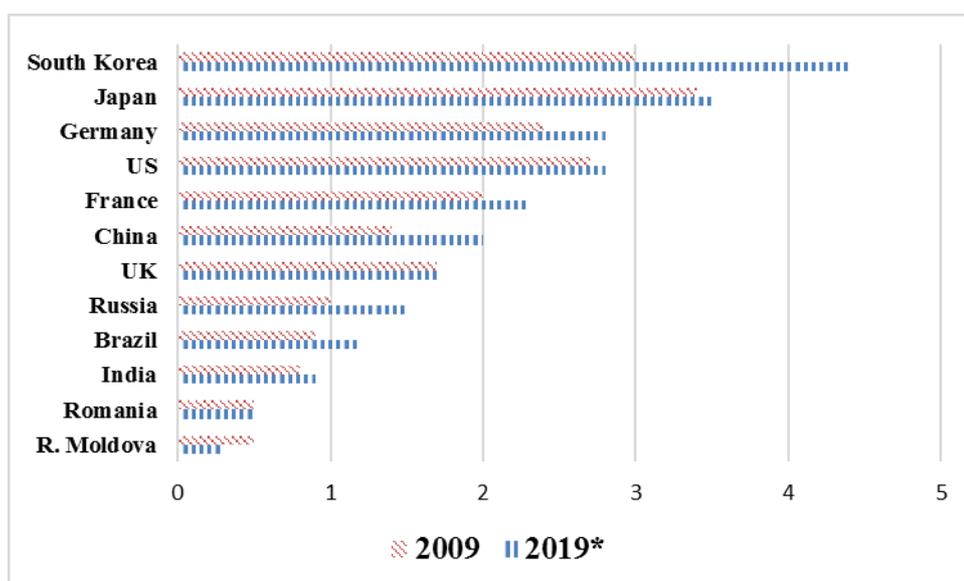


Figure no. 3. The percentage of budgetary expenditures for research-development-innovation in GDP, in some countries, 2009 and 2019, in %

* Note: for 2019 have been included planned expenses

Source: elaborated by the author after [7]

Analysis of research and development expenditures in the Republic of Moldova

According to the National Program in the fields of research and innovation for the years 2020-2023 [4], in the Republic of Moldova, the financing of the research sector is made on the following strategic priorities: Health; Sustainable agriculture and food security; Environment and climate change; Societal challenges; Economic competitiveness and innovative technologies, with an estimated financial effort as follows: for 2020, the amount of 227.7 million MDL is provided; for the year 2021 - 238.9 million MDL; for the year 2022 - 257.9 million MDL; and for the year 2023 in the volume of 276.3 million MDL. The annual increase is $\approx 5\%$, due to the annual decrease of costs for institutional consolidation measures in the fields of research and innovation, for the financing of which, it is estimated: in 2020 in the amount of 149.8 million MDL; in 2021 - 128.7 million MDL; in 2022 - 110.5 million MDL; and in 2023 - 92.1 million MDL.

In 2020, expenditures for research and development in the volume of 374.5 million MDL were planned from the state budget, which is ≈ 28 million MDL more than the amount planned in 2019 (346.5 million MDL).

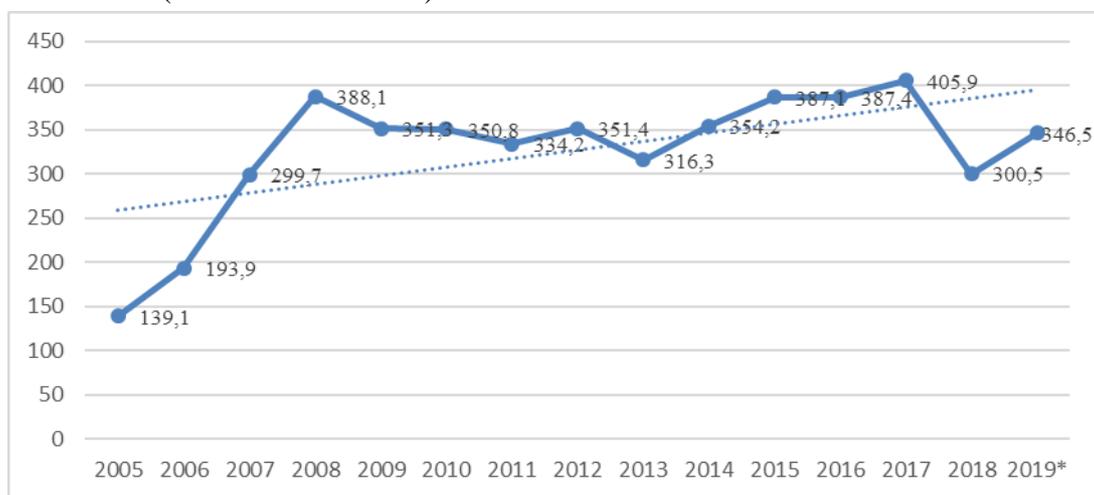


Figure no. 4. Dynamics of expenditures from general resources and revenues collected for research-development-innovation in the Republic of Moldova, years 2005-2019, million MDL

* **Note:** for 2019 have been included planned expenses

Source: elaborated by the author after [5, 8]

During 15 years, from 2005 to 2019, the budgetary expenditures for research-development-innovation increased ≈ 2.5 times or by 207.4 million MDL, from 139.1 million MDL in the year 2005, up to 346.5 million MDL in 2019 (figure no. 4).

The highest annual growth rate of budget allocations for the research sector in the Republic of Moldova is found in 2007 compared to 2006 $\approx 154.6\%$. And the lowest annual growth rate, which means a decrease, is found in 2018 compared to 2017 - about 74%, simultaneously with the change of the founder of research institutes.

For the period 2021-2023, the trend of the volume of budget allocations for financing scientific activities and maintaining the infrastructure of research institutions will be constant, and the budgetary costs for the research sector are estimated at ≈ 368 million MDL annually.

The value of Gross Domestic Product (GDP) has a direct influence on the funding of the research sector, because, since the approval of the Science and Innovation Code, the amount of annual budget allocations to the research sector is set as a percentage of GDP. In the Republic of Moldova, GDP tripled, or increased by 132.2 billion MDL, from 60 billion

MDL in 2009 to 178.9 billion MDL in 2017, averaging 118.8 billion MDL. The average annual GDP growth rate is 113.4%. During the study period, the share of research sector funding in % of GDP averaged 0.4% and decreased by ≈ 2.6 times or by 0.4% from 0.59% in 2009 to 0.23 in 2017. The average annual growth rate of the share of science funding in GDP is 90.5%. It is noteworthy that the annual growth rate of GDP is 13.4% higher, and the annual growth rate of the share of science funding relative to GDP is 9.5% lower than 100%. The population is the main resource for supplying human capital to the research sector and for carrying out scientific research services. The evolution of the number of the present population has a decreasing trend, being on average 3392.6 million people. During the years 2009-2018, the number of the present population decreased about 1.03 times or by 89.4 million people. This fact is due to the negative natural balance, which during this period decreased threefold, from 1.3 thousand in 2009 to 4.6 thousand in 2018. At the same time, they negatively influenced the migration processes that the Republic of Moldova goes through, where annually, an average of 3.2 thousand people leave the country to change their place of residence. The scientific human potential is a resource that contributes to the generation of new knowledge and the attraction of vital financial resources for the organization. The total number of employees in the research-development activity is decreasing and decreased by 973 employees in 2009 from 5315 employees, in 2018 to 4451 employees. The average number of employees in the analyzed period is about 5 thousand employees. The largest share in the total number of employees is occupied by researchers - 66.1%, which decreased by ≈ 1.2 times, or by 507 employees, from 3561 employees in 2009 to 3054 employees in 2018 [10]

CONCLUSIONS

Total global expenditures on research and development in the last 15 years have increased and doubled. If in 2005, the world leader in public funding of the research sector, in regional division was America, then, starting with 2012, Asia becomes the leader. Asia is performing well on public investment in research and development thanks to China, Korea and India, which have increased public expenditures on science.

Leading countries invest in research and development public resources on average over 2% of GDP and mark an increasing trend of theirs.

Budget expenditures for research-development-innovation in the Republic of Moldova have also doubled, but for the period 2021-2023, the trend of public investment to finance scientific research and to maintain the infrastructure of research organizations will be constant. The annual growth rate of GDP exceeds by 22.9% the annual growth rate of the share of science funding relative to GDP.

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RETURN MIGRATION TO THE REPUBLIC OF MOLDOVA: FROM THE THEORETICAL APPROACH OF INSTITUTIONAL CONCERN

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ABSTRACT. Nowadays, return migration has become a highly publicized and actively researched subject, as an expression of the dimension that this type of migration acquires at the contemporary stage and of the effects that it induces. At the contemporary stage, several states of the world have changed their status from a state of emigration to a state of immigration, and in the current context of the global pandemic a massive return of migrants is expected amid acute economic recessions in countries with large numbers of migrants. This influx of migrants could be an important resource for the economy of some states currently dependent on the volume of remittances sent to the country by emigrants, as is the case of the Republic of Moldova. The number of migrants returning to the Republic of Moldova is currently low, and those returning are facing various reintegration problems. In this sense, the support provided by state institutions for their reintegration is absolutely indispensable. Through this study, the author aims to analyze the tools used by the structures of the state in order to provide logistical support for the socio-economic reintegration of migrants returning to the country. The analysis highlighted the existence of a concern through a legislative framework appropriate to this purpose, which is not yet fully operational. The economic reform that the Republic of Moldova is going through should offer more opportunities to the citizens of this country to work in the country, so that they do not have to leave the country.

KEYWORDS: *return migration, programs for migrants.*

INTRODUCTION

The population of the Republic of Moldova was included in the global migration circuit at the end of the twentieth century, after the collapse of the Soviet Union. Economic destabilization caused by the loss of ties with former member states, as well as numerous economic crises and shocks, has stimulated the migration of Moldovan citizens in search of work and competitive wages abroad.

In recent years, especially after the escalation of the economic crisis in the Republic of Moldova, both governmental and international institutions, civil society have in mind the situation of migrants and the possible return. Moreover, the authorities of the Republic of Moldova, with the support of international bodies, aim to provide the necessary assistance to the citizens of the Republic of Moldova, with the support of international bodies providing the necessary assistance to citizens of the Republic who intend to return or have returned to the country. In this regard, it should be noted that the Government is currently in the process of developing policies on incentives for the return of emigrants.

The purpose of this study is to assess the content and relevance of government measures regarding the reintegration support of migrants returning to the country after a migration experience. Several basic objectives are subordinated to this purpose:

- Evaluation of the tools used by certain state institutions regarding return migration (strategies, development plans, etc.);
- Analysis of programs launched to return migrants both through the banking system and through social projects and programs;

- Analysis of the problems faced by returning migrants according to the materials of empirical studies and the written press;

The Republic of Moldova does not have a strict record of returning migrants, their number is estimated indirectly in the national empirical research. In 2012, the National Bureau of Statistics estimated the number of returned migrants at about 2.6% of the total population (NBS 2012). Some statistics are provided by the National Agency for Employment, which records data only on returned migrants who have used the agency's services. Thus, 337 returned migrants were registered in 2017 and 1,144 in 2018 or 3.5 times more than the previous year [13].

The importance of the study topic is to understand the challenges and opportunities related to their integration on the local labor market and the transfer of human, social and financial skills, acquired abroad, for the country's economy. Returned migrants could play an important role, contributing to the development of their homeland, even if their return is temporary or circulatory.

METHODS AND MATERIALS

The study is based on a qualitative methodology, the study aims to highlight the types of socio-economic and political challenges to which recently returned Moldovans respond differently, depending on the assimilated experience, the country from which they return, but also their socio-demographic profile: gender, age, qualification level, family situation, social, economic and cultural capital.

The paper is based on the analysis of the content of national policies (migrant return strategies, economic strategies, analyzes related to development plans, national, regional and local best practices, see Table 1)

Table 1 Initiatives analyzed in this study.

Initiated program	Spatial scale	Aim
PARE 1+1	Regional	Re-attraction
Youth Economic Empowerment (PNAET)	National	Re-attraction Reintegration
Start for young people - a sustainable home business	Regional Local	Retention Reintegration
Credit guarantee fund	Regional Local	Reintegration
Women in business	Regional Local	Re-employment Reintegration
First House	National	Reintegration Re-attraction
Integrating Migration into Local Development (MIDL)	Regional Local	Reintegration

Source: Made by the author, based on data from the ODIM study

Main methods used:

- 1) **analysis**: allowed the author to analyze the available documents, using a qualitative approach in the given research. Identifying the objectives and tools in each policy of an initiated program;
- 2) **systemic analysis**: in assessing and analyzing the relationships between economic and social components, establishing cause-effect relationships;

During the classification of policies, the author relied on Lowell's (2002) "Six R" model. The starting point was the data provided by the Labor Force Survey on migration,

especially the number of migrants in 2012. Statistical data provided by the National Agency for Employment, which records data only on returned migrants who have used the agency's services. Therefore, the paper identifies the most common directions, objectives and tools of national remigration policies.

Analyzing remigration policies, we use the following definition: returning migrants are people who return to their country of citizenship after being international migrants (either short-term or long-term) in another country and who intend to remain in their own country. at least one year (UN Statistics Division 1998). Policies aimed at voluntary return to study will generally be outlined, and no policies / programs on forced remigration modalities (involving the return of refugees or asylum seekers to their countries of origin) will be examined.

According to the literature, political responses to migration could be divided into six categories, called "Six R" (Lowell 2002):

1. *Return of migrants to their country of origin* - focusing on the permanent return of workers. There are different objectives of these policies: the benefit of the new skills acquired by migrants during emigration, the reversal of negative demographic trends, the management of labor shortages in certain sectors or regions. The social reintegration of returnees is a crucial element of these policies, because without a successful reintegration, the return can only become temporary and workers can emigrate again.
2. *Restricting international mobility* - this policy option is used mainly in less developed countries to protect their internal labor market and to maintain a skilled workforce at home.
3. *Recruitment of international migrants* - attracting, in most cases, highly skilled workers from abroad. Such policies make immigration easier for skilled workers and often do not provide incentives to attract them.
4. *Reparation for loss of human capital (compensation)* - this is just a theoretical migration policy. The idea was developed in the 1970s, arguing that more developed countries should compensate financially (or in other ways) for less developed countries severely affected by brain drain.
5. *Expatriate resources (diaspora options)* - this policy is mainly used for skilled migrants; can be attracted to initiatives initiated by the government or the business sector to help networking, knowledge transfer and so on.
6. *Retention* - through education policies and economic development, skilled workers voluntarily decide to stay in the country. Re-employing workers to prevent their emigration is a crucial tool in these policies, especially in crisis-affected regions.

Among the policy classifications mentioned above, it is important to emphasize that the link between migration and development is a much debated issue. In public opinion or political discussions, it is quite frequently pointed out that immigration impedes economic development in the countries concerned and contributes to increasing social tensions (ILO 2010b; United Nations 2013). However, as the findings of an OECD study (OECD 2013) show, immigrants can make a significant contribution to economic growth and, in some cases, even contribute to reducing wage inequality and can be a significant driving force for innovation and entrepreneurship. (Ottaviano and Peri 2012).

RESULTS AND DISCUSSIONS

Returning migrants represent an invaluable demographic and economic potential that contributes to the country's development. They can act as catalysts, as they often return with innovative human, financial and social capital. Successful reintegration of migrants in their countries of origin is a key element in contributing to the sustainability of return. In some cases, policies have interconnected objectives - for example, encouraging return migration and maintaining internal labor in the country (retention).

In recent years, the Government has created an institutional framework by launching a series of mechanisms to support migrants and attract remittances to the economy of the Republic of Moldova. There is currently an institutional framework that supports migrants, including government authorities such as the Ministry of Labor, Social Protection and Family, the Office of Migration and Asylum, the Ministry of Economy, the Ministry of Foreign Affairs, supported by the country's development partners and Diaspora Associations.

On May 20, 2014, a new Action Plan was adopted to support the reintegration of returned citizens abroad for the years 2014–2016 instead of the previous one (Action Plan to stimulate the return of Moldovan migrants abroad, Government Decision No. 1133 of 09.10.2008). The Action Plan includes nine detailed objectives and actions, which aim at developing the legislative, institutional, informative framework to facilitate the integration of returnees; facilitating integration into the labor market; developing the entrepreneurial skills of migrants; supporting the reintegration of returned migrants into the education system, and into the healthcare system, etc.

On August 23, 2017, the Government approved the Action Plan for 2017-2020 on the reintegration of Moldovan citizens returning from abroad. The document aims to develop programs and services for Moldovans returned from abroad, by providing the necessary support for reintegration. Among the actions envisaged in this regard are: diversification of measures and improvement of school (re) integration services, programs for young people and the elderly, as well as employment measures.

The Inter-Ministerial Committee in the field of diaspora, migration and development was also set up and the mechanism for coordinating and implementing state policy in the field by the central and local public authorities was approved. Thus, the responsible institutions will apply the integrated approach of the field of diaspora, migration and development in the activity programs and will evaluate the migration impact. The purpose of the approved documents is to ensure the effective implementation of the policy in the field, to contribute to the increase of the positive effects and to the reduction of the negative effects of migration [9].

At the same time, it is worrying that the number of emigrants does not know well enough the institutions or organizations that provide information or support on migration. We can attest to actions aimed at providing comprehensive information on legal migration to the European Union and existing opportunities on the Moldovan labor market. Thus, in the projects within the Mobility Partnership, all mass communication channels were used extensively, both at national and international level. The communication process also included networks and communities of Moldovans abroad, national and local authorities. Along with the online information tools (www.anofm.md; www.Jobmarket.gov.md; www.legal-in.eu; www.migratie.md, www.diaspora.md etc), within the project "Consolidation Moldova's capacity to manage the labor market and return migrants", implemented by the Swedish Employment Agency in collaboration with the National Employment Agency of the Republic

of Moldova (ANOFM), there was continuous information on legal employment opportunities. employment through the Labor Market Call Center (created on March 26, 2010), where every Moldovan, both from Moldova and abroad, can find out information about the possibilities of the labor market in Moldova.

The assistance provided to people who wanted to return from abroad was provided through programs and policies to correlate the knowledge and experience gained abroad with the demand on the local labor market. In this regard, in several European Union countries (for example: Italy (Rome, Padua), Germany (Nuremberg)) during the years 2010-2011, job fairs were organized for those who wanted to return home and work. work in Moldova.

The results of labor market information fairs in the Republic of Moldova remain an enigma, as there are no official data. If we operate with the data provided by the media, for example in the Labor Market Information Fair in the city of Padua, Italy organized on May 8, 2011, more than 150 Moldovan citizens participated [3]. According to the organizers, "the purpose of the Fair was to prepare Moldovan citizens, temporarily in Italy, to communicate with the authorities present at the information fair, as well as to inform about the current situation on the labor market in the country, about some real possibilities for reintegration. on the domestic market". Thus, we can conclude that the result of the labor fairs was not high.

The Government of the Republic of Moldova, with the support of the country's development partners, has launched a series of programs to stimulate the return of emigrants, their reintegration into society and attract remittances to the economy. Two of the important economic programs that visit to attract remittances in the economy are PARE 1 + 1 and PNAET.

The PARE 1 + 1 program [1], being successfully launched, in the period 2010-2012, being concluded 124 non-reimbursable financed contracts with entrepreneurs. At the same time, the investments attracted in the respective projects exceeded the amount of 76 million lei, the amount of transferred grants amounting to 19.60 million lei. In 2013, 170 non-reimbursable contracts were signed with emigrants or their relatives. Investments were made in agriculture, industry and services. The administrative impact of this option is quite small. The entity responsible for implementation-ODIMM, exists at the moment and has already accumulated the necessary good practices. Moreover, the continuation and expansion of the implementation of the PARE 1 + 1 program increases the credibility of the Government, which would become damaged if the program disappears. Although, the social impact of the option is positive. Investments typically result in job creation. It is difficult to calculate the exact number of jobs created, because the businesses in which it invests are very different in terms of labor intensity.

During the years 2011-2014, the "PARE 1 + 1" Program was financially supported by the European Commission, through the Policy Matrix for the sectoral support program "Economic Stimulation in Rural Areas" (ESRA) funded by the European Union. Following the completion in 2014 of the ESRA Program, as a continuation, its actions, including supporting the implementation of the PARE 1 + 1 Program, were taken over by the Policy Matrix on budget support provided by the European Union for the establishment of the Deep and Comprehensive Free Trade Area in the Republic Moldova, which provides for the financing of the program until 2018 inclusive, being extended until 2021. [1]

But slowly, as the plan expanded, creating jobs and new businesses to fill the economic gap left by the collapse of the Soviet Union, it became a role model. As such, known as PARE 1 + 1, a similar scheme is already being piloted in Tajikistan, where

remittances account for almost 30 percent of the country's GDP. Moreover, for the United Nations Migration Agency, such schemes are the best results for people to go home and invest enough hope, money and opportunities so that people do not leave. [4] As stated by Viorel Gutu, former Deputy Minister of Agriculture of Moldova. "We probably don't end all migration issues with it, but it contributes to the use of a population that could develop agriculture or other businesses in rural areas." [5] For her part, Pirkka Tapiola, Head of the Delegation of the European Union to the Republic of Moldova, said that the EU is impressed by the results achieved by our country in this program, the European Union being firmly determined to continue supporting this project in all its dimensions. [6] Currently, the PARE 1 + 1 Program has recorded the following results (see Fig.1).

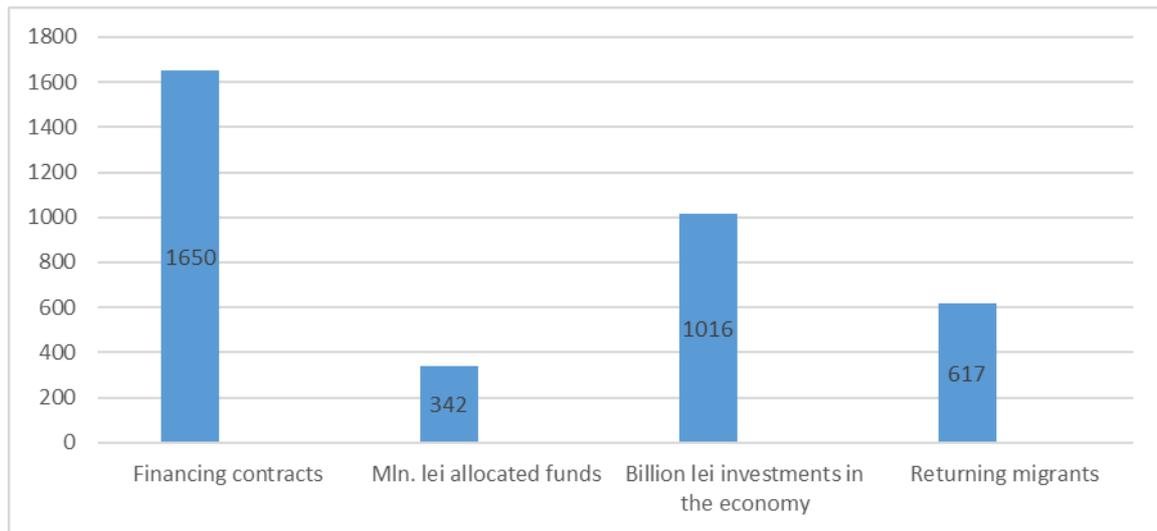


Fig. 1 Estimating the economic impact of the "PARE 1 + 1" option

Source: <https://odimm.md/ro>

Another option is to issue and sell bonds for migrants by transferring the funds obtained from their sale to the Regional Development Agencies for infrastructure investments. This option relates to the introduction by the Government and the placement by banks in the countries of destination of bonds issued for the diaspora that can be procured in the countries where migrants work, with the transfer of resources from Regional Development Agencies for investments in local infrastructure projects and business support, inclusive in agriculture.

Theoretically, the Republic of Moldova could introduce this tool because it has numerous diasporas in some cases and well organized, such as the one in Italy, the Russian Federation. This public policy has been successful in Israel, Ethiopia and India and could be implemented in the Republic of Moldova, if it is well thought out. The funds obtained could significantly increase the national public budget, which could be channeled for investment purposes. One possibility would be the transfer of these means to the Regional Development Agencies, which would allow the realization of infrastructure projects, such as the extension of aqueduct and sewerage networks in rural localities, the development of alternative energy sources, etc.

The Government of the Republic of Moldova will have to guarantee the risks of the emigrants who will invest in the respective obligations. The Government is also to establish cooperation agreements with several banks in Italy and Russia, as local partners. The Ministry of Finance will manage the entire process of issuing and repaying the bonds and transferring the funds obtained in the Regional Development Fund. The Diaspora Relations Office will

ensure communication between the NBM, the Government and Moldovan organizations abroad, facilitating the information and popularization of this financial instrument among emigrants. Although, the social impact cannot be quantified, but the elements of this option suggest that the social benefits will be indirect. By offering the emigrant the opportunity to contribute directly to the country's development, jobs will be created, involving some of the potential emigrants in the labor force from the Republic of Moldova, the income of the population will increase and the level of poverty will be reduced.

National Youth Economic Empowerment Program (PNAET), funded by the Government of the Republic of Moldova based on Government Decision no. 364 of June 3, 2008, with subsequent amendments to extend the action of the Program until 2017. Beneficiaries of the Program are individuals and legal entities young people working as entrepreneurs in all areas of rural areas aged 18-35. providing training in the field of entrepreneurial skills development, as well as financial assistance for starting a business. The sources of financing of the program being the funds of loans and external state grants of Investment Projects for development, re-accredited by the Ministry of Finance of the Republic of Moldova. During the implementation of the program, about 5,000 young people from all districts of the country, including 2223 women, received training; [2.p.44]

The START FOR YOUTH program - A SUSTAINABLE BUSINESS AT HOME, aims to stimulate entrepreneurship and encourage business initiatives in a modern economy where creative young people can increase their competitiveness, keep up with technology, and are motivated to bring a plus financial security. Eligible are young people aged between 18 and 35, citizens of the Republic of Moldova, who want to start a business or who already run a new business - registered in rural and urban areas. Currently, the Program has recorded the following results (see Fig.2).

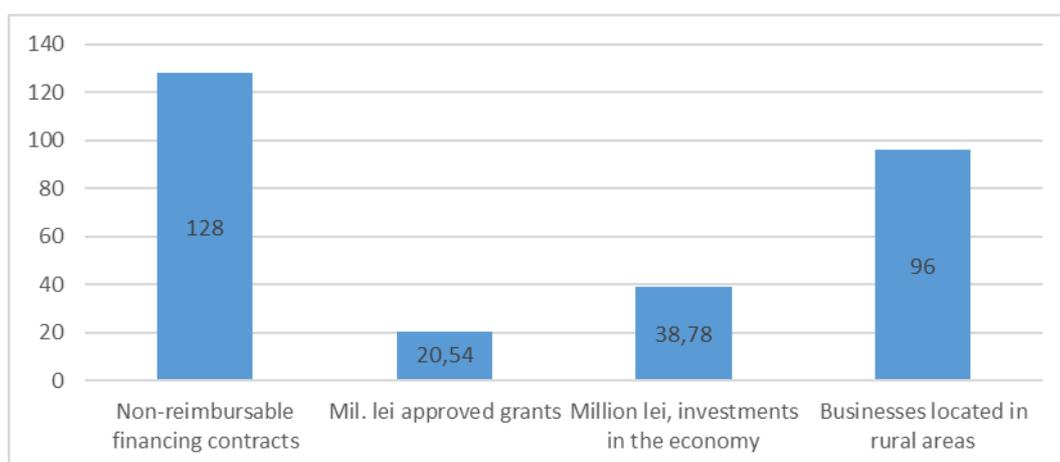


Fig. 2 Estimating the economic impact of the "START FOR YOUNG PEOPLE - A SUSTAINABLE HOME BUSINESS" option

Source: <https://odimm.md/ro>

Based on the experience gained so far, of the emigrants - *THE CREDIT GUARANTEE FUND*, it expands its quality of support for entrepreneurs, by participating in programs for the implementation of economic policy in the Republic of Moldova. Pursuant to art.13 par. (5) of Law no. 179/2016 on small and medium enterprises (Official Gazette of the Republic of Moldova, 2016, no. 306-313, art. 651), the Government tests the Regulation on the organization, operation and use of the Credit Guarantee Fund for small and medium-sized

enterprises medium sized. [7] Currently, the Program has recorded the following results, (see Fig.3).

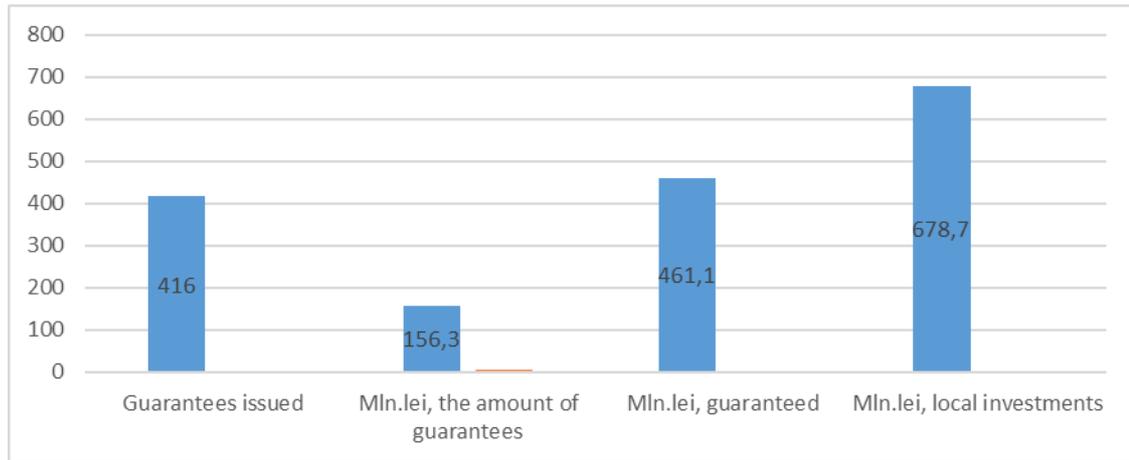


Fig. 3 Estimation of the economic impact of the "LOAN GUARANTEE FUND" option

Source: <https://odimm.md/ro>

Moldova's economy can also be led by women - with emotional intelligence, attitude and total involvement. *The WOMEN IN BUSINESS* program has the ability to reduce gender inequality, can help women gain managerial skills through business development, mainly in rural areas, can increase their access to modern resources, services and technologies. Currently, the Program has recorded the following results, (see Fig.4).

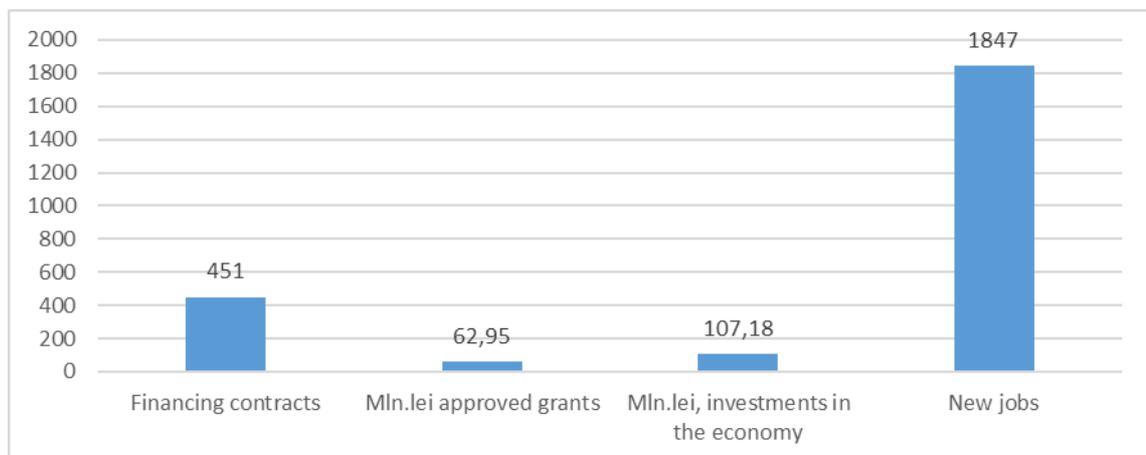


Fig.4 Estimating the economic impact of the option "WOMEN IN BUSINESS" program.

Source: <https://odimm.md/ro>

The Organization for the Development of the Small and Medium Enterprises Sector (ODIMM) is delegated by the Government, through the Ministry of Finance, to issue guarantees in the name and on behalf of the state, in favor of creditors (financing banks), which grant mortgages to individuals for the purchase of a home. accepted under the State Program "FIRST HOUSE". [8] However, the Program has a social character, represented by the state intervention in the process of guaranteeing loans to individuals when purchasing a home. List of Financing Banks:

1. BC „MOLDINDCONBANK” SA
2. BC „MOLDOVA-AGROINDBANK” SA
3. BC „VICTORIABANK” SA
4. “MOBIASBANCA – OTP GROUP” S.A.

5. BC „EXIMBANK” SA

In the 2 years of the Program, 4296 individuals have already benefited from partially state-guaranteed mortgages, including young families. The total amount of loans granted by banks is over 2.1 billion. lei, and the value of active guarantees is 1.1 billion lei. [12].

A project with a major impact is the project launched by UNDP "Integrating Migration into Local Development" (MIDL), which involves empowering and mobilizing migrants for sustainable local development. This project is part of a multi-annual intervention of the Swiss Agency for Development and Cooperation (SDC) in the field of migration and development (M&D) and is implemented in partnership with two other projects by the Mission in Moldova of the International Organization for Migration and Agency International Organization for Country of Origin Information (IASCI / NEXUS). The project "Migration and local development" has as main objective the assistance of communities affected by migration in order to improve local services (water supply and sanitation, social services, education and health), as well as access to income-generating opportunities (re-employment, supporting business development), is implemented between 2015 and 2018 in partnership with the Government of the Republic of Moldova, local public authorities, local non-governmental organizations, the private sector, the population, including migrants from target communities. In total, 40 villages and towns from the entire territory of the Republic of Moldova are part of the project (25 in stage I and 15 in stage II) [10].

Actions aimed at strengthening ties with diaspora representatives have also been taken by the Moldovan authorities, which have so far established links with 60 Moldovan Diaspora public associations in 21 countries. Most public associations are registered in Italy (20), Ukraine (14), the Russian Federation (11), the French Republic (6), the Portuguese Republic (4), Canada (3) and the USA (3).

Within the Mobility Partnership European Union - Moldova, associations from the Moldovan Diaspora around the world had the opportunity to successfully initiate and implement various initiatives and projects aimed at helping to strengthen communication and good relations between Moldova and its citizens. abroad. Among them we mention the creation of the Center for Moldovans in Paris, opened in October 2011 and intended to offer migrants a series of services in information, training, consultancy and vocational guidance and cultural integration. Thus, more than 30 types of magazines, newsletters and newspapers with a circulation of about 50,000 children were produced, published and distributed among Moldovan migrants in Italy, Ukraine, Portugal, France and England. A special edition of the "Pro Diaspora Kids" newsletter was produced by the Portuguese Diaspora Association, and was launched on June 1, 2011 to mark International Children's Day.

Launched in October 2010, the Diaspora Small Grants Mechanism has aroused the interest of more than 35 Diaspora Associations from different countries, such as: Czech Republic, Canada, Belgium, France, Germany, Greece, Italy, United Kingdom, Moldova, Russian Federation, USA, Ukraine and Sweden. Out of a total number of 35 applications, the 10 most successful projects were selected by the Selection Commission, composed of representatives of the Ministry of Foreign Affairs and European Integration of the Republic of Moldova, the Bureau of Inter-Ethnic Relations and IOM.

The range of problems facing this group of returnees is a new challenge for the social services system. In addition, we point out that the return of migrants in a state of vulnerability is an issue that highlights the need for development and cooperation between the migrants' country of origin and destination countries. The governmental authorities of the Republic of

Moldova have developed a draft Repatriation Agreement for migrants in difficulty, victims of trafficking in human beings and unaccompanied children abroad, which they have sent to the authorities of the countries from which most migrants are repatriated. difficulty - Russian Federation, Ukraine. The Moldovan authorities have reported that the current mechanisms in the field of repatriation with ex-Soviet countries are outdated and make the repatriation procedure difficult. In Moldova, we are currently witnessing the reform of the social protection system, in terms of deinstitutionalization. Repatriated migrants in difficulty who have received assistance in residential institutions, for a maximum of 6 months, must be integrated in the community, society. Currently, in the Republic of Moldova there are social services that meet the needs of adults in difficulty. However, the reform of financial and administrative decentralization raises the issue of maintaining the services created. A major risk for social services is their closure by the local public administration, due to lack of financial resources. This causes impediments in the social inclusion of repatriated migrants in difficulty, because some of them have lost relations with the family of origin, with relatives.

Currently, there are few institutions in the Republic of Moldova that provide services for migrants in difficulty: the Center for Assistance and Protection of Victims and Potential Victims of Trafficking in Human Beings (CAP) (Chisinau Municipality), Homeless Service, Chisinau Municipality, Center "SOTIS" family crisis center, Balti, "Return" Accommodation and Adaptation Center for the Homeless, Balti municipality and the Emergency Placement Service for returned migrants in difficulty and people in crisis. Only the last service targets repatriated migrants in difficulty and returning from abroad.

Successful management of migration depends on labor market policies, social policies, measures to ensure the integration of migrants and quality public administration. Public policy can influence the nature and demand-attract and supply-push interaction to achieve the country's migration goals. The Government of the Republic of Moldova has started to develop actions for the return of migrant workers and to optimize their reintegration in the country of origin. Also, a priority for migration policies remains the direction of investing remittances towards a balanced development in the interest of the migrant, the community and for the development of the whole economy.

In order to facilitate legal migration, including circular and temporary migration, a Joint Declaration on the Mobility Partnership between the European Union and the Republic of Moldova was signed in June 2008. One of the most important priorities addressed by the Mobility Partnership is to strengthen the capacity of national institutions to manage the programs for the reintegration and return of migrants.

CONCLUSIONS

According to our analysis, relatively few national policies have been developed to deal with attraction and return migration so far. The relative lack of national measures seems obvious. Although, national policies and initiatives seem more appropriate to address the re-attraction of the workforce. Due to effective return initiatives, a competent institutional framework with a decentralized decision-making system is needed. Due to the relatively short time in which the analyzed policies exist, it is difficult to measure their success, but - based on the results of the policy responses already implemented - some conclusions can be drawn. Well-defined goals and target groups also seem to be important factors for success - without them there is a risk that the programs will become too general, without focus or real results.

However, so far there is little cooperation between the Republic of Moldova and the countries receiving migrants, which could be a useful tool to encourage return migration.

Brain drainage is and will continue to be one of the most important social problems of the Republic of Moldova. Therefore, we expect the number of policy measures to increase in the near future, and the experiences of existing measures will contribute to the formulation of more effective policy actions. However, analyzing recent policies, it seems that most actors neglect the heterogeneous nature of the connections between migration / remigration and development using a simplified and naive approach.

Due to the practically non-existent statistics for the Republic of Moldova, it is difficult to measure the extent of return migration. Despite the information services provided to potential returning migrants, information appears to be a weak policy element.

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DIGITAL CIRCULAR ECONOMY: REVIEW AND RECOMMENDATIONS

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ABSTRACT. This paper investigates and questions the liaison between circular economy and digital economy. To do so, review of definition of the circular economy and digital economy are combined with models and barriers to understand this emerging new concept – digital circular economy. On this basis, the models and recommendation were included in this paper. One of the main findings of this paper is that a country's economy must be analysed in the light of the digitisation of the circular economy. But for this to be possible, the two economies must be analysed together, holistically, as a whole – the Digital Circular Economy. The recommendations from the study of digital involvement in the circular economy would be: holistic thinking, establish framework for actions, use economic, strong partnerships between stakeholders, data standards.

KEYWORDS. *Digital circular economy, digital economy, circular economy, digitalisation, data, analytics*

Introduction

The world we live in is changing fast. One of the causes of course is population growth. Every week, the global population grows by 1.5 million people, 3 million people enter the middle class, 3 million people move from village to city.

This, of course, leads to an increase in the consumption of products - consumption of water, paper, automobiles, fuel, electrical and electronic equipment (mobile phones, refrigerators, air conditioners, network equipment), Internet traffic, etc.

Thus, consumerism characterizes modern society - especially the linear consumption of products, i.e. products are created, consumed - after which discarded (the model "take, make, dispose"). But there is growing talk of circular business models - the reintroduction into the economic cycle of waste that becomes resources.

Another cause of accelerated consumerism, of course, is digitalisation. Thus, we have access to more and more products, cheaper and more affordable as well as digital products, which we use daily – equipment (phones, computers, smart TVs, smart watches, smart homes, etc.) and services (Internet access, mobile phone, GPS).

All taken together bring an enormous burden on the environment, on the earth – if of course they are not used sustainably.

Circular Economy

The concept of circular economy is not a new term, it is over 50 years old and is influenced by Boulding's work [1] – which argues that for the economy and the environment to coexist in balance, the Earth must be seen as a closed loop system (or the closed economy of the spacecraft).

Although it has received special attention from academia, now there are more than 100 definitions of the Circular Economy, the most current and comprehensive is the following:

Circular economy - as an economic system in which resource input and waste, emission, and energy leakages are minimised by cycling, extending, intensifying, and dematerialising material and energy loops. This can be achieved through digitalisation,

servitisation, sharing solutions, long-lasting product design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling. [2]

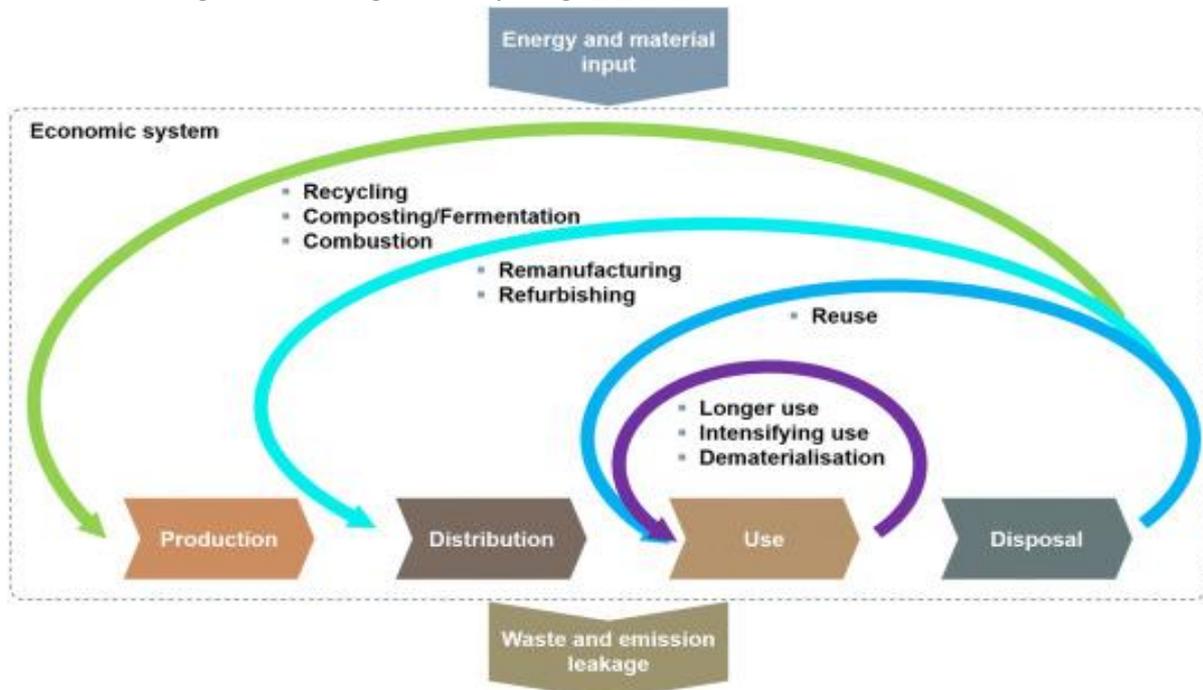


Figure 1. **Circular economy – actions to take** [2]

When we study the Circular Economy - the waste hierarchy is important - thus, at every level - concrete actions are implemented – reduction, reuse, recycling.



Figure 2. **Waste hierarchy** [3]

It is also necessary to know the life cycle of the product (and the constituent elements) – which must be extended to the maximum. Lifecycle assessment provides the most recognized method of quantifying the environmental impact of products, processes and/or systems. It highlights the environmental effects of a particular product throughout its life cycle, including the extraction of raw materials, the manufacture of materials and products, construction, use and end-of-life. And the Environmental Product Declaration (EPD) provides a standard way of communicating the results obtained from such a lifecycle assessment and allows the user to assess the environmental impact of the product used and make comparisons with alternative products. The EPD are based on the ISO standard on type III ecological declarations (ISO 14025), European standard EN 15804 (Sustainable development of

construction works – Environmental declarations for products – Basic rules for the category of construction products) and EN 15942 (communication format). The underlying LCAs comply with the principles of ISO 14040 and 14044 standards.

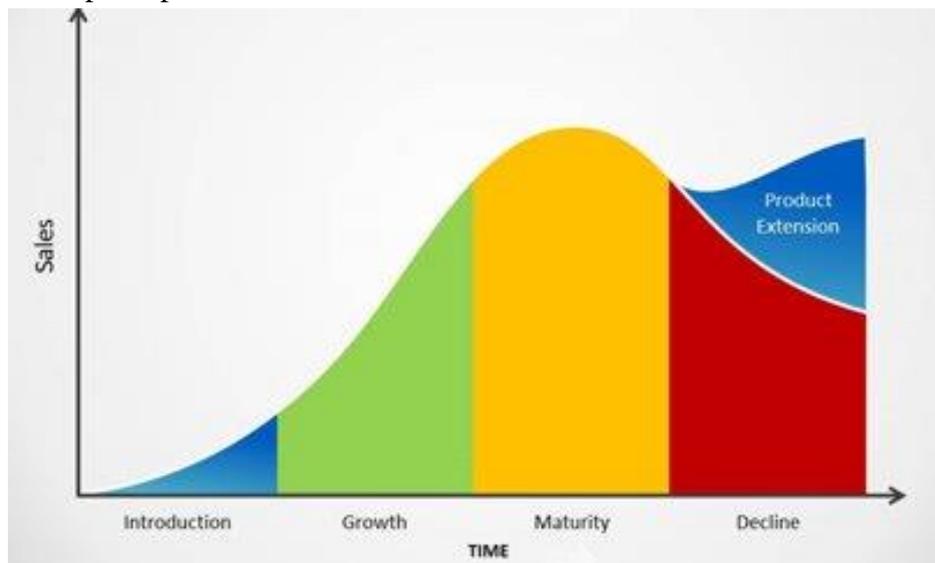


Figure 3. Life Cycle of the products

Of course, two simple concepts are presented above, but the reality is much more complex. Below is a model of the functioning of the Circular Economy presented by the European Environment Agency. It is therefore very complicated to implement actions on the Circular Economy – bearing in mind – that a systemic approach and long-term research is needed. A lot of DATA is needed.

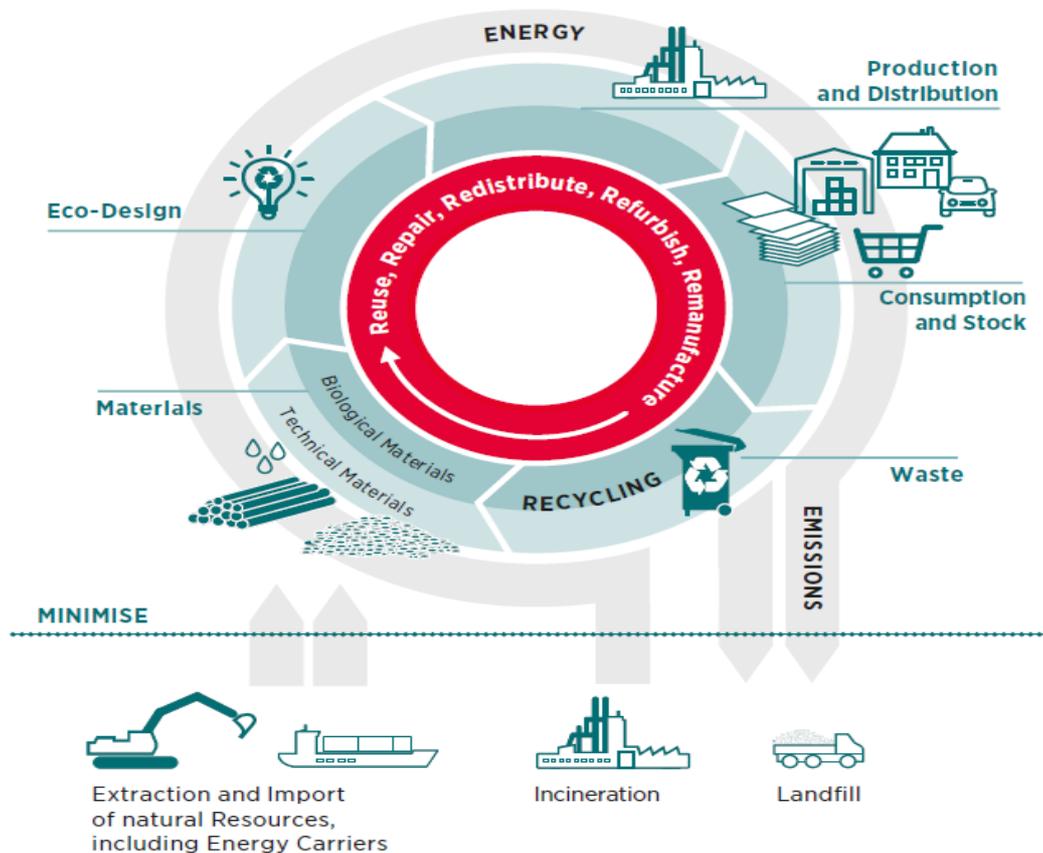


Figure 4. The concept of the Circular Economy

Source: European Environment Agency

Digital Economy

The Internet, broadband networks, mobile applications, ICT services and equipment are the foundation of the digital economy. And mobility, cloud technologies, social networks, sensor networks and Big-data analytics, AI are some of the most important trends in the digital economy today.

In common, these trends make possible a future where "everything is intelligent" (e.g. houses, phones, televisions, society, business processes, transport, government, energy) by empowering and empowering the business environment, consumers and society entirely

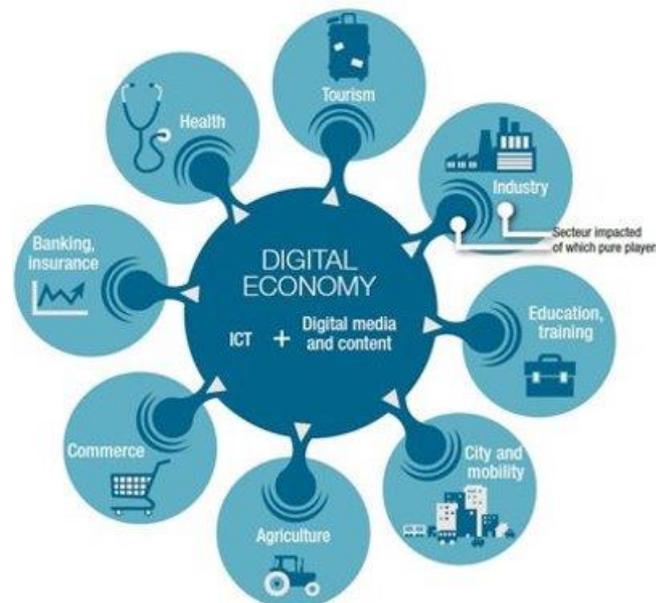


Figura 5: The digital economy and other sectors of the economy

Source: <https://www.osce.org/files/f/documents/4/f/392669.pdf>

The concept of the digital economy has evolved over time thanks to dynamism and the development of digital technologies. According to the Oxford dictionary – the digital economy is the economy that operates primarily on digital technologies, especially the digital economy is called the Internet Economy, the New Economy or the Web Economy. It is often perceived as doing business on Internet-based markets.

The internet economy can be identified as a broad set of the digital economy. The term Internet economy has been defined by the OECD as "the value of all economic activities that are undertaken with/and using the Internet". Technically, the digital economy is expanding a little further by including non-internet digital technologies.

Research methodology

Considering the development of the fields, the method was used from general to private. Method of analysis was based on data available in reports of institutions of profile, method of observation.

The previous sections have highlighted the definitions of the circular economy and digital economy; little attention has been devoted to the liaison between both definitions. The research objective it is to investigate both topics in literature.

Outcomes of the research

No other market benefits more from digitalisation such as the green services branch – it can become a decisive tool for disseminating and accelerating the field of green services and for new opportunities, through the prism of new business models. Digitalisation increases the incentives of companies to participate and can become a determinant enabler, by adoption of new technologies [4].

Today, more than ever, we are hearing more and more of the Digital Economy and the Circular Economy. But we need to look at them together – the Digital Circular Economy. Because the Digital Economy promotes inclusion, innovation, efficiency and automation, it can be used as a support, facilitator for the implementation of the Circular Economy, through digital technologies and data. This is because – as we know digitalisation is everywhere, in all sectors of the economy. And the two economies must work together and complement each other, they have to work hand-in-hand.

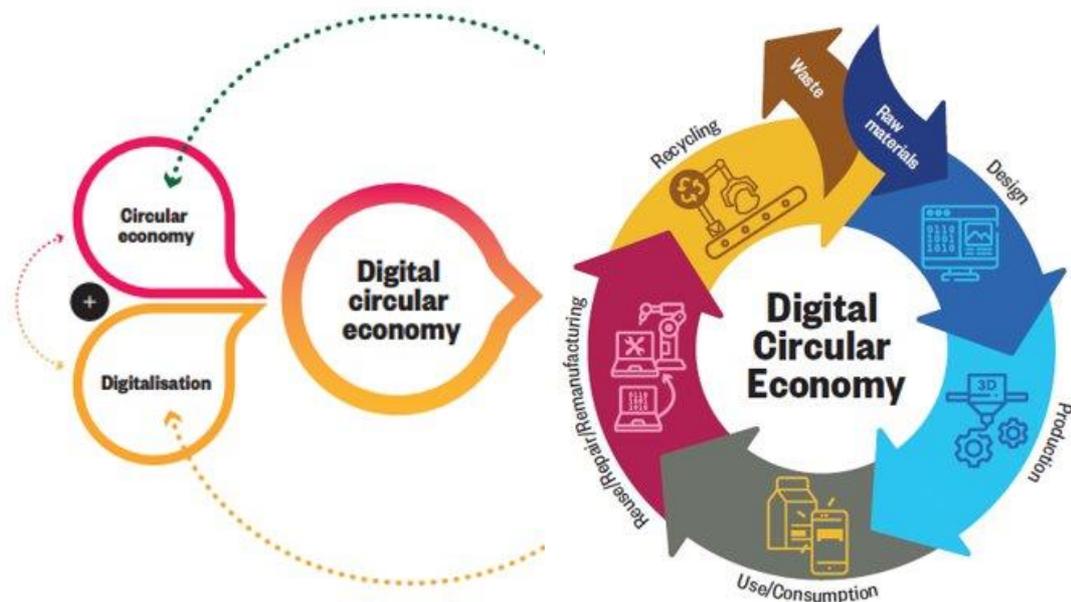


Figure 6. The concept of Digital Circular Economy [5]

However, the relationship between these terms is not an area of research explored widely due to the complexity of the circular economy and the novelty of research on digital technologies, and the literature still overlooks how digital technologies allow the transition to the Circular Economy [5].

The above statement is even more relevant to the investigation today in the context of digital business transformation. Indeed, a lot of digital technologies proliferate to support companies in managing the growing amount of knowledge and information flows captured and transferred within and beyond the company's borders, as well as improving process performance, redesigning the organizational structure and innovating business models. In particular, Business Intelligence and massive data analytics, the Internet of Things, Blockchain etc. and so-called "key facilitating technologies", such as micro- and nano-electronics, nano-technology, advanced materials, industrial biotechnology and advanced manufacturing technologies are nowadays causing radical innovations in industry and society. These technologies are characterized by trans-industrial application profiles, causing ubiquity

and rapid innovation cycles, new business models, the creation of new industrial areas and the structural re-foundation of existing ones, the continuous updating of competences at both individual and organisational levels. Therefore, these technologies are promising levers for promoting circularity in start-ups, SMEs, as well as for supporting digital processes by transforming and transitioning the business model to the Circular Economy paradigm [6].

The climate crisis, environmental challenges, lack of competitiveness and competition in terms of resources - the world faces multiple challenges that it will have to address in order to ensure long-term sustainable prosperity. At the same time, there are two ongoing trends in the economy - the creation of a circular economy and a digital transformation - that could provide the means to address these challenges if managed well. And digitalisation is a determining factor for the circular economy and the SDGs, in particular for The Sustainable Development Goal 12 – Responsible Consumption and Production, where the national policy framework can be further adjusted to the principles of a circular economy, sustainable consumption through understanding by Government, the business environment and the population [7].

The implementation of the circular economy is primarily an information problem or rather lack of data. The transition to a circular economy will be improved by coordinating material flows and information flows is essential for addressing the problems described.

The data must also be kept together with the materials in the cycle so that waste can become a processable resource. A key challenge in this process is to generate, collect, efficiently process and make available the volume of information about the composition of each individual product, its usage patterns, its location within the waste system, etc. All this is necessary to establish functional markets and cycles at the next stage. This will make effective, market-based solutions possible rather than just regulatory. Until now, it has not been possible to overcome much of this information deficit. However, the application of the elements of the digital economy could now offer exactly this solution - after all, in many ways it is primarily an information revolution. Therefore, the information can be considered as the "missing link" towards the implementation of the circular economy. [8]

Therefore, the Circular Economy – cannot rid itself of the Linear economy, and digitalisation will allow it to impose itself as the only solution for the new global economy. Starting with the birth of the product – until its death, everything must be conceived in the context of the digital and circular framework.

National and international institutions, as well as all stakeholders, must use governance tools and economic instruments to create the framework conditions for the transition to a modern economy – a circular digital economy that should be based on its strengths, including value-based, multidisciplinary approaches and technological knowledge. There should be a comprehensive scientific assessment and a clear set of indicators to monitor progress. One solution would be Digital Twin, which is to capture, structure and synchronize all product data from idea, design, manufacturing, launch, use, maintenance to decommissioning and recycling. Digital twins allow optimization of all phases of the product lifecycle [9].

Building on the single market and the potential of digital technologies, the circular economy can strengthen the EU's industrial base and stimulate business start-ups and entrepreneurship among SMEs. Innovative models based on a closer customer relationship, customisation of mass-produced products, participatory and collaborative economy, supported by digital technologies (such as the Internet of Things (IoT), high-data technologies (Big

Data), blockchain technology and artificial intelligence (AI)), will accelerate circularity and dematerialize our economy; as a result, Europe will be less dependent on raw materials [10].

CONCLUSIONS AND RECOMMENDATIONS

One of the main findings of this paper is that a country's economy must be analysed in the light of the digitisation of the circular economy. But for this to be possible, the two economies must be analysed together, holistically, as a whole – the Digital Circular Economy. Of course, in order to reach this goal, which is a modern concept, lobbied by the developed countries, it is important to research the Governance and capacity-building of both: people and institutions (state, private).

The recommendations from the study of digital involvement in the circular economy would be:

1. Holistic thinking – by defining a clear vision of the Digital Circular Economy
2. Establish framework for actions - using governance, policies and regulations
3. Use economic tools to stimulate and enable the transition to the type of economy you want.
4. Strong partnerships between government institutions, the private sector and citizens to achieve better results.
5. Data Standards – to analyse all this inputs data

Artificial intelligence and digitalisation have the potential to optimise the use of energy and resources and to provide information in support of circular business models and responsible consumer choices. However, a circular digital economy must have a net positive impact on resources and address substantial challenges, including the risk of fueling unsustainable consumer patterns, shortening the sustainability of smart products and compromising the security of sensitive business information [11].

Thus, the smart use of resources in the Circular Economy can be supported by the creation, processing and analysis of digitised data, and the digital transformation of processes will play a key and intensifying role in the transition to a circular economy that will bring more resilience and sustainable jobs, with the circular digital economy becoming a hallmark of a new economy after the COVID-19 pandemic period.

This study is the first step in trying to present information on the circular economy and the digital economy. However, further research is needed, especially with the government and private environment – in order to elucidate the best and most sustainable models of cooperation, so that synergy between the two stakeholders and the two economies is possible to achieve as efficiently as possible.

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THE IMPACT OF CRYPTOCURRENCIES ON THE ECONOMY

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ABSTRACT. In a world of technological growth, cryptocurrencies as a new generation means of payment and trade between economic entities are one of the most discussed topics of the XXI century. The entry of digital money into the economic space can be defined as a phenomenon that in the conditions of digitalization at national and supranational level are an innovation in the financial system. Globally, the rapid penetration of cryptocurrencies over the last decade has been seen as controversial in the public sphere. Digital money has many characteristics that distinguish it from traditional fiat money, and therefore economic entities focus on their implementation in the business environment. In connection with this ongoing interest, the present study aims to track and analyze the impact of digital money on the global economy. As a result of the rise of cyber technology, quite logically blockchain technologies and cryptocurrencies find many applications in the business world.

KEYWORDS: *cryptocurrency, economy, impact of cryptocurrencies, finance, innovation, bitcoin*

1. Introduction

In the financial and monetary system over the last decade there have been changes at the macro and micro level, based on which cryptocurrencies have become one of the most discussed and analyzed objects. Their uniqueness, expressed in decentralization, anonymity, independence from central banks, combined with the use of cyber technology, defined them as a phenomenon in the monetary system that won both many supporters and attracted the attention of critics. In this regard, cryptocurrencies have had an impact on economic ones at the supranational level.

2. Cryptocurrencies and their impact on the economy

The price of digital money is rising fast, but the same cannot be said for the whole world. If we stick to the statistics, we can point to Ireland as a developing European economy, where the “mining” of digital money is 116% of the total electricity consumption in the country. Again, the statistics show the UK, where consumption is much higher for Europe, but less than in China, the US and Russia. [1] The new policy introduced by the Facebook network prohibits the announcement of products and services related to cryptocurrencies, which led to a drop in the prices of most of them, as the value of Bitcoin fell below the level of \$ 10,000. [2]

Author analyzes using CoinMarketCap show that digital currencies such as Bitcoin and Ethereum have fallen to 25 and 34%, and that digital money trading itself is the penultimate because it cannot be guaranteed that the next day it will keep its value. The author believes that worldwide economic agents are divided into two, some believing that this is the end of cryptocurrencies, while others believe that this decline is normal and after that trade continues. The last opinion is related to the understanding among some banking circles that it would be good to introduce regulation in the sector. Attempts to target digital currencies to certain criteria, as in the banking sector, are unthinkable because they are new wild money and it is perfectly normal for them to have ups and downs. Everyone participates in the

exchange on their own and decides for themselves what to do, whether to participate at the moment or to wait, or not to participate at all at the moment.

Crypto markets are the place where the prices of digital money can fall by a pre-determined decision in order for certain crypto buyers to buy this type of financial products cheaper. It is important to never forget that this trade is very risky and can destroy the financial resources of the participants, but at the same time it can make them too rich. The understanding to predict the disappearance of digital currencies is related to the fact that governments and world banks are against decentralized currencies because they have no control over them. Exchanges are a place where digital money is evolving as it engages in buying and selling and trading. Currently, cryptocurrencies are not accepted by banking institutions and in this regard, leading banks in the United States, including Vank of America, Citigroup, PMorgan Group, have introduced restrictions and do not accept their cards to be used to purchase crypto resources. This practice has also been introduced by some banks located in the UK, such as Louds Viking Group, which do not allow this type of transaction to be made using their credit cards. [3]

Since 2018, the European Union has certain structures - the Observatory and the Forum, which apply project structures based on the blockchain chains, which provide security opportunities and monitor the financial transactions. It is possible that the introduction of digital technologies will have an impact on industries such as finance, energy, public services, healthcare, intellectual property rights, insurance and others. Participation in these new initiatives creates conditions for more profitable use of crypto technologies as they create conditions for security of financial transactions, avoidance of cyber fraud and use of a third party. [4]

Bitcoin as one of the most popular cryptocurrencies is also one of the most discussed in the public space. In this regard, prominent economists, including James Altacher [5], set out their position on the future development of digital money, namely:

- a cryptocurrency collapse in local digital currency from the South American region is envisaged, and the effect would be increased interest in buying Bitcoin;
- banks are expected to increase their interest in Bitcoin and pursue a policy of creating digital derivatives, similar to the Chicago Mercantile Exchange;
- given the volatile values of much of the digital money, Altacher expects only 5% of alternative cryptocurrencies to retain their value;
- it provides for an increased interest of the People's Republic of China in digital money. He believes that this interest will be dictated by their desire to create a centralized cryptocurrency that is competitive with the first cryptocurrency (Bitcoin);
- the main disadvantage of digital money is its decentralization and the possibility for speculative operations by their creators;
- envisages cryptocurrencies to have an impact on fiat money;
- it envisages the emergence of a state organization to exercise regulatory control;
- it envisages increased interest in cryptocurrencies by economic agents, which will lead to the emergence of crypto companies.

Based on what has been said so far, the author believes that in the modern century any new digital currency is difficult to perceive and especially the so-called cryptocurrencies, which are independent of banks, creating conditions for their elimination in public life, can hardly be seen as positive, but the truth is that these so-called cryptocurrencies have many

functions, namely to be like vaults. Their decentralization and anonymity can be seen as a positive and a negative feature. The author agrees that the mass consumer does not perceive digital money because he is accustomed to some material, monetary image, which cannot be realized with digital money. Cryptocurrencies provide an opportunity for cash flow between consumers, without the participation of the central government, which is why it is difficult for people to know what exactly this digital money is. New virtual coins, known in the public domain as ICOs, are banned in a number of countries because they are not sufficiently studied and therefore investors and consumers must first study their sustainability. Analyzing the functions of the coins available in cyberspace, it can be argued that not everyone would find real application in our daily lives. For example, the digital cryptocurrency, Bitcoin is used to perform transactions for payment purposes, and as Ethereum has value.

On the other hand, it must not be forgotten that in the digital world of cryptocurrencies, money as “money” is ambiguous. They are an alternative in the future, but it would be difficult to predict the question of their potential and how central banks would react. Their limited quantity, as with Bitcoin and most alternative cryptocurrencies, makes it difficult to make quick transactions, which distances them from fiat money.

Incredible cryptocurrencies have an impact on economic development on a global scale, and in this regard, the International Monetary Fund (IMF) announced in the public domain information on a recommendation to the banking sector to review options for investment in digital money. The sphere of the banking system will lead to a new market - a market for cryptocurrencies, which is associated with raising new financial capital, attracting new companies and investors of a new generation, with creative thinking, new fresh ideas for the introduction of digital money. of cryptocurrencies by the financial institutions of the countries the following possibilities for regulations can be considered:

- introduction of enhanced controls and possible sanctions in order to limit activities related to the so-called Dark Net system, which is used as a method of financial incentives for terrorist organizations, the purchase of weapons, drugs, money laundering and other activities related to illegal acquisition of goods and services. The idea of the possibility for central banks to create their own alternative digital currencies is also spreading in the public space. This idea is discussed by the central banking systems of the ECB, Sweden, Great Britain, Canada and others.

The author believes that cryptocurrencies with their uniqueness and innovation have had an impact on the world as they are the only new type of payment method that is not subject to control and regulation by governments and the banking sector. The uniqueness of the new generation of digital money comes from the fact that they unite a specific group of economic entities, namely people with interests in information technology and cyber security, who perform the functions of the so-called. “Miners” of virtual cryptocurrency. It follows that cryptocurrency trading can be considered one of the riskiest, because on the one hand counterparties are always at risk of cyber fraud, and on the other hand there is always a risk of losses if the value of the currency changes sharply in the direction of reduction. In addition, he believes that this may be due to the fact that digital money is still a new phenomenon, which is interconnected with online and Internet services. It should not be forgotten that when they were created, they had a predetermined amount of coins and could not be changed later. This also protects them from inflation, because their price is formulated on the principle of supply and demand of the respective digital currency, and when their quantity decreases, this demand becomes more difficult.

The emergence of the first decentralized cryptocurrency coincides with the beginning of the global crisis, namely 2008. Whether it is a coincidence can not be said, but it is a fact that cryptocurrencies have an impact on the economy globally. Despite its controversial status quo, many supporters and those who reject it, it is a fact of public and public life. It is the US regulatory authorities, as an economic giant is defined as a commodity, and on the other hand on the Old Continent, the European organization is classified as a type of asset. According to the author, this can be considered an achievement because every banking institution at the macro and micro level has a position on digital money, explores ways to apply it in its structure in order to attract new investors or denies it.

From what has been analyzed and presented so far, the author is of the opinion that until recently, economic agents did not consider Internet technologies a necessary resource, but he quickly managed to gain their trust and became indispensable for society. In fact, the Internet and online services, in addition to being related to cryptocurrencies, are similar to them because they both offer the ability to make instant transactions and send information. If the Internet as a system is a protocol, ie. there is a legal framework for information transfer, the technology on the basis of which cryptocurrencies are developed, Blockchain can be defined as a chain of block data, performing the functions of a protocol for exchange and transfers, including the use of credit and debit cards such as MasterCard, Maestro, Visa, PayPal and others. Viewed in this way, through digital money, society has the opportunity to make instant transactions from a distance, which saves time, which directly turns them into a potentially revolutionary type of payment system.

In fact, Bitcoin has had an impact on the economy since its inception, as it rose dramatically between 2009 and 2013, reaching values above \$ 1,000 per unit. This seemingly new and uncertain currency has changed the lives of many people, increasing their financial capital. Of course, many economic agents did not take the opportunity to buy units of cryptocurrency and failed to increase their wealth. When cryptocurrencies appeared on the financial scene, they made an innovation, avoiding the third party (intermediary) in financial transactions, which is the main distinguishing feature from the banking sector. Due to this, due fees are charged, which are charged when making international transactions and payments.

The lack of a mass market, where to perform operations with virtual money is still missing, in this regard, the author determines a certain profile of both individuals and their functions, namely:

- the decentralization of cryptocurrencies restricts them in trade because they are not generally accepted;
- economic agents must have knowledge of the Internet and online services;
- trading takes place in cyberspace, which makes them inaccessible to some potential investors;
- excluding the possibility of speculation, their price is guided by the principle of supply and demand, which makes their value unstable;
- their anonymity is a prerequisite for creating conditions for criminal acts.

The advent of digital money has shown society that the traditional fiat money we are used to has not been enough for individuals. The need for a new, innovative and evolutionary method of payment that is not tied to a third party intermediary creates cryptocurrencies. In them, economic agents see a way to save money, ignoring the functions of intermediaries in

the face of the banking sector, and imposing independence on their financial resources, limiting the control of regulatory authorities.

The author is of the opinion that the control imposed by banks and state bodies on bank accounts and cards (debit/credit) carries the danger of the possibility of blocking the amounts, which does not allow us to fully manage our own funds. In fact, money should provide the freedom to operate, but there is a monopolization of the banking and public sectors. Money should be based on public trust, but where it is lacking it becomes a piece of paper/metal. These restrictions can be seen as a reason for society to create digital money by limiting the control functions of third parties, while maintaining the integrity of the financial investments of economic agents.

The global pandemic of 2020 can be seen as accelerating the digitalisation process. In practice, we are witnessing a change at an unprecedented rate in many sectors: financial, banking, education and others. There was the emergence of economic crises, a decline in the price of many fiat currencies. Reduced consumption, closed businesses, lack of physical customers, etc. But there is another phenomenon, namely the decoupling of the pandemic related to COVID-19 and the value of cryptocurrencies. In this regard, the countries of the Old Continent, including France, Germany and Spain, have set up regulatory commissions to monitor trade through digital money, following in the footsteps of creating a regulatory framework and rules when using this new type of payment method. It follows that it is not excluded that digital money may be considered as an option to preserve the value of the exchange unit and prevent inflationary shocks.

Mastercard, in line with new trends and the changing micro and macro economic environment, has enriched the Accelerate application and created an opportunity for crypto payments. [6] They also develop opportunities to provide protection against cyber attacks and third-party interference. In this way, the company aims to attract new consumer financial capital, increase its popularity among both proponents of virtual money and economic agents, who want to carry out activities to buy and sell goods and services in cyberspace.

Following the same line of action, Visa has created plans that offer cryptocurrency payments. [7] This will make it easier for consumers to make payment transactions and increase the company's popularity globally. Its policy is in response to the emerging crisis following the COVID pandemic. Cryptocurrencies have created the option for us as investors to be able to create our digital money with the help of cyber technologies. This is an option different from the one offered to us by the traditional fiat money, namely to receive financial resources by carrying out labor activity. The society of the XXI century, in which internet technologies play an important role in their daily lives, is able both to create crypto money and to carry out activities for the purpose of buying and selling goods and services desired by them. Their participation as investors and consumers for more than a decade has influenced the economic development of the world at both national and supranational levels.

3. CONCLUSIONS

In a world of innovation and a rapidly changing macro and micro environment, cryptocurrencies occupy an important place in the public space. Their uniqueness has made them one of the most controversial topics in our society. From the advent of the first decentralized cryptocurrency to the present day, digital money has come a long way and undergone many changes. It is an indisputable fact that they are inextricably linked to the Internet and cyber technologies, which naturally makes them an easy and preferred way to

pay and carry out financial and commercial transactions in the 21st century. Cryptocurrencies have an impact at the macro and micro levels on the political, financial and social scene.

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INTERCULTURAL “DIAGNOSIS” OF MANAGEMENT IN THE REPUBLIC OF MOLDOVA ACCORDING TO GEERT HOFSTEDE MODEL: COMPARATIVE ANALYSIS

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ABSTRACT. High rates of scientific and technological progress, computerization, globalization and internationalization of the world economy leads to the approach and interpenetration of business from different national cultures. The present paper is the “radiography” of the national culture in the Republic of Moldova according to Geert Hofstede theoretical model. Also, it identifies the variation and peculiarities of national culture dimensions: power distance index (PDI), individualism versus collectivism (IDV), uncertainty avoidance index (UAI), masculinity versus femininity (MAS), long term orientation versus short term normative orientation (LTO), indulgence versus restraint (IVR) in the countries of our study, Republic of Moldova and its main business partners: Romania, Russia, Ukraine, China and Germany.

KEYWORDS: *Cultural dimensions, Geert Hofstede, exports, imports, international trade, management, national culture, Republic of Moldova.*

The importance of the research topic lies in the fact that modern society is characterized by a high level of scientific and technological progress, computerization, globalization, and internationalization of the world economy. The before mentioned fact leads to a specific approach and interpenetration of businesses in different national cultures. In general, the culture determines the basic values and attitudes of representatives of particular country and have a great influence on individuals' thoughts and actions, their attitude towards other people, legislation, work, manner of communication, also on leadership style. For the management of enterprises in the Republic of Moldova, this reality proves to be very difficult to analyze, because few studies have been carried out in this field in our country. Cultural diversity should not be seen as a constraint; it is just a consequence of the necessary adaptation to market developments. [3]

A modern manager needs to have not only specific professional skills but also intercultural competence. It is very necessary to study the culture of the representatives of other countries, to get acquainted with the specifics of their national mentality, their traditions and cultural characteristics in order to be successful in business on international level. Knowing and understanding national affairs, culture, typical patterns of organizational behaviour of people in different countries increases the efficiency of management, helps to avoid or to settle conflicts. Ignorance and failure of taking into account the national cultural component restrict the development of successful international activity. The effectiveness of entrepreneurship is impossible without mutual understanding and adaptation to the specific cultures of other countries. Awareness of intercultural components of management will help the development of companies in the Republic of Moldova and is extremely necessary to build and maintain long-term cooperative relationships with foreign business partners.

The aim of the paper is to identify the peculiarities of cultural dimensions of enterprise management in the Republic of Moldova and the countries, main international partners, according to the investments [5], imports [6] and exports [6], namely: China, Germany, Romania, Russia and Ukraine.

The model of national culture developed by Greet Hofstede consists of six dimensions: *power distance index (PDI)*, *individualism versus collectivism (IDV)*, *uncertainty avoidance index (UAI)*, *masculinity versus femininity (MAS)*, *long term orientation versus short term normative orientation (LTO)*, *indulgence versus restraint (IVR)*. The cultural dimension in his model represents an independent preference of individuals in different countries for a specific state of affairs over another that distinguish countries from all over the world from each other.

The methodological support of the paper is the comparative analysis of the cultural dimensions of the management of the countries with which the Moldovan enterprises collaborate.

As we can see in the figures below, the dynamic of trade (exports and imports) of the enterprises from Republic of Moldova shows the international contacts are in permanent growth, proving that managers have to deal with business representatives of other countries.

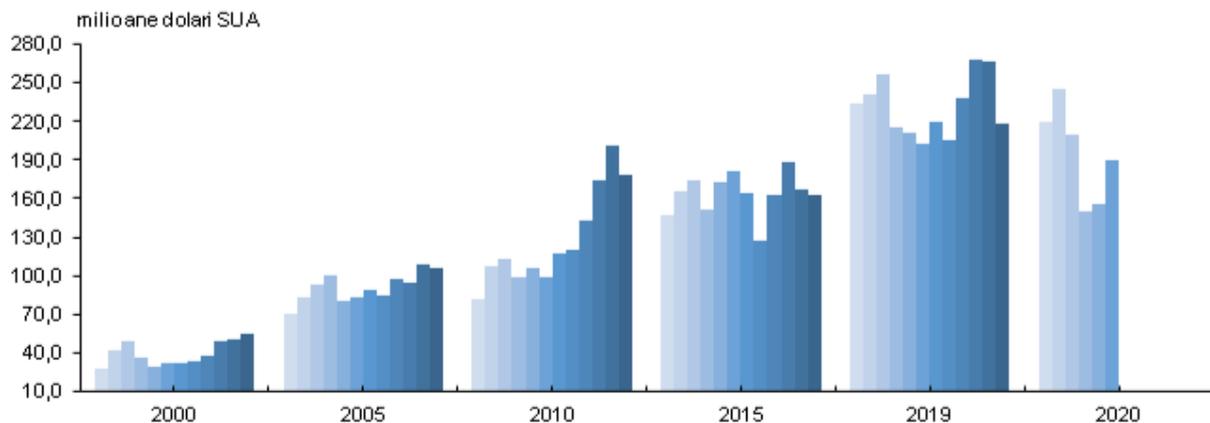


Figure 1: Evolution of exports from the Republic of Moldova (by years)

Source: External trade activity of the Republic of Moldova in January-June 2020

<https://statistica.gov.md/newsview.php?l=ro&idc=168&id=6730>

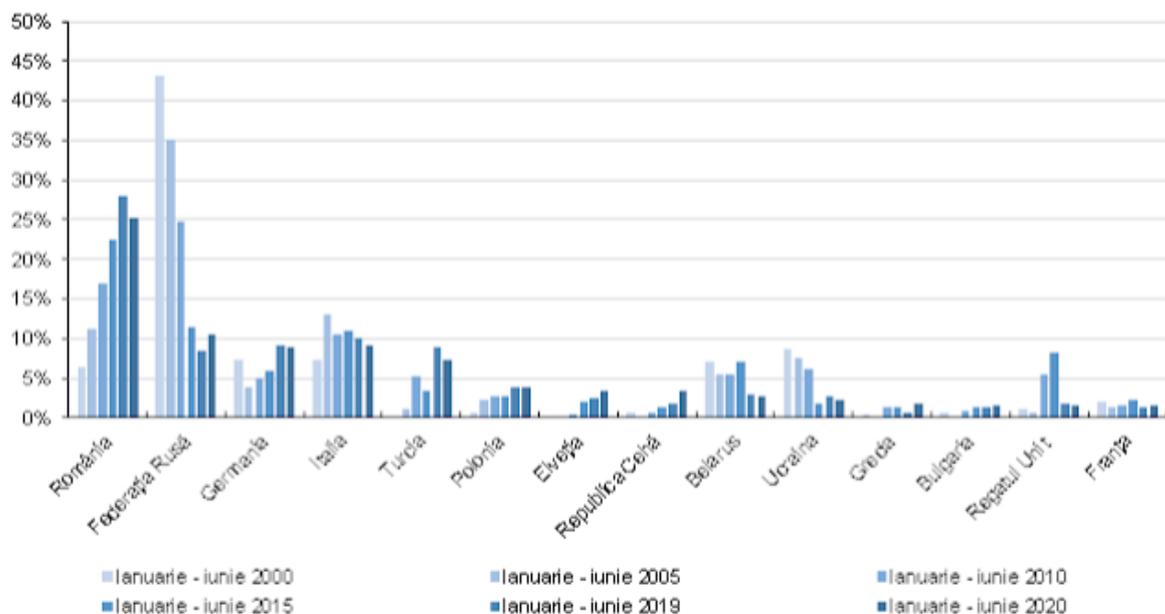


Figure 2: Structure of Exports from the Republic of Moldova (by countries)

Source: External trade activity of the Republic of Moldova in January-June 2020

<https://statistica.gov.md/newsview.php?l=ro&idc=168&id=6730>

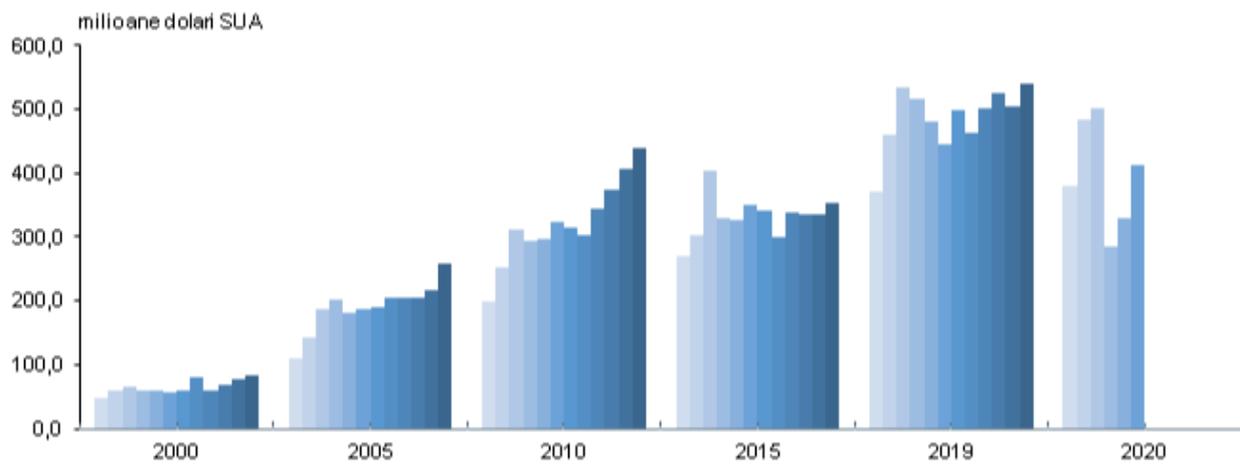


Figure 3: Evolution of imports to the Republic of Moldova

Source: External trade activity of the Republic of Moldova in January-June 2020

<https://statistica.gov.md/newsview.php?l=ro&idc=168&id=6730>

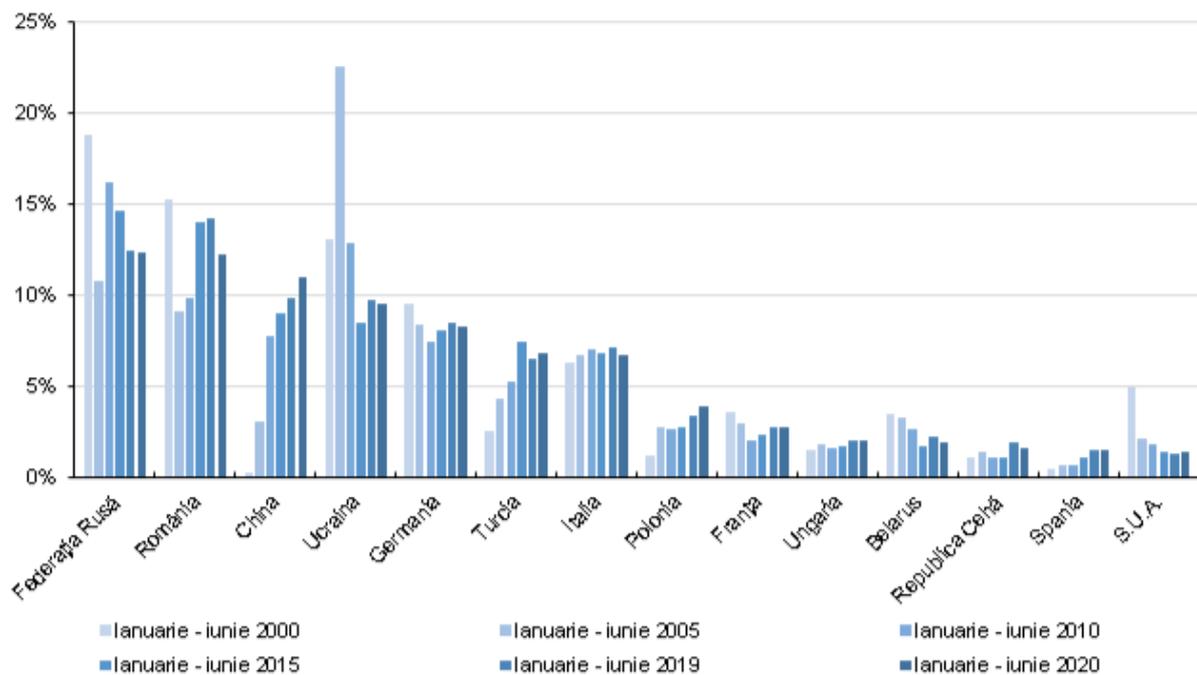


Figure 4: Structure of imports to the Republic of Moldova (by countries)

Source: External trade activity of the Republic of Moldova in January-June 2020

<https://statistica.gov.md/newsview.php?l=ro&idc=168&id=6730>

Main business partners in trade (export and import) with the Republic of Moldova are Romania, Russian Federation, China, Ukraine, and Germany.

Awareness of intercultural interaction principles will allow managers of enterprises from the Republic of Moldova to acquire specific skills and knowledge in the field of intercultural management, especially how to deal with managers from the above mentioned countries, representatives of particular cultures. These principles will permit the international manager:

- to coach information and knowledge about the diversity and characteristics of business cultures in partner countries;
- to promote the development of intercultural sensitivity and tolerance, professional managerial ethics;
- to develop the capacity to be flexible, to adapt to work with different business cultural environment;

- to analyse the national specifics of communication and motivation of particular countries;
- to be aware of the decision-making processes within the activity with representatives from various business environments.

The statistical data provided by the Department of Registration and Licensing of Legal Entities within the Public Services Agency indicates that the total number of enterprises with foreign capital registered in the Republic of Moldova is more than 11302. Most companies from the mentioned list are from Romania - 1746 companies, that represents 15,4% of the total number of foreign enterprises operating in the Republic of Moldova. Italy, Turkey, Ukraine, Russian Federation, Germany, USA, Israel and Cyprus have also considerably invested in our country. [5]

Wholesale and retail trade, transport and communications, processing industry, agriculture are declared the most popular type of activity in the majority of foreign companies registered in the Republic of Moldova. There are, also, companies in real estate or hotel and restaurant business. Others have chosen to carry out financial activities or construction. [5]

The idea Greet Hofstede's theory is based on the fact that values can be distributed across six dimensions of culture. These dimensions include such components as:

- power, including equality versus inequality;
- collectivism versus individualism;
- uncertainty avoidance versus tolerance for uncertainty,
- masculine versus feminine,
- strategic thinking,
- indulgence versus restraint. [2]

According to Hofstede, Power distance index (PDI) is the extent to which less powerful individuals of organizations and/or groups, such as families, expect and tolerate an unequal distribution of power. This dimension is not a feature of the level of power distribution in a given culture, but rather analyses its perception by individuals in a particular society. A low PDI indicates that the culture expects, accepts and promotes democratic relations with power, and the members of the society are treated as equal. A high PDI level shows that members of society with less power are aware of the existence of formal hierarchy and keep their lower level.

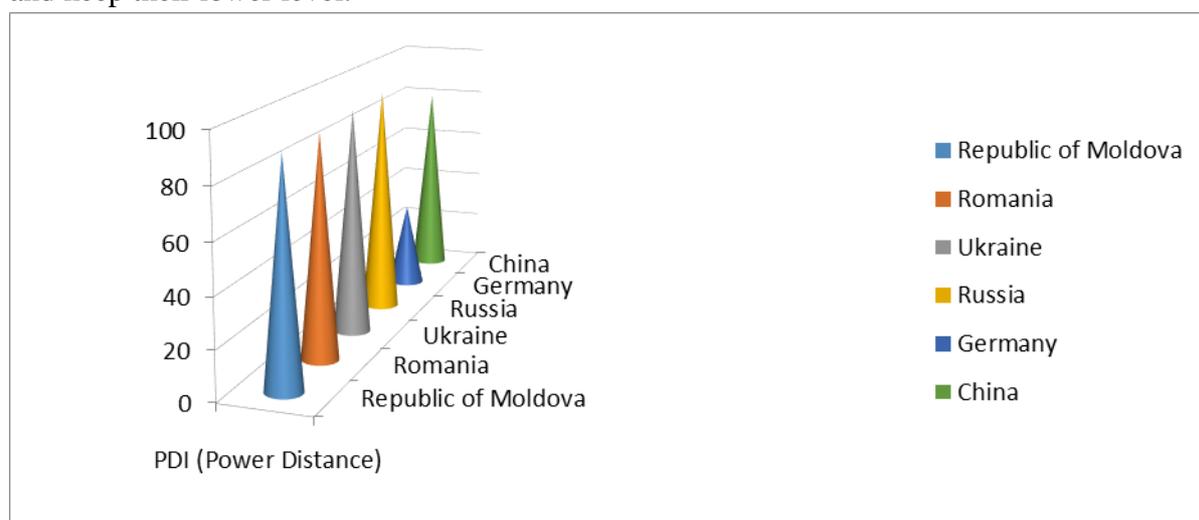


Figure 5: Power Distance Index (PDI)

Source: Author's compilation, based on <https://www.hofstede-insights.com/country-comparison/>

The obtained for Moldova PDI index, 90 points, demonstrates that our culture shows a high power distance index. Russia (93 points), Ukraine (92 points) and Romania (90 points) were to be expected to have similar with Moldova scores, due to the fact that we share a common cultural area and history.

In Moldova, as in most countries with high PDI, civil service is very highly rated. To work "in the office" is much more prestigious than to be a mechanic or engineer. Young people avoid attending vocational schools but prefer higher education for social prestige.

The tendency at work is to have a hostile and distant relationship between employer and employee. The boss being the decision-maker - the employees has to obey and execute. Employees are not involved in decision making. The boss has an authoritarian status. The surveillance staff is numerous. The hierarchy in organizations reflects the inequality between superiors and subordinates, and it influences very much the salaries they receive. [4]

Individualism versus collectivism (IDV) determines the degree of the tendency to form groups by the individuals of a community. This dimension has nothing to do with politics and more related to groups than individuals. In individualistic cultures the emphasis is placed more on achieving personal goals. In collectivistic societies, public goals and well-being are placed above personal goals.

As shown below, IDV index in Moldova, 17, is low, which denotes the specificity of our culture as being a collectivist one. It means that the relationship prevails over the objective within the enterprise. Employees prefer to develop and keep friendships at work, rather than set the professional goal that can threaten the relationship. The figure 6 shows that at a short distance from the Republic of Moldova are Ukraine (25 points), Romania (30 points) and Russia (39 points). The state has a dominant role in the economic system of these countries. People expect the state to settle the majority of problems and to manage the entire economic system rather than self-regulate in accordance with market rules. Citizens in these societies expect economic change to come from government structures rather than from themselves.

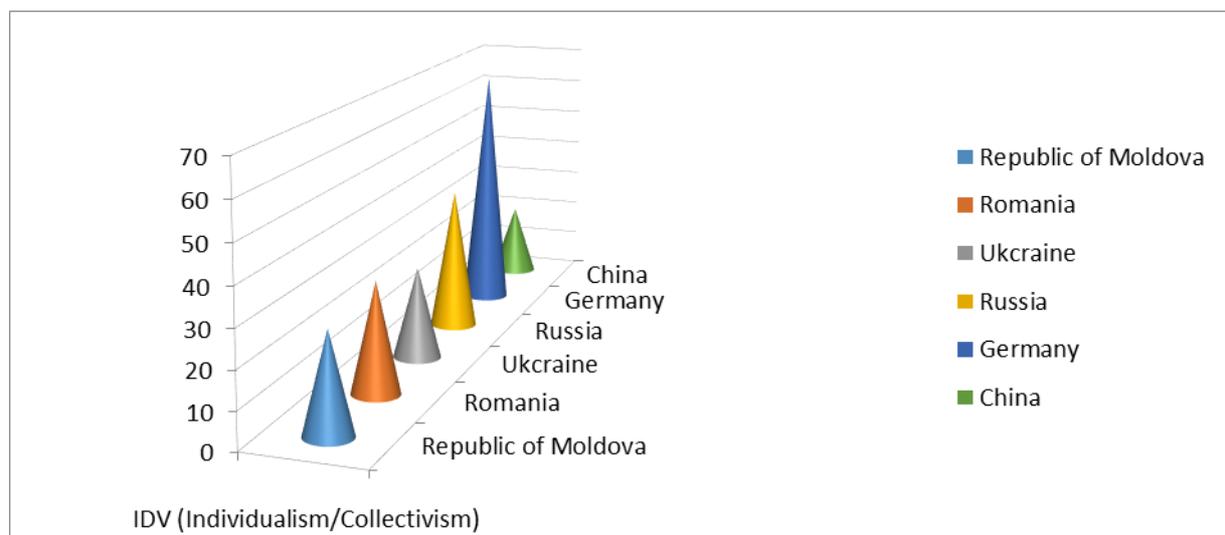


Figure 6: Individualism versus Collectivism (IDV)

Source: <https://www.hofstede-insights.com/country-comparison/>

Uncertainty Avoidance Index (UAI) indicates the level of tolerance to uncertainty and deviations in a specific society. This dimension characterizes the reaction of society to unknown situations, unpredictable events and the pressure of change. Cultures with high UAI index are less tolerant to change and tend to avoid the anxiety of uncertainty by establishing

strict rules, regulations and/or laws. Societies with low index of uncertainty avoidance are more open to change and use fewer rules and laws, and their customs and traditions are less strict.

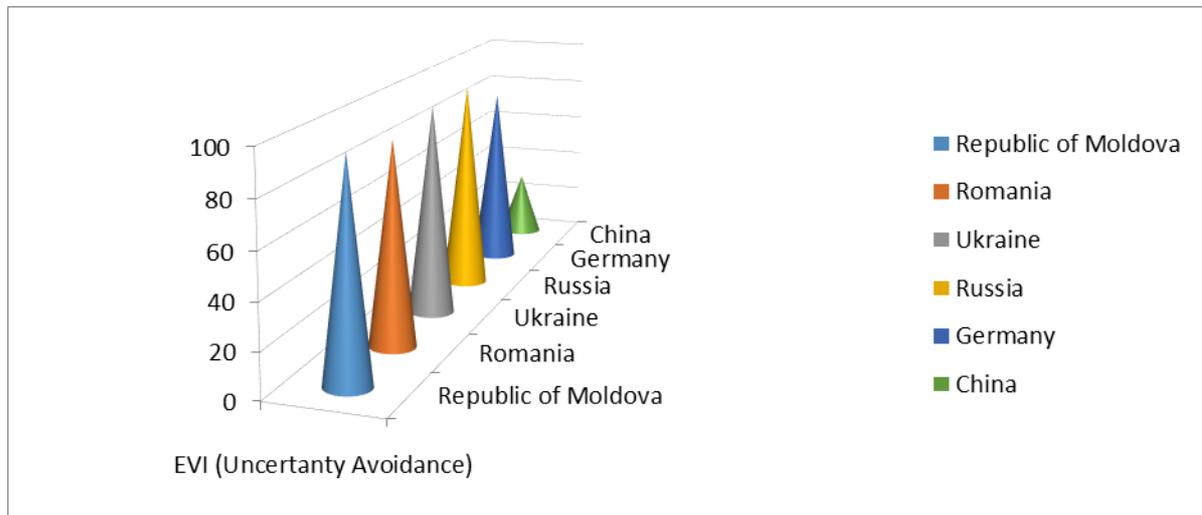


Figure 7: Uncertainty Avoidance Index (UAI)

Source: Author's compilation, based on <https://www.hofstede-insights.com/country-comparison/>

Moldova shows a negative ranking of the index UAI (95 points), together with Ukraine and Russia (95 points), Romania (90 points).

High level of stress and anxiety are the main indicators of Moldovan culture. Stress in everyday life, at home and at work, is a factor of the bad health condition of the population. Anxiety is the state of concern about what can happen.

Uncertainty is a permanent threat to Moldovans who express excessive concern about the unknown. Because of this reason, social, political and professional changes are rejected, innovations and reforms are avoided, there is a preference for already known practices and traditions, even if they are poorly functional or even dysfunctional. Traditions, precision and formalization, bureaucratic requirements, which are often unnecessary in terms of pragmatism, the exaggerated control characterized by strict rules have the role to prevent uncertainty. Likewise, there is a hesitation about new products and technologies.

Young professionals are often discouraged by being criticised by superiors for their innovative initiatives and practices.

There is a tendency to keep the same job in the Republic of Moldova. The fear of the unknown and avoidance of professional challenges make Moldovans prefer to keep their jobs stable despite unsatisfactory working conditions, a toxic organizational environment and low salary. Citizens are incompetent in relation with authorities, the fact describing Moldovans as not concerned about politics. They are not aware of competencies of public representatives or institutions, fact, that promotes corruption.

Surprisingly Germany score is 65, but in combination with its low Power Distance, where the certainty for own decisions is not covered by the larger responsibility of the boss, Germans prefer to compensate for their higher uncertainty by strongly relying on expertise.

[4]

At the opposite pole is China with 30 points. Cultures with a low level of uncertainty avoidance accept ambiguity, uncertainty, are open to what is new, different and try to implement new social and technological practices.

Masculinity versus Femininity (MAS) dimension characterizes the level of importance of traditionally masculine or feminine values. More masculine cultures have such important characteristics as, assertiveness, ambition, desire for power and materialism, they tend to be more distinctive, to compete and achieve goals. Traditionally feminine societies are based on human relationships. A lower index in this dimension means that the culture is characterized by less significant differences between the sexes and a higher value of relationships.

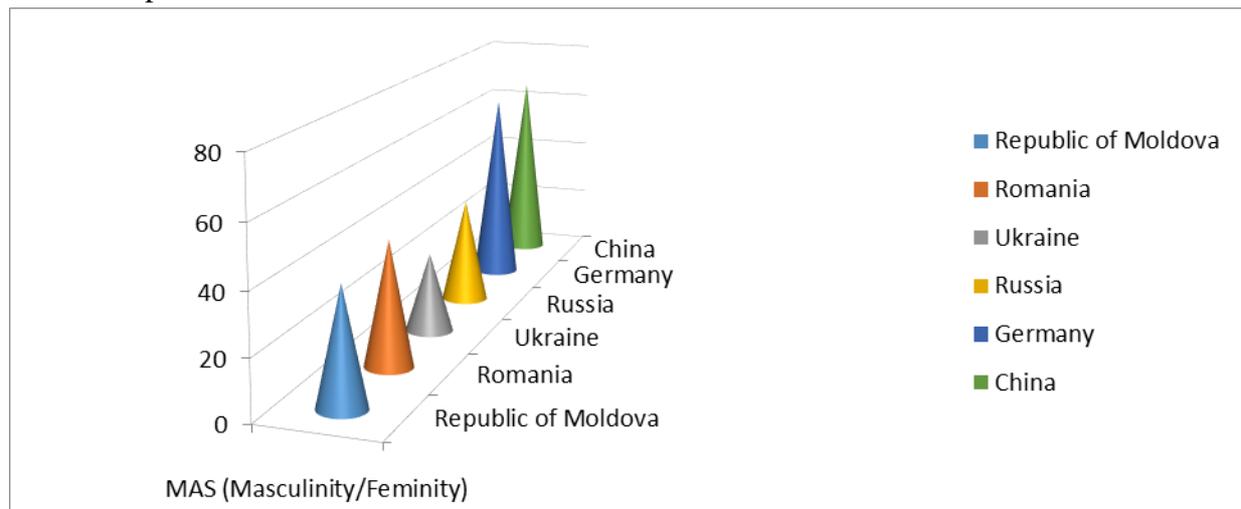


Figure 8: Masculinity versus Femininity (MAS)

Source: Author's compilation, based on <https://www.hofstede-insights.com/country-comparison/>

The score for MAS index in the Republic of Moldova, (39 points), indicates that our society has features of feminine culture. For comparison, we note that neighbouring cultures also have a low score for this dimension: Ukraine (27 points), Romania (42 points) and Russia (36 points). Interestingly, in Hofstede's ranking, feminine cultures are specific to the Nordic countries, obtaining the lowest rating for this size: Sweden (5 points), Norway (8 points), Denmark (16 points), Finland (26 points). According to the features of the female cultures described by Hofstede, it is difficult to imagine our society being a feminine one, having several features of masculine culture. However, we assume that the feminine dimension of our society has a different character than that of the Nordic countries, because we are a culture with a high level of power distance, while the Nordic countries are characterized by low power distance, which leads to more effective social cooperation, gender equality and equal distribution of roles in the family. Here are some aspects that characterize Moldovan society as being feminine. [4]

People in the Republic of Moldova work to live. Work in feminine societies has the role of obtaining a minimum comfort for existence. In masculine cultures, work pursues industrial, economic development, productivity and performance. Moldovans are often considered hard-working people. However, the Republic of Moldova is among the countries with the most days off per year (approximately 40 days). Moldovans have indicated that they prefer to work in a pleasant team than to receive appreciation for their work or to be oriented towards performance and competitiveness.

At the opposite pole, are the countries with high index of masculinity, Germany and China with 66 points. People in such societies, opposite to those with a high level of femininity, live in order to work and dedicate a lot of themselves to perform their tasks. Managers are expected to be decisive and assertive.

Long versus Short term orientation (LTO) describes the time orientation of members in a society. In long-term orientated society the time is understood as a vector, and people tend to look into the future more than being interested in the present or remembering the past. Such societies are goal-oriented and value results. Short-term cultures value traditional methods, spend a lot of time developing relationships, and generally view time as a circle. This means that the future and the past events are interconnected, and what cannot be done today can be done tomorrow.

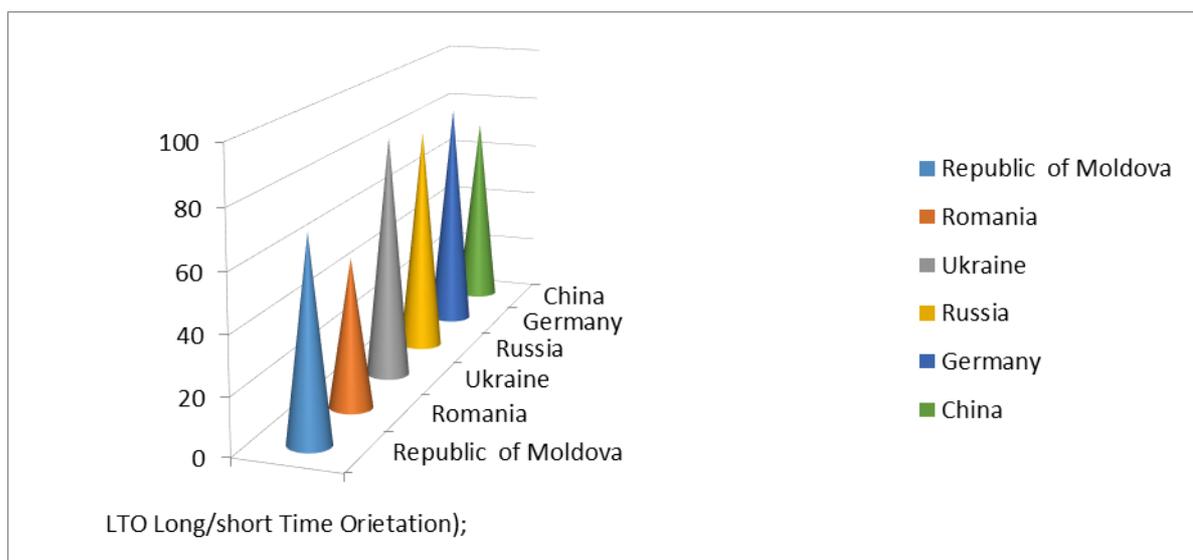


Figure 9: Long Term Orientation versus Short Term Normative Orientation (LTO)

Source: Author's compilation, based on <https://www.hofstede-insights.com/country-comparison/>

The score obtained by the Republic of Moldova for OTL is high (71 points), meaning a long-term orientation. For comparison, we notice that at a close distance is Romania (52 points), Ukraine (86 points), and Russia (81 points). These results indicate that the societies are pragmatic. In societies with a pragmatic orientation, people believe that truth depends very much on the situation, context and time. They show an ability to easily adapt traditions to changed conditions, a strong propensity to save and invest, and thriftiness and perseverance in achieving results.

Indulgence versus Restraint (IVR) determines the ability of a culture to meet the immediate needs and personal desires of the members of specific society. In societies where restraint is a value, strict social rules and norms prevail; the gratification of personal desires is inhibited and discouraged.

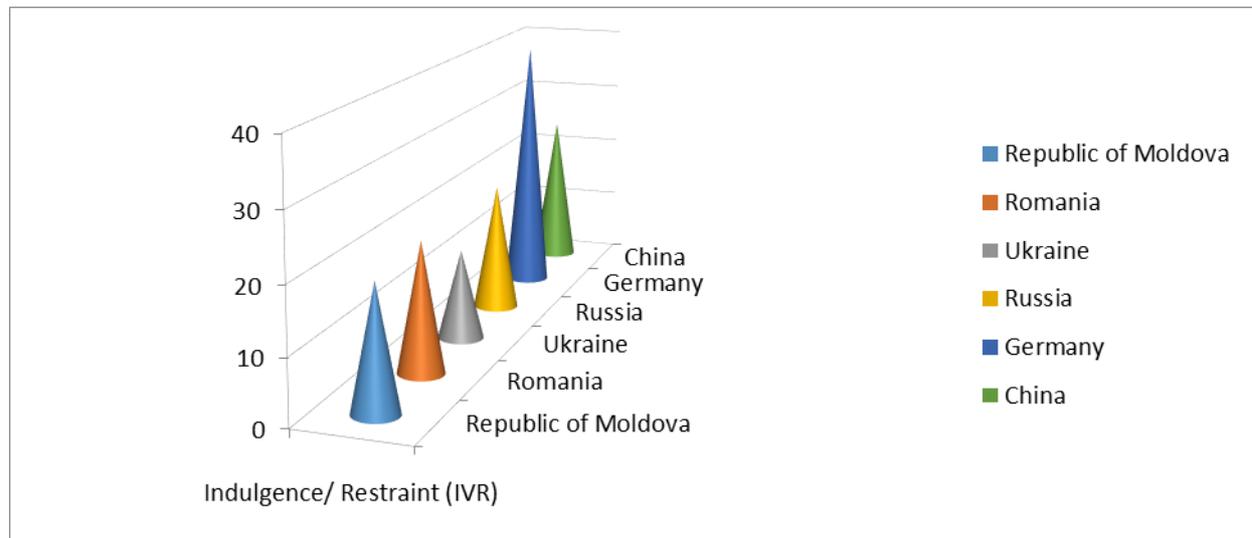


Figure 10: Indulgence versus Restraint (IVR)

Source: Author's compilation, based on <https://www.hofstede-insights.com/country-comparison/>

The score of IVR in the Republic of Moldova (19 points) is very low. We note that restraint is also specific for Ukraine (14 points), Romania and Russia (20 points). In general, this trend is observed in former communist countries or other semi-authoritarian regimes, like China, with 24 points. Due to cultural constraints that inhibit the development of their personality and the accomplishment of their personal desires, people become stressed and nervous. This fact is noticed in everyday social interactions where citizens are irritated, nervous and with lack of kindness. The society in the Republic of Moldova is a rigid one where social interactions are restricted by various social norms and regulations. Personal expression and freedom are discouraged. Moldovans are afraid of criticism and the opinion of others.

At a not very far distance, with a higher than in the Republic of Moldova degree of indulgence and individual freedom, is Germany, with 40 points, but still remains restrained in nature.

The data provided by the research allows **to conclude** that the scores of the six dimensions according the model of national culture developed by Greet Hofstede: power distance index (PDI), individualism versus collectivism (IDV), uncertainty avoidance index (UAI), masculinity versus femininity (MAS), long term orientation versus short term normative orientation (LTO), indulgence versus restraint (IVR) of countries that our country have economic relations on different levels (suppliers, investors, clients, etc.) is very important in order to develop fruitful collaboration. The management of companies or organizations from the Republic of Moldova will have to benefit from the research through the elements it provides when certain actions need to be harmonized with specific characteristics of representatives of different cultures.

In general, the organization does not change its objectives and purpose according to the particularities of a specific market but have to adapt its policies, behaviours, structures in order to achieve managerial goals. A good knowledge of the local peculiarities, cultural dimensions representing a specific country, elements of administration, legislation, social policy, habits and attitudes towards work, time and profit, will allow the companies from the Republic of Moldova to make medium and long term, realistic decisions to fulfil successful collaboration.

An interesting fact discovered in the research is that cultural dimensions of neighbouring countries that shared the same political and social system (socialism and communism, planned economy, etc.) due to the common history: Moldova, Romania, Ukraine and Russia are very similar. The scores obtained for China and Germany in many cases are different.

We need to mention that the obtained results emphasize that cultural dimensions are only a general framework to help evaluate a particular culture to facilitate managerial activity decision making. There are other factors to be considered, such as: personality, personal wealth of people representing a company from abroad to be taken into a specific situation. The proposed measurements cannot predict the behaviour of individuals and do not take into account the personal characteristics of each person.

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SOCIO-DEMOGRAPHIC AND SOCIO-ECONOMIC PROBLEMS OF THE CITIES OF STRASENI FROM THE REPUBLIC OF MOLDOVA AND ZARNESTI FROM ROMANIA

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ABSTRACT. The socio-economic dynamics of small and medium-sized cities in the modern era, highlights the fact that their development and progress over time have been accompanied by many problems of socio-economic, territorial, ecological, etc., which have been intensified, or mitigated, to the extent that local public authorities have effectively monitored and administered them. Numerous development programs, plans and strategies have aimed to address these issues, most often in isolation, without relying on their ranking and prioritization in accordance with the severity of the event, or the impact on the community. Most of these actions were sporadic, being dictated by a risk factor, or conjunctural, without continuity, a report on long-term development strategies. The advantageous geographical arrangement, the proximity of important urban centers such as Chisinau (in the case of Straseni) and Brasov (in the case of Zarnesti), have greatly influenced their development trajectory, having several common features, both in terms of achievements and regarding the problems that arose in both situations.

Through the present study, the author aims at an evaluation of the socio-economic and socio-demographic problems from a comparative perspective, of the way their management by A.P.L. (Local Public Authorities), as well as to propose certain solutions in the eventual diminution, or solution of them, as well as to see the “possibilities” that the two cities have and what they can offer to the population to pursue the opportunities they offer to the population. This scientific approach is part of a doctoral study "Integration of small and medium-sized cities in the regional urban system".

KEY WORDS: *socio-demographic problems, socio-economic problems, Straseni, Zarnesti*

INTRODUCTION

Through this study, the author aims to assess the geodemographic and geoeconomic component of two cities comparable in terms of demographic and economic potential: Straseni in Moldova and Zarnesti in Romania. Both cities are located in the central part of the countries to which they belong, respectively the city of Straseni - located in the Central Development Region of the Republic of Moldova, the city of Zarnesti - in the Central Development Region of Romania (Figure 1).

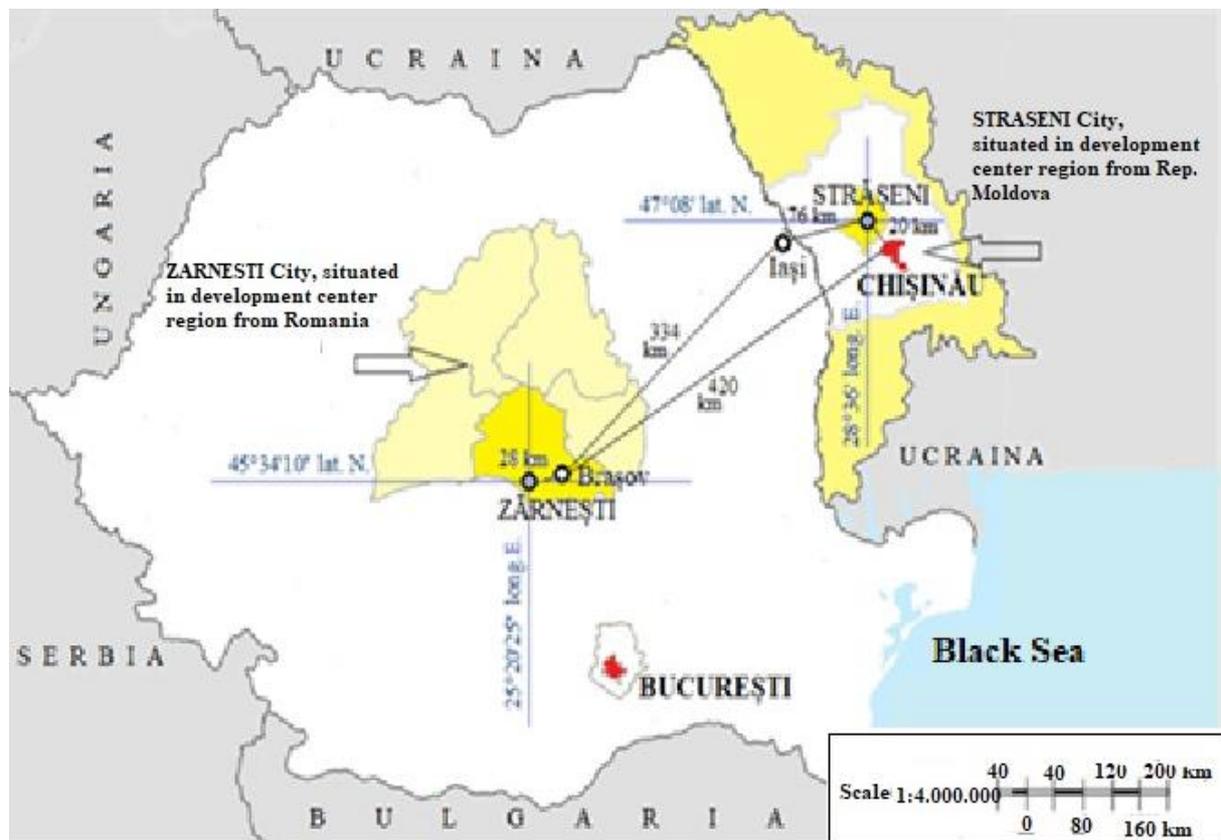


Figure 1. Geographical position of the cities of Strasenii (Republic of Moldova) and Zarnesti (Romania)

Source: Map outline: https://ro.Romania_location_map.svg Map processed by the author

From the point of view of human potential, both are part of the category of small / medium cities [2],[1] (19,200 inhabitants. Strasenii and 26,000 inhabitants. Zarnesti), having several features in common and differentiated characteristics. The centralized development system of the past, the rigid economic structures, the reduced adaptability to the current system of the transition to the market economy, the poor capitalization of the economic and human potential are just some of the common features of these two cities. Both cities are developing quite dynamically, with the intention of adapting to the regional competition of cities, in the current context of decentralization applied by the regional development policy, the transition being marked by both successes and failures. [5].

Although apparently the situation in these cities is relatively good compared to other cities in the regions they belong to, they face a number of common but also specific problems in the current context of socio-economic transition that both cities are going through. Among the socio-demographic problems of the compared cities are: slow population dynamics, an accentuated migration both nationally and internationally, an accentuated aging of the population, a decrease, on the one hand, of the indicators that ensure the sustainability of the demographic system and the increase of indicators attesting to the increase of demographic insecurity, on the other hand. [4]. The author tries to identify to what extent these two close cities as geodemographic and economic potential, can adapt to the new conditions of socio-economic development, as well as to what extent the regional and local development policy allows them to develop their own identity and highlight their local potential in the context of urban competition. Among the economic problems can be mentioned: insufficient capitalization of the economic potential, poor adaptability to the requirements of the internal and external market, the presence of poorly competitive economic entities, lack of well paid

jobs, large number of unemployed people of different types, where the current situation of global pandemic uncertainty is added. [5]. The emphasis is on the study, knowledge and evaluation of the human and economic potential existing in these two localities, located in different countries, which, although at a considerable distance, are linked by certain common features related to geodemographic and geoeconomic evolution.

MATERIALS AND METHODS

The author aims to make a comparative study of the two cities, how to integrate them in the urban system of the Republic of Moldova and Romania, respectively, in the context of decentralization of the economy through regional development policy and highlight the problems faced by these medium-sized cities, their origin, and how to solve them.

In this study, the method of comparison was used, emphasizing the similarities, but also the differences in terms of geodemography and geoeconomics between the two cities, the potential they have and what they can offer the population. Among other methods specific to Human Geography, the following methods were used in the evaluation process: analytical, historical, mathematical and geographical description, and statistical data were taken from the National Bureau of Statistics, Public Services Agency of the Republic of Moldova [11], from the National Institute of Statistics in Romania - through the Braşov County Directorate of Statistics [12], as well as from the City Halls of the two localities [9], [10]. The period of time studied for both cities was the period covered, for the most part after 1991 until now, a sufficient period to follow the trajectories of the two cities. In some cases, data from the pre-1990s were used to track the dynamics for a longer period, or for the post-1990s in accordance with the availability of data from state structures that provided official information.

The study was based on several research hypotheses:

- both cities are marked by similar socio-demographic and socio-economic problems;
- the city of Straseni has a higher degree of polarization in relation to the capital, than Zarnesti, in both cases due to the super centralized development policy of the Soviet period and its current reminiscences.
- the city of Zarnesti has a more advanced degree of local autonomy, and the experience of this city could be a model of good practice for the city of Straseni;
- the city of Straseni has socio-demographic and socio-economic structures with a higher degree of instability, given the longer-term transition that the Republic of Moldova is going through;
- migration is accentuated both at national level but, especially, at international level, the migration flows in / from the city of Straseni are more intense;
- both cities show a decrease in indicators that ensure the sustainability of the demographic system, on the one hand, and an increase in indicators that show an increase in demographic insecurity, on the other hand.

RESULTS AND DISCUSSIONS

Through this study, the author aims to evaluate the geodemographic component of two cities located in the Republic of Moldova and Romania, which both in terms of geodemographic and economic potential fall into the category of cities mentioned above. The surface of

Zărnești city is about 3.4 times bigger, the human potential is approximately the same, and the population density is almost 3 times smaller than that of Straseni city (tab. 1).

Table 1. General characteristics of the cities of Straseni and Zarnesti

	Straseni	Zarnesti
Surface, km ²	60,82	204,75
Number of inhabitants 01.01.2019	19 200	27 436
Population density, place, / km ²	345	136

Source: Straseni City Hall and Zarnesti City Hall; BNS, INS

From an administrative-territorial point of view, both the city of Straseni and the city of Zarnesti have a village, located in both cases 5 km away from the two cities that do not bring a considerable demographic and economic contribution to these cities (tab 2).

Table 2. Population of Straseni Municipality and Zarnesti City, 2019, (number of inhabitants)

Years	Straseni	Fagureni	Zarnesti	Tohanul Nou
1998	20 100	890	26 518	1 520
2007	19 100	832	27 222	1484
2019	19 200	800	26 436	1 460

Source: NBS of the Republic of Moldova, Straseni City Hall, INS, Romania and Zarnesti City Hall

Following the comparative analysis of the human potential of the two cities, it was found that they have approximately the same share in the regional system of which they are part, their population being 19,200 [9] places for Straseni and 26,436 places for Zarnesti [10] (in 2019). From the data of the population dynamics of the cities of Straseni and Zarnesti in the analyzed time interval, it can be noticed that in the time interval taken into account, both cities had small fluctuations regarding the present population, which remained around 20,000 places. for the city of Straseni and 26,000 for Zarnesti. According to official statistics, the population of the two cities in the period 1998-2019 had linear dynamics. During this time, the population registered small fluctuations for each locality. This decline is insignificant compared to the large downward trend recorded by both states and is due to the situation of these cities compared to Chisinau and Brasov, respectively - important polarizing centers at the national level (Fig. 2).

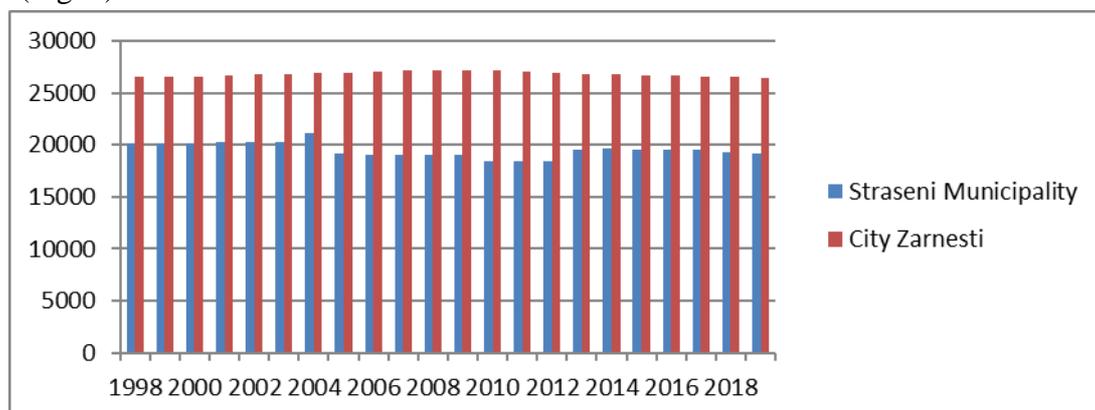


Figure 2. The present population of the cities of Straseni and Zarnesti, between 1998-2019

Source: based on NBS, Republic of Moldova and INS, Romania

The population dynamics was mostly ensured by the positive natural balance for both cities, even if the migration balance was negative in the analyzed time interval. (tab. 3, 4).

Table 3. Dynamics of the natural movement of the population in the cities of Straseni and Zarnesti, 1998-2019

Year	Births (alive)		Deaths		Natural balance		Birth rate		Mortality rate	
	Straseni	Zarnesti	Straseni	Zarnesti	Straseni	Zarnesti	Straseni	Zarnesti	Straseni	Zarnesti
1998	228	246	166	207	62	39	11,3	9,3	8,3	7,8
1999	197	274	178	220	19	54	9,8	10,3	8,9	8,3
2000	177	274	183	196	-6	78	8,8	10,3	9,1	7,4
2001	200	269	174	212	26	57	9,9	10,1	8,6	7,9
2002	211	248	216	240	-5	8	10,4	9,2	10,6	8,9
2003	209	279	196	220	13	59	10,3	10,4	9,7	8,2
2004	234	262	195	202	39	60	11,1	9,7	9,2	7,5
2005	220	320	216	225	4	95	11,5	11,9	11,3	8,4
2006	220	323	198	205	22	117	11,3	11,9	10,4	7,6
2007	221	261	216	248	5	13	11,6	9,6	11,3	9,1
2008	233	317	193	253	40	64	12,2	11,7	10,1	9,3
2009	214	277	198	229	16	48	11,2	10,2	10,4	8,4
2010	223	272	179	227	44	45	12,1	10,1	9,7	8,4
2011	224	234	179	233	45	1	12,2	8,7	9,7	8,6
2012	271	229	201	245	70	-33	14,7	8,5	10,9	9,1
2013	210	279	184	246	26	23	10,7	10,4	9,4	9,2
2014	217	234	180	259	37	-25	11,0	8,7	9,1	9,7
2015	215	259	169	265	46	-6	10,9	9,7	8,6	9,9
2016	208	286	150	246	58	40	10,7	10,7	7,7	9,2
2017	179	266	157	232	22	34	9,2	10,0	8,1	8,7
2018	181	273	183	301	-2	-28	9,4	10,3	9,5	11,3
2019	228	246	166	207	62	39	11,3	9,3	8,3	7,8
Total sau media	4 720	5928	4077	5118	643	810	10,9	10,6	9,5	8,7

Source: Calculated and adapted according to NBS and INS data.

In the period 1998-2018, 4,720 inhabitants were born in the city of Straseni and 4,077 inhabitants died, the city registering an increase of 643 inhabitants, with an average birth rate of 10.9 ‰ (Table 3). The highest number of live births in the city of Straseni was registered in 2012 (271), and the minimum number of live births was in 2000 (177 children), in total in this analyzed time period was they gave birth to 4,720 children. The average annual number of deaths was 185 people. During the analyzed time, the city of Straseni had a positive natural balance of 643 people, and the average birth rate of 10.9 ‰ exceeds the average for the Republic of Moldova. The average mortality rate was 9.5 ‰, being below the mortality rate in the country. The positive natural balance is due to the position of the city of Straseni in relation to the country's capital, but also to the opportunities that have arisen for economic and social development, which stimulated internal migration, especially of young people, but also of positive natural growth. A similar situation was registered in the dynamics of the natural movement of the population for the city of Zărnești. A higher number of children were born here (5,928), and the number of deaths was (5,118 people), which means a positive natural balance of 810 children. The average birth rate of 10.6 ‰ and the mortality rate of 8.7 ‰ also attest to a higher natural population growth than in the city of Straseni. The greater difference between the birth rate and the mortality rate for the city of Zărnești attests to a relatively better situation, as well as a greater stability in the natural movement, a fact confirmed by the analysis of other demographic indicators. Regarding the migratory flows for both cities, we find a population decline due to the mechanical movement of the population, a similar situation for smallest and medium-sized cities in the Republic of Moldova and Romania (Table 4).

Table 4. Dynamics of mechanical movement in the cities of Straseni (Moldova) and Zarnesti (Romania), in the period 1998-2018, persons

	Number of emigrations		Number of immigrations		Migration balance		The total balance of the population	
	Straseni	Zarnesti	Straseni	Zarnesti	Straseni	Zarnesti	Straseni	Zarnesti
1998	228	10	166	2	-62	-8	0	31
1999	208	8	186	6	-22	-2	-3	52
2000	192	12	189	-	-3	-12	-9	66
2001	211	-	183	3	-28	3	-2	54
2002	217	8	224	2	7	-6	2	2
2003	219	5	199	3	-20	-2	-7	57
2004	239	13	200	1	-39	-12	0	48
2005	227	17	218	1	-9	-16	-5	79
2006	234	17	202	-	-32	-17	-10	100
2007	233	16	221	8	-12	-8	-7	5
2008	242	20	197	2	-45	-18	-5	46
2009	222	16	211	3	-11	-13	5	35
2010	233	3	192	6	-41	3	3	42
2011	232	19	185	1	-47	-18	-2	-17
2012	283	15	212	6	-71	-9	-1	-42
2013	224	15	191	3	-33	-12	7	11
2014	231	12	187	4	-44	-8	7	-33
2015	215	23	169	2	-46	-21	0	-27
2016	208	21	150	11	-58	-10	0	30
2017	179	27	157	13	-22	-14	0	20
2018	181	32	183	10	2	-22	0	-50
Total	4658	309	4022	87	-636	-222	7	588

Source: Adaptation according to NBS data and the Public Services Agency of The Republic of Moldova and INS Romania

In the current period of transition to a market economy, accompanied by economic, social and political instability has determined the large number of flows of people moving both inside and outside the country [7]. The migration, as a whole, for the city of Straseni, in the analyzed time interval was about 3 times higher than that of the city of Zarnesti, this fact indicates a lower degree of population stabilization than, even if both states face periods of crises, amplified in the current period by Covid 19. The high rates of migration of the population of the Republic of Moldova, in general, were driven by the Free Trade Agreement and Comprehensive, one of the provisions aimed at visa liberalization for Moldovan citizens which entered into force on 28 April 2014, which facilitated the movement of people within the EU on the basis of a biometric passport migration. To this is added the large number of citizens of the Republic of Moldova who have obtained Romanian citizenship that allows them free movement in the community. These events, adjusted by the political and economic and social instability in the country, the lack of opportunities in the labor market served as basic factors in the movement of people both in Western and Eastern Europe. The highest intensity of migration was registered in 2012 - 283 emigrants, in the same being registered the highest negative migratory balance of - 71 people. The amplitude of the mechanical movement for the city of Zărnești was much lower and insignificant in the total balance of the population (tab. 4). In the total balance of the population for the analyzed time interval we find insignificant positive dynamics for both cities, especially for Straseni which had a positive balance of 7 people and slightly higher for Zarnesti 588 people.

Regarding the socio-economic issues, there are several similarities between these cities, even if the political events (Romania's integration into the European Union, the signing

of the EU-Moldova Association Agreement with its deep and comprehensive free trade area), the crisis structural changes during the transition period that both states are going through, as well as the cruise of the global Covid pandemic 19, significantly influenced the socio-economic evolution of the analyzed cities.

Among the common features for the cities of Straseni and Zarnesti on the socio-economic dimension are the centralized development system of the past, rigid economic structures, reduced adaptability to the current system of transition to market economy, poor capitalization of economic and human potential all influenced the structure and socio-economic dynamics of the given cities.

In the city of Straseni are registered and active about 2780 economic agents (2019). Of these, the largest number is peasant households, which total 1,590 units (several of them did not indicate income, representing more subsistence households). Enterprises with the right of legal entities make up 305 units [9]. An important place is occupied by the food industry, especially the wine industry. Agricultural production in the two cities only partially meets urban requirements, although there are much greater possibilities. In both cases, a large part of the agricultural land is used improperly or uncultivated. Urban demand and the local agri-food market would be met by regional producers and distributors, which would reduce their dependence on imports as the agricultural sector intensifies.

In the secondary sector operate 156 units as follows: 17 units with profile of machine building and metal processing industry; 37 units with construction profile; 43 units with energy profile; 47 units with wood processing profile; 5 units with light industry profile; 7 units with chemical industry profile. In the tertiary sector, 90 units operate as follows: 23 units with a transport profile; 31 units with service profile; 36 units deal in fuel trade. Also here there is 1 unit with communal profile, and the rest are economic agents with various other activities [9]. The largest share of the population is employed in the tertiary sector: trade, transport, banking, education and health. A considerable part of the economically active population of the city commutes daily to the capital, being primarily involved in the tertiary sector. The population employed in the secondary and primary sectors is quite small, even if the relaunch of a free economic sub-area which would create a large number of jobs is foreseen.

Currently, several companies have been closed indefinitely, unemployment is quite high, and the lack of jobs is felt everywhere, a similar situation is registered in Zarnesti [10].

The European legislation implemented by Romania during the over 10 years of presence in the EU is felt in the urban development of small and medium cities in the context of territorial decentralization, the experience of Romanian cities could serve as an example of good practice for Moldova [3].

Zarnesti locality since its appearance and until now, it has evolved economically from a predominantly agricultural profile (former Zărnești village), to an industrial profile (current city) [6], [8]. Economic development of Zarnesti took place mainly between 1960-1970 and lasted until the 1990s. [6], [8]. The population of Zarnesti stands out from an occupational point of view in industry, partly in agriculture, as well as in tourism (mountain and leisure tourism), which is currently stagnant.

Zarnesti has known several stages of economic development: a stage of development, during the communist period from 1960-1990, then a period of decline, between 1990-2000 and again a stage of "pre-economic" between 2000 and until now. Between 1960-1990, a forced industrialization [6], [8] took place throughout Romania, including Zarnesti. The city

experienced a development of industry, until the 1990s, then there is a period of decline that lasted until around the 2000s. During this period, a number of economic units were disbanded, many reduced their activity, and others they reshaped themselves. Because there is an Industrial Park on the territory of the city, established around the 2000s, a series of new units were created here. The Industrial Park offers cheap labor and qualified staff in various fields, here activating several companies with different profiles [8], [10]. In recent years, part of the Zarnesti industry has refocused on the processing of resources, but also of existing products locally. At present, the labor force is qualified for the industrial field, but this requires a specialization for the tertiary sector (the field of services), which currently has prospects for the future (natural tourism potential). Today, the city's population is growing, after the dizzying decline between the last two censuses, which leads to the intensification of economic activities, which have led to major changes in the landscape [10].

Both are developing quite dynamically, with the intention of adapting to the regional competition of cities, in the current context of decentralization applied by the regional development policy, the transition being marked by both successes and failures. Although the situation in these cities is apparently relatively good compared to other cities in the regions they belong to, they face a number of common but also specific problems in the current context of the socio-economic transitions they are going through.

CONCLUSIONS

The cities of Straseni and Zarnesti have a series of common features, but also distinct in the geodemographic and geoeconomic evolution, in the current transition period that both states are going through. The transition to a market economy has marked the population in terms of demographic evolution in the direction of slow growth, against the background of increased migration.

1. Both the city of Straseni and Zarnesti had a slightly linear geodemographic evolution, even if the geodemographic trends in the Republic of Moldova and Romania had a period of constant decline, caused by the economic and social transition they have already gone through more than 20 years;

2. The positive natural balance for both medium-sized cities is due, rather, to their favorable geographical and geoeconomic position in relation to the cities of Chisinau and Brasov, important polarizing centers at national level in both states;

3. The statistical data on the geodemographic evolution in these cities show relatively stable situations, but which require continuous monitoring and management in the context of the pronatalist policies promoted by both states, as well as return migration, which will become possible after stabilization. socio-economic situation at national level, and currently at European and global level in the context of the global pandemic [4].

4. Several demographic indicators have evolved, some even very sharply, which will determine the demographic insecurity of cities, especially on the dimension of migration [7].

5. The most acute problem is the demographic aging, in the case of both cities the threshold of the demographic aging of 12% being far exceeded, which means the increase of the demographic pressure [3, 2].

6. The lack of well-paid jobs exacerbates the seriousness of the employment problem and, correspondingly, of economic growth, which has worsened during the global pandemic;

7. Economic recovery is possible in both cases through major capital investments both from within, but especially from outside [5].

8. The city of Straseneni has socio-demographic and socio-economic structures with a higher degree of instability, given the longer-term transition that the Republic of Moldova is going through.

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