Pandemic Economic Crisis: Changes and New Challenges to Society

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INTRODUCTION

The current economic crisis caused by the COVID-19 pandemic has created new changes and challenges for society, which has led to a deeper identification of pressing problems and to develop strategies and models for overcoming crises in various countries, industries and businesses. The formation and improvement of modern strategies and models of crisis management is impossible without optimizing the resources of economic entities, providing assistance at various levels of government to support priority sectors of the economy, finding additional sources of funding to combat the COVID-19 pandemic.

To ensure the effective develop and implementation of modern strategies and models of crisis management it is necessary to have information about the state of economic entities, relevant commodity, raw materials, financial markets, explore the internal and external environment, determine the impact of risks on current activities business entities or industries. The effectiveness of crisis management strategies and models is determined by the ability of the management system to ensure the support of business activity of economic entities in the relevant market and to stimulate effective consumer demand.

The purpose of writing this scientific monograph is to substantiate the theoretical and methodological foundations and to form and improve strategies and models of crisis management taking into account new changes and challenges for society related to the COVID-19 pandemic and declining business activity of economic entities.

The object of the author's research was the process of formation and improvement of crisis management strategies and models in the conditions of market imbalance and change of the external environment, reduction of activity volumes of economic entities, growth of budget expenditures to combat the COVID-19, formation of new forms of activities and penetration of information technology into various spheres of life to optimize the negative consequences of a pandemic.

The subject of the study were socio-economic, organizational and institutional processes of formation and effective implementation of strategies and models of crisis management in various areas of economic activity; substantiation of mechanisms for ensuring the competitiveness of economic entities and the formation new forms of entrepreneurship; development of modern information technologies; consideration of best practices in business process management and digitalization using world experience in various sectors of the economy caused by the COVID-19.

Chapter 1

NEW CHALLENGES AND TRANSFORMATION OF INTERNATIONAL ECONOMIC RELATIONS

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GLOBAL PANDEMIC ECONOMIC CRISIS: CONSEQUENCES AND OPPORTUNITIES FOR UKRAINE

To determine the opportunities for Ukraine, you need to clearly understand some key definitions, namely two concepts: economy and state, as well as the specifics of the economy of the state of Ukraine. Wikipedia gives the following definition of economics (from other Greek. Οἰκονομία, literally – "the art of housekeeping") – a set of social sciences that study the production, distribution and consumption of goods and services [1]. The same Wikipedia defines that the state is a political form of organization of society in a certain territory, a political-territorial sovereign organization of public power, possessing an apparatus of control and coercion, to which the entire population of the country is subject [2]. The key word here is "territory". The same Wikipedia gives the following definition of a territory (lat. territorium) – it is a part of the land surface with certain boundaries [3].

That is, in fact, based on the generally accepted understanding, the

Ukrainian economy is a management process (or art) of managing an economy in a certain territory, that is, within certain geographic boundaries. There is a deep contradiction in this wrong public perception of the country's economy, which does not allow solving the existing economic problems. It is absolutely obvious that for the state and even more so for the economy of the state, not the territory, but its citizens play an important role. You cannot treat the citizens of Ukraine as serfs, assigned to a certain territory. Any strategy based on the domination of any material values over human values is initially erroneous, especially in a pandemic economy. A logical question arises: "Is it possible for a state or economy with a territory, but without citizens?" – It's impossible even to imagine. This is as absurd as claiming that there is an economy on the territory of Chernobyl. There is a territory there, but there is no economy and there cannot be, because there are no people there. "Is it possible for a state and economy without territory, but with citizens?" – Though difficult to imagine, it is possible. The multi-million army of Ukrainian labor migrants, located outside the geographic borders of the state, made financial injections into the Ukrainian economy much larger than foreign investments, which, moreover, must be given back in the future. Today there are many world corporations with capital and turnovers exceeding the budget of Ukraine hundreds of times, which are not geographically tied to any territory. A civilized state generally exists precisely to serve citizens, not a territory. The dominance of territory over citizens in the public mind is as stupid as the first economic research about the origin of wealth, which argued that land or gold is the source of all wealth in nature. After the labor theory of Karl Marx, there is no longer any doubt that it is the labor of people that is the source of the origin of income, profits and all created benefits, including GDP. It should be noted that the main principles of the creation of the EU were and remain the free movement of capital, people, goods and services. So why do we continue to perceive the economy of a state with the geographical boundaries of this state? Globalization and the pandemic economic crisis have finally proved that for the state, citizens play a priority role, not territory. Any economic strategy of the state (as well as political and any other), which is based on the dominance of territory or any other material values over human values and the interests of its citizens, is doomed to absolute collapse.

Here are two not very pleasant examples for many Ukrainian citizens.

Example 1 – annexation of Crimea. Most people are sincerely

mistaken that sanctions were imposed on Russia because of the annexation of Crimea. In fact, for a democratic state, the source of power is the people (as it is written in the Constitution of Ukraine and not only), and the people are the totality of citizens. After establishing military control over Crimea, Putin made a gross strategic mistake. To legalize the withdrawal of Crimea from Ukraine, it would be logical to hold democratic elections in Crimea. There were none. If really such took place simultaneously with a referendum, with observance of all democratic norms and standards, with equality of all political forces, during the election campaign, impeccable formation and work of election commissions, the maximum presence of international observers, maximum openness to the media, open and fair consideration of complaints against violation of the electoral process, etc. In the event of a victory of the pro-Russian forces, it would be difficult to accuse Russia of annexation, because it is difficult to dispute the right of the population of a particular territory to self-determination, and the greater the percentage of votes, the more difficult it would be to accuse of annexation. In fact, the sanctions were introduced not for the annexation of Crimea, but for non-observance of democratic standards and values of citizens. Of course, we understand that Russia could not allow for a real triumph of democracy in Crimea for many reasons, even though there was a high probability that the pro-Russian forces would win the vote. Such a precedent for the triumph of democracy could motivate other regions of Russia, such as the Caucasus, to fight for a referendum on independence, and the voting results might not be entirely convincing, so voting in Crimea was a formal farce with a pre-calculated percentage of votes. This bitter lesson in history emphasizes the priority of citizens over territorial boundaries.

Example 2 – Donbass. We are absolutely convinced that the return of Donbass to Ukraine in the near future is impossible either militarily or peacefully, in no way at all. Because Donbass is not a territory, it is people. The fact is that millions of Donbass residents are not just against Ukraine, but even aggressively against. In no case do we call for abandoning the return of Ukrainian territories, we are convinced that citizens are more important than any territory. The return of the territory without the return of citizens is impossible. Taking into account the unreality of the “return” of millions of Donbass residents to the legal, cultural and economic space of Ukraine, there is no reality of the return of the occupied territories. But the return of citizens without territory is possible and even necessary. All who make a choice in favor of Ukraine

must return once and for all, and the state must take care of where to live and work.

Conclusion: **citizens are the most important economic priority for the economy of Ukraine in comparison with any territory values in the number of its territories and from this position easy needs any position. The pandemic economic crisis did not reveal anything new, but it finally and irrevocably confirmed and proved the priority of the human factor in the economy of any state over the geographical boundaries and regional structure of the state**.

Consider the strengths and weaknesses of the Ukrainian economy from the angle of the priority of the human factor in creating GDP.

The weaknesses of the Ukrainian economy are:

1. High level of corruption in the state, economy and society. Corruption in the Ukrainian economy has reached such unheard-of proportions that it does not even allow one to really realize and understand what the Ukrainian economy is and is. Here are a few examples that, in our opinion, clearly show that managing a corrupt Ukrainian economy can be compared to driving a car blindfolded. Let us recall that the most important indicators of any economy, especially a pandemic one, are GDP and money supply.

Example 1 – refund of fictitious VAT. In order to issue a fictitious VAT, it is necessary to officially register at the customs and statistics authorities an agreement for an amount five times greater than the value added (VAT in Ukraine is 20%). Tens of billions of fictitious dollars documented and proven in courts mean hundreds of billions of dollars in fictitious exports, that is, gigantic amounts of fictitious GDP. The size of the distortion of statistical reporting due to total corruption has reached such proportions that when a forecast is developed that in a pandemic economy, Ukraine's GDP will decrease by 2% or 3%, this is not true. Because in fact, not only can no one predict the level of GDP decline, but even knows and cannot know how much GDP Ukraine actually produces, and the use of statistical data for economic forecasting in Ukraine is at least false.

Example 2 – placed foreign exchange reserves of the NBU. You need to understand that the foreign exchange reserves of the NBU (for example, today – 26 billion dollars USA [4]) are not physically located in Ukraine, at least most of them are placed in the accounts of foreign banks abroad. In 2008-2009, there was information in the media that the NBU was so unsuccessful in placing money abroad in weak and unpromising banks that went bankrupt during the crisis, that formally,

according to documents, although this money was recorded in the form of accounts receivable to the NBU, in fact it is impossible to obtain them or collect them in any way from foreign banks due to their bankruptcy. In such conditions, to conduct a reasoned discussion about the details of growth or fluctuations in the money supply in percent or even tenths and hundredths of a percent, about fluctuations in exchange rates, etc. is at least not serious.

It is obvious that corruption in Ukraine has not just penetrated into all spheres of the economy, society and state. It has reached, in qualitative and quantitative terms, the level that does not allow an objective assessment of the real state of the economy and made the corrupt component unrealistic for elimination. A pandemic economy will finally and irrevocably destroy the slightest and even hypothetical hope even for the illusion of fighting corruption.

2. Lack of motivational tools for more efficient and more productive work, the absence of the so-called “social lift”. The reasons for this lie not only in numerous examples of state lawlessness in the appointment to various positions. The reasons are much deeper. First, the communist coup of 1917, then the Holodomor, then the Stalinist repressions, war communism, then the communist stagnation, then the collapse of the USSR, and then the post-Soviet corrupt economy finally formed the psychology of workers who lost confidence in the civilized mechanisms of employment and career growth based on a fair principle who works best, he lives better.

3. The deteriorating demographic situation in Ukraine. The number of pensioners per worker in Ukraine is three times higher than, for example, in the Poland. The number of employed and retired people has almost equalized and the situation will worsen significantly in the future. A pandemic economy will only accelerate and deepen this trend.

4. High level of mutual distrust of citizens and the state. The state not only fails to fulfill the organizational and stimulating function for the economy. In fact, it is the main obstacle to its development. The actions of the state in relation to entrepreneurs in the context of a pandemic can finally destroy even the remote hope of a virtual mitigation of mistrust in the future.

5. Doubtful level of quality of labor resources. One very important feature is inherent in a high-quality workforce; it is not qualifications, not intelligence. Intelligence is important, but it is the most important quality of a businessman, manager, politician, art worker, scientist, etc. For the working masses, the most important quality is discipline. This is

manifested not so much and not only in compliance with laws: compliance with traffic rules, work schedules, the same quarantine measures. Discipline in everything: compliance with safety rules, self-awareness, and respect for others. Discipline is an awareness of the equality of everyone in line, before the law, in public transport, everywhere. Discipline is compliance with all norms and rules of the production process, norms and rules of civilized coexistence in society it is the ability to defend oneэs rights through trade union organizations.

6. Lack of mutual understanding between citizens on many fundamental issues, such as: language, the vector of development of the EU economy or the East, NATO membership, attitude to the past, etc. The lack of civil consent is intensified, and may even be caused by the absence of state mechanisms and traditions of decision-making through direct expression of will in a referendum. The lack of traditions of such an important unifying instrument as a referendum both at the national and regional levels significantly worsens the collective qualities of human capital. Indeed, in fact, a huge number of questions, once and for all, could be solved in such a way that would contribute to the formation of a collective disciplined self-consciousness among citizens, including production.

The strengths of the Ukrainian economy are:

1. Despite the existing and rather serious shortcomings in the quality of human capital, the citizens of Ukraine want improvements. There is a huge and unrealized demand in society for changes and a willingness to accept new rules of the game to improve the country's economy as well. This is the most important starting point inspiring optimism and enabling strategic development plans. Desire is the basis of progress.

2. Ukrainian citizens have a fairly high level of education, both professional and general.

3. The Ukrainian economy has an army of labor migrants, unheard of in number and unprecedented before in Europe, including students of foreign universities. According to various estimates, from 2 to 2.5 million labor migrants are a whole state. These are, without exaggeration, the best representatives of the working people, relying not on territory, not on minerals, corruption or inheritance. These are people who are capable and able to work, who have seen the pros and cons of Western society, with a sufficient level of self-discipline and have acquired extensive work experience, including invaluable negative experience. This is the real labor elite of Ukraine. The correct organization of this labor army can significantly alter the economy of

any country.

4. Despite the demographic crisis and large-scale labor migration, Ukraine has a large enough population to have a chance of reforming and developing the economy.

5. The presence of an external aggressor with an adequate state policy creates the basis for national unity of the citizens of Ukraine.

The global processes of development of the pandemic economy will weaken all the described positive components of the Ukrainian economy, focused on the primacy of the human factor in the economy, therefore, the reform of the Ukrainian economy should take place immediately.

We offer our utopian scenario for reforming the Ukrainian economy in the pandemic realities:

1. Awareness and legislative consolidation of the priority of the interests of citizens of Ukraine over its territory and over any material assets, including land resources, gold and foreign exchange reserves, etc.

2. The fight against corruption is brutal and uncompromising. It is advisable to adopt a huge number of simple and understandable laws, such as the universal open declaration of income and property by all citizens of Ukraine and increased punishment for enrichment from unconfirmed sources. Abolishing VAT as a tax that has not justified itself or reducing it to such a low level that its fictitious refund becomes economically unjustified. Maximum liberalization of economic activity. Complete replacement of the entire personnel of the customs service of Ukraine if it is necessary to introduce additional military control over the work of customs. Large reduction of unnecessary officials. It is only important that the measures should be as simple as possible, understandable and open, so that they would find maximum support in society. There must be a mental reassessment and rethinking of corruption by the whole society at the subconscious level for this, it is necessary to equate corruption in the defense industry, in medicine and in law enforcement agencies with war crimes and crimes against humanity with a temporary resumption of capital punishment with complete confiscation of property from corrupt officials and their close relatives. All court decisions on corruption must be made public with the involvement of world authorities in criminal law at all stages of the investigation, indictment, etc. to minimize legal errors and increase confidence in the justice system. In fact, most of the necessary and effective laws can be passed within a month, the maximum of two. After

the end of martial law and hostilities in the east of Ukraine, abolish the capital punishment and replace it with life imprisonment.

3. Immediate organization and holding of a referendum on all key issues: accession to NATO, the EU, language law, ratification of capital punishment for corrupt officials, severing or maintaining diplomatic relations with the aggressor country, the introduction of martial law, issues of the territorial state structure, and possibly the church arrangement and delegation to the state of the right to suspend the activities of religious institutions supporting the aggressor in compliance with all standards of democracy and international law with the involvement of the maximum number of international observers. The more fateful decisions will be submitted to a referendum, the better. Referendums should be a regular occurrence. In addition, it will make it possible to convince the democratic world of the inviolability of democratic values and the temporary nature of emergency measures and for the period of an internal civil war against corrupt officials. Make mandatory referendum on all issues of importance to the state. Funds confiscated from corrupt officials should be used primarily to finance referendums, etc.

4. Develop of a strategic plan for cooperation of the Ukrainian economy with labor migrants outside the country and a program for the reintegration of labor migrants who have returned to Ukraine.

5. Develop an effective mechanism for granting citizenship to labor migrants from third countries, which the economy needs and the suppression of any forms of nationalism and interethnic conflicts.

6. Ratify most of the EU standards, except for those few standards that significantly contradict the interests of Ukraine, submit an application for Ukraine's accession to the EU and an application for accession to the euro currency area.

7. Prohibit the departure of Ukrainian citizens to the occupied territories, cut off passenger traffic with the aggressor country, minimize all economic and economic ties with the aggressor, and open a large number of new checkpoints with the EU in a short time.

8. Offer NATO to place military bases on the territory of Ukraine.

Most importantly, it is important not to allow Ukraine to finally turn into a raw material appendage for the rich economies of the world, as well as social upheavals that can lead to its collapse in the context of a pandemic, and as a result of democratic referendums under the supervision of international voters on its territory, it can be proclaimed several new states.

Thus, in pandemic conditions we have identified the strengths and weaknesses of the Ukrainian economy. With the implementation of timely legal, economic, social, institutional actions, Ukraine has a chance to improve its level of economy activity and join the world's leading associations.

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ANALYSIS OF THE NEW GREEN COURSE IN THE WORLD

1. Introduction

The problems of human interaction with nature at the turn of the third millennium came to the fore, due to the relentless increase in the scale of impact on nature, as well as the growth of its total number. As a result, there is an active development of the processes of degradation of individual natural complexes and depletion of the natural resource potential of the planet as a whole, the deterioration of the quality of all parameters of the environment.

Lately, society has come to realize these processes as a global problem and inform the population of different countries about the deterioration of environmental properties of natural components, depletion of resources, reducing their quality, as well as the need to develop legislation on nature conservation and protection.

Therefore, the governments of individual states emphasize the "green course" and the implementation of management mechanisms and principles that determine the responsibilities of the population of the planet Earth to preserve the common environment to ensure the right to socio-economic development.

The aim of the article is to study current trends and features of the implementation of the New Green Course, as well as the introduction of the European Green Course in Ukraine.

2. Relevance of the New Green Course

Countries have embarked on large-scale transformations of economic systems in response to large-scale climate, environmental, and economic crises. The global challenges of the 21st century include:

- Deep climate crisis. According to the report of the Intergovernmental Panel on Climate Change 2018 "Global Warming at 1.5°C" (IPCC, 2018), to date, human economic activity has led to an

increase in average global air temperature by 1°C compared to pre-industrial level. If today's trends continue, between 2030 and 2050, global warming will reach 1.5°C compared to pre-industrial levels, which will have dangerous consequences for all countries. Global climate change leads to an increase in the frequency and intensity of extreme weather events, such as heavy rainfall, abnormally hot or cold weather, tornadoes and more.

- The world is in a state of ecological disaster, which is expressed in pollution of soil, water and air, destruction of forests, loss of biodiversity and destruction of natural ecosystems. Pollution of air, water and soil directly affects the quality and duration of human life. According to the World Health Organization (2017), air pollution causes 4.2 million premature deaths worldwide each year. Air pollution is an important indicator for monitoring progress towards a sustainable, equitable and healthy future.
- The crisis of 2008–2009 pushed the countries of the world to reorient to "green" development. Since then, more and more investment has been made in green industries and infrastructure. Thus, thanks to the achievements of the last decade (2010–2019), about 1,200 GW of new renewable energy capacity was created for $2.7 trillion (Frankfurt School, 2020). Given the scale of the consequences of the COVID-19 crisis, incentives and guidance for further development should take into account and deepen all previously implemented anti-crisis programs. At present, the way out of the crisis will determine for the country its economic direction of development for the coming years and decades.

Since the beginning of the COVID-19 pandemic, civil society, politicians and leaders of the world's leading countries have called for a way out of the crisis by investing in green industries and infrastructure in accordance with the principles of sustainable development. According to UN, "No country will be able to exit this crisis alone… We must seize the opportunity of this crisis to strengthen our commitment to implement the 2030 Agenda and the 17 Sustainable Development Goals. By making progress on our global roadmap for a more inclusive and sustainable future, we can better respond to future crises" (United Nations, 2020). Achim Steiner, head of the UN Development Programme (UNDP), said the pandemic would transform societies: "Post-coronavirus stimulus packages must shift the economy away from its "irrational" oil dependence to a greener future" (Alister Doyle, 2020). According to the Club of Rome, "the solutions are: investing in renewable energy instead of fossil fuels; investing in nature and

reforestation; investing in sustainable food systems and regenerative agriculture; and, shifting to a more local, circular and low carbon economy" (The Club of Rome, 2020). The European (GREENRECOVERY, 2020) and American corporations (350.org, an international movement of ordinary people), heads of central banks (Bailey, A., Carney, M … 2020) and ministers have identified five principles to be followed on the path to a fair recovery with carbon-free development (zero-carbon future) (+ 350, 2020).

3. International features of the "green" course

Climate change and environmental degradation are an existential threat to Europe and the world (European Commission, 2019).

In December 2019, the European Commission published a large-scale action program called "European Green Course", which provides for a radical transformation of economic development in Europe. The main goal of the European Green Agreement is to prepare the EU for climate neutrality by 2050 (IEA, 2020). The program aims to make Europe the world's first climate-neutral continent, so the EU's political efforts focus on clean energy in the economy, industry, production and consumption, large-scale infrastructure, transport, food and agriculture, construction, taxation and social benefits.

At the beginning of 2020, 2/3 of the electricity produced in Europe is carbon-free. About 80% of Europe's electricity can be generated exclusively from renewable energy sources, according to a report by the European Electricity Association, and it is projected that the share of countries without coal will increase from 9 to 21. Among the key findings of Bloomberg experts (BloombergNEF, 2020), the "green" energy transition is the fastest in Europe, and by 2050 the share of wind and solar energy in total electricity generation will be 74%.

The Commission has proposed a European Climate Law (European Commission, 2020), which translates political commitment into a legal commitment and incentive for investment.

The European Green Course is a new direction of development of the EU countries, which provides for reduction of harmful emissions by creating new jobs and new economic opportunities; the gap between economic growth and resource use; maintaining the principle of inclusiveness. Currently, the European Green Course is a framework program that is still filled with concrete content.

The European Green Deal is the plan to make the EU's economy sustainable. Together with the European recovery plan and the EU

budget, the EGD is an excellent framework for the the EU to leverage short- and long-term actions for a clean, resilient and just recovery of the EU economy (IEA, 2020).

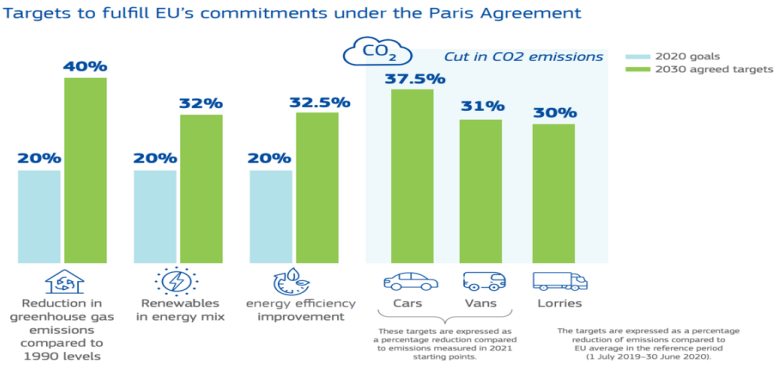

Figure 1.1 The EU is a global leader in the fight against climate change (European Commission, 2019)

Thus, the European "green" course is an instrument of managerial change in the process of transition to sustainable development.

The European Green Course is a set of 50 measures for the next five years (IEA, 2020). The key blocks of the European Green Course program include decarbonisation of the energy sector; renovation of buildings, reduction of energy consumption and energy costs; development of green economy branches; development of clean and affordable personal and public transport; transition to sustainable agriculture; transition to sustainable food supply systems; conservation of ecosystems and biodiversity; combating environmental pollution; climatic actions.

It is envisaged that the implementation of the European Green Course in the next 10 years will attract €1 trillion, i.e. € 503 billion from the EU budget, € 279 billion from the private investment and national budgets. This amount includes the funds of the Fair Transition Mechanism (at least € 100 billion), which will be earmarked to support regions and sectors in need of transition to a green economy. However, according to a study by the German Institute for Economic Research (DIW Berlin), European countries can achieve their climate goals with just € 3 trillion of green investment and a 65% reduction in carbon

emissions by 2030 compared to 1990 (Mavrokefalidis, 2020).

In the first decade of the new millennium in some countries, including the United States, Britain, Australia and Canada, began to develop ideas of the so-called New Green Course (Barbier, 2009; Barbier, Markandya, 2013), which was equated to the New Course of the US President Franklin Roosevelt. With the introduction of the ideas of sustainable development, more and more emphasis is placed on economic growth while improving in the social sphere and reducing damage to the environment. Understanding the New Green Course has come to be seen as stimulating the economy through investment in green industries (renewable energy, energy efficiency, sustainable transport systems, sustainable agriculture, waste prevention and recycling, etc.) and the institutional transformations needed to develop these sectors of the economy.

For example, in the United States, the ideas of the New Green Course have been discussed since the late 2000s. In The New York Times, journalist Thomas Friedman emphasized the "green" version of the New Deal: "It takes a Green New Deal because to nurture all of these technologies to a point that they really scale would be a huge industrial project… like the New Deal, if we undertake the green version, it has the potential to create a whole new clean power industry to spur our economy into the 21st century" (Friedman, 2007).

The ideas of the New Green Course were covered in their companies by US presidential candidates: Jill Stein, Green Party US (2012), Bernie Sanders, Democratic Party (2016), Joe Biden, Democratic Party (2020). All candidates emphasized the possibility of creating new jobs through the transition to 100% RES by 2030 and 2050. However, the New Green Deal may become real in the event of a change in the current administration.

In countries such as the United Kingdom and Canada, the COVID-19 pandemic has given new impetus to the transition from academic development to proactive changes. For example, in Canada, grassroots coalition from a range of civil society groups – scientists, labor unions, Indigenous peoples, and youth – launched the Pact for a Green New Deal in Canada, in which participants called for 100% renewable energy and phasing out the use of oil use sands, to reduce emissions by 50% by 2030 and create new green jobs and reconciliation with indigenous peoples (MacArthura, Hoicka,… 2020).

The British government emphasizes the importance of following the Green New Deal. The UK was the first major economy to commit to net

zero emissions by 2050 in law. The country has identified further steps to support the development of green transport, in particular, additional funding has been provided to attract investment in 'gigafactories', which mass produce batteries and other electric vehicle components, enabling the UK to lead on the next generation of automotive technologies. Much attention is paid to reforestation and research into the new Direct Air Capture (DAC) technology, which captures CO2 emissions directly from the environment, as well as clean energy (Press release, 2020).

South Koreaes New Green Course is part of a broader New Course program that includes, in addition to the green component, the digitalization component. In July 2020, South Korea unveiled the Green New Deal as part of a broader national strategy to transform the economy from carbon-dependent to a low-carbon one and prepare for the post-COVID-19 era. The ministry of trade, industry and energy said the funds invested in 2020-2025 would create 659,000 jobs and help the country overcome the economic crisis brought on by the coronavirus disease pandemic and tackle the climate and environmental challenge at the same time. South Korea will seek to boost its renewable energy capacity to 42.7 GW by 2025 from 12.7 GW it had last year and expand the green mobility fleet to 1.33 million electric and hydrogen-powered vehicles. The Ministry of Trade, Industry and Energy said that the funds invested in 2020–2025 would create 659,000 jobs and help the country overcome the economic crisis caused by the coronavirus pandemic, while solving climate and environmental problems. South Korea will strive to increase renewable energy capacity by 2025 to 42.7 GW from 12.7 GW last year and expand its environmental mobility fleet to 1.33 million electric and hydrogen-powered vehicles.

According to the IRENA report, the deep decarbonisation of the world economy by 2050 requires a total energy investment of up to $ 130 trillion. This will increase aggregate global GDP growth above business by $ 98 trillion from 2020 to 2050 and will have the benefits of increasing renewable energy jobs to $ 42 million (IRENA, 2020).

We completely agree with Edward B. Barbier that "we have a choice: rebuild the old economy, locking in temperature increases of 4C with extreme climate disruption; or build back better, preserving our planet for generations to come… Let us make a green recovery the first step down that road" (Bailey, Carney,… 2020). Developing a policy focused on sustainable economic recovery, the transition from a fossil fuel to a sustainable low-carbon economy requires long-term commitment to public spending, the priorities of which are as follows:

support for green innovation and private sector infrastructure, development of smart grids, transport systems, charging stations and sustainable bridge.

4. Implementation of the European Green Course in Ukraine

The Sustainable Development Goals, taking into account the specifics of national development, have been adapted in the National Report "Sustainable Development Goals: Ukraine". The document stipulates that Ukraine's economic growth will be based on the model of a "green" economy, because due to energy saving measures and the application of energy efficient practices, energy intensity should be significantly reduced. The share of clean energy production will grow steadily, displacing, above all, traditional technologies, which will significantly reduce greenhouse gas emissions. In 2019, Presidential Decree №722/2019 "On the Sustainable Development Goals of Ukraine until 2030" was issued, which legally establishes compliance with the proclaimed global goals, but does not create the necessary conditions for their achievement. The importance of the document is in terms of understanding the targets, calculating financial needs, and developing measures to mobilize them.

At present, the Government of Ukraine strongly states that Ukraine's course towards European integration is unchanged; accordingly, active work is underway to join the EU Green Course (GLAVKOM, 2020). In a few years, a balanced environmental and climate program in neighboring countries will be as demanding of Ukraine by the European Union as anti-corruption policy or an effective justice system today. The priority task facing the Ukrainian government right now is to determine a place for Ukraine in the new realities.

Unfortunately, while in the European Union the environmental component of election programs is a specific list of actions both promised and fulfilled, in Ukraine the environmental component is general and formal. The analysis of the programs of the parties of that time is a confirmation of this; only a few parties do indicate the ecological component, namely the party "Servant of the People", in terms of ecology, was against illegal deforestation; the Batkivshchyna party was against garbage problem and environmental pollution (City Portal, 2020).

We fully agree with Oleksii Ryabchyn that "the European green course is a long-term goal on the basis of which new interstate alliances and alliances will emerge, leadership and cooperation will be built in

various manifestations, i.e. political, diplomatic, technological, economic…. Fossil fuels, which were the engine of the First and Second Industrial Revolutions, are not suitable for the world of the Fourth" (Ryabchyn, 2020).

Experts note that Ukraine has chosen the strategy of "early accession" to the European Green Course, in order to be able to influence processes, develop joint projects, and minimize potential threats. For example, within the framework of the 22nd Ukraine-EU Summit, two eco-friendly agreements have been signed, which are considered as a "point of entry" into the new EU green policy. These are the € 10 million Climate Package for a Stable Economy (CACE) in Ukraine program to finance Ukraine's resource-efficient economy development projects, stimulate the transition to a circular economy and reduce greenhouse gas emissions, and an agreement with the European Investment Bank for € 300 million to thermomodernize public buildings in Ukraine.

There is still a significant technological gap between the European and Ukrainian energy systems. Thus, Ukrainian diplomacy is currently working to minimize the impact of the carbon adjustment mechanism at the border, as well as to ensure that other non-tariff instruments of trade regulation do not create additional obstacles to the integration of Ukrainian business into the EU market, as provided by the Association Agreement and commitments within the WTO.

Conclusions and prospects for further research.

The challenges of climate change and biodiversity loss, economic crises and the crisis of the COVID-19 pandemic are global and therefore not limited to national borders and require a global response. A common understanding, efforts and activities towards climate neutrality and sustainability of development using such a schedule tool as the "green" course provides an opportunity to solve today's problems without harming future generations.

The introduction of the paradigm of sustainable development contributes to the formation of ideas that emphasize economic growth while improving in the social sphere and reducing environmental damage. The concept of the New Green Course has included stimulating the economy through investment in green industries such as renewable energy and energy efficiency, sustainable transport systems, sustainable agriculture, inexhaustible forest use, minimizing the use of primary resources, preventing the generation and recycling of waste.

Transformation of economic systems will require both institutional transformation and state regulation.

Ukraine is claimed to share an ambitious EU climate agenda. Ukraine is in dialogue with the EU on the European Green Course and work has begun on a Roadmap. All this gives grounds to assert that a political and legal platform is being formed, on which further practical steps are already being discussed and developed.

However, at the administrative level, our country needs to recognize that greening the country and reducing harmful emissions is a development priority, and in this direction to adopt appropriate regulations, and the budget of Ukraine should provide funding for environmental, energy efficiency and renewable energy development.

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COMPARISON OF INDIVIDUAL AND PANEL UNIT ROOT TESTS FOR PURCHASING POWER PARITY VERIFICATION IN NON-EURO AREA CENTRAL AND EASTERN EUROPEAN COUNTRIES

Introduction

Purchasing power parity has been under review for about 100 years (Cassel, 1918). Sarno and Taylor (2002) explain that the Law of One Price (LOP) is the basic building block for deriving the Purchasing Power Parity (PPP) equation. In its so-called absolute version, the law of one price states that if prices are expressed in the same currency, each good should have the same price in all countries. Thus, the law of one price can be written as follows:

$$P_{it} = S_t \cdot P_{it}^*$$

where: S_t is the nominal exchange rate between two currencies (and is expressed as the domestic price of the foreign currency at time t), while P_{it} and P_{it}^* represent the price of good i at time t in domestic currency and in foreign currency, respectively.

If the domestic and foreign national price levels are P_t and P_t^*, respectively, the (absolute) Purchasing Power Parity condition can be specified as follows:

$$S_t = \frac{P_t}{P_t^*}$$

or in logarithmic form, the logarithms of variables being designated by lower case letters:

$$s_t = p_t - p_t^*.$$

The real exchange rate r_t is defined as:

$$r_t = s_t - p_t + p_t^* \tag{1.1}$$

and can be interpreted as a deviation from the (absolute) Purchasing Power Parity condition (Sarno and Taylor, 2002).

Egert et al. (2006) present a critical overview of the approaches for calculating equilibrium exchange rates and discuss their use for the transition economies. Boršič et al. (2011) argue that in the existing literature dealing with purchasing power parity the changing nature of real exchange rates in transition countries is explained, inter alia, by the uneven development resulting from macroeconomic imbalances, monetary difficulties due to enormous capital inflows and real appreciation that can be attributed to the catching-up process. According to Taylor and Taylor (2004), in the short-term the Purchasing Power Parity condition does not apply, but in the long-term the Purchasing Power Parity condition may hold in the sense that there is significant mean reversion of the real exchange rate as defined by equation (1.1).

This paper is structured as follows. First, we describe the methodological approach of individual and panel unit root tests. The tests described are applied to the group of six non-euro area Central and Eastern European countries to examine their purchasing power parity relative to the euro. The results obtained are analysed and compared with empirical studies by other authors.

Methodology

In the first step of our analysis, we applied unit root tests to separate real exchange rate series. Augmented Dickey-Fuller unit root test was chosen because its asymptotic distribution under the null hypothesis of a unit root is valid under a very general set of assumptions that goes far beyond the usually imposed linear AR process assumption (Paparoditis and Politis, 2018).

In the second step we used panel unit root tests for the set of six real exchange rate series. Indeed, unit root tests applied to separate time series suffer from low power in small sample sizes and have difficulties in distinguishing non-stationary processes from stationary processes that are persistent. Second-generation panel unit root tests

are preferred over the first-generation tests, as they also take into account cross-sectional dependencies and allow potential correlations between residuals of panel units (Hurlin and Mignon, 2007).

Hurlin (2010) described several second-generation panel unit root tests. We decided to apply the tests of Moon and Perron (2004) and Choi (2002) which are based on the factor structure approach developed by Bai and Ng (2002), among others. The summary description of both tests is taken from Kavkler et al. (2012).

ADF test

Dickey and Fuller (1979) developed their unit root based on an AR(1) model of the form

$$y_t = \rho y_{t-1} + \varepsilon_t .$$

If $\rho = 1$, the process y_t has a unit root and is a non-stationary process. Intercept and time trend can also be included. Instead of testing $\rho = 1$ in the previous equation, one can transform the equation into

$$\Delta y_t = (\rho - 1) y_{t-1} + \varepsilon_t = \beta y_{t-1} + \varepsilon_t$$

and test $\beta = 0$. Augmented Dickey-Fuller (ADF) test also considers serial correlation and augments the equation with lagged differences of the process y_t of the lowest possible order to eliminate serial correlation:

$$\Delta y_t = \alpha_0 + \alpha_1 t + \beta y_{t-1} + \sum_{j=1}^{p} \beta_j \Delta y_{t-j} + u_t$$

Moon and Perron test

Moon and Perron (2004) consider a dynamic panel model of the form:

$$y_{i,t} = \alpha_i + y_{i,t}^0 \tag{1.2}$$

$$y_{i,t}^0 = \rho_i y_{i,t-1}^0 + \varepsilon_{i,t}$$

which enables fixed effects. We have adopted part of the notation from Hurlin (2010). The null hypothesis of the unit root $H_0 : \rho_i = 1, \forall i$ is tested against the alternative that at least one cross-sectional unit is stationary, i.e. $H_1 : \rho_i < 1$ for some i. To model the cross-sectional correlation, Moon and Perron assume that the error terms in equation (1.2) are generated by an unknown number of common factors:

$$\varepsilon_{i,t} = \beta_i' F_t + e_{i,t}, \tag{1.3}$$

where: F_t is an r-dimensional vector of common factors, β_i is the vector of factor loadings and $e_{i,t}$ are idiosyncratic shocks. It's easier to work with matrix notation:

$$\begin{aligned} &Z_i = \left(y_{i,1}, \ldots, y_{i,T}\right)', \; Z_{-1,i} = \left(y_{i,0}, \ldots, y_{i,T-1}\right)', \\ &Z = \left(Z_1, \ldots, Z_N\right), Z_{-1} = \left(Z_{-1,1}, \ldots, Z_{-1,N}\right) \end{aligned} . \tag{1.4}$$

The pooled autoregressive estimator can now be calculated as follows:

$$\hat{\rho}_{pool} = \frac{tr\left(Z_{-1}' Z\right)}{tr\left(Z_{-1}' Z_{-1}\right)} . \tag{1.5}$$

The conventional central limit theorem cannot be applied because of cross-sectional correlation due to common factors. Moon and Perron propose to eliminate the common factors using the projection matrix $Q_\beta = I - \beta(\beta'\beta)^{-1}\beta'$. The i-th row of the matrix β is the vector β_i'. The data is thus projected onto space orthogonal to the factor loadings. The modified pooled OLS estimator on the de-factored data is defined as

$$\hat{\rho}^{+}_{pool} = \frac{tr\left(Z_{-1}Q_\beta Z'\right) - NT\lambda_e^N}{tr\left(Z_{-1}Q_\beta Z'_{-1}\right)} \tag{1.6}$$

with $\lambda_e^N = \frac{1}{N}\sum_{i=1}^{N}\lambda_{e,i}$, where $\lambda_{e,i}$ stands for the one-sided long-run variance of $e_{i,t}$. Moon and Perron calculate two modified t-statistics:

$$t_a = \frac{\sqrt{N}T\left(\hat{\rho}^{+}_{pool} - 1\right)}{\sqrt{2\Phi_e^4/\omega_e^4}} \qquad 1.7)$$

$$t_b = \sqrt{N}T\left(\hat{\rho}^{+}_{pool} - 1\right)\sqrt{\frac{1}{NT^2}tr\left(Z_{-1}Q_\beta Z'_{-1}\right)\frac{\omega_e^2}{\Phi_e^4}}$$

which have a standard normal distribution under the null hypothesis. We denoted $\hat{\omega}_e^2 = \frac{1}{N}\sum_{i=1}^{N}\hat{\omega}_{e,i}^2$ and $\hat{\Phi}_e^4 = \frac{1}{N}\sum_{i=1}^{N}\hat{\omega}_{e,i}^4$, where $\omega_{e,i}^2$ is the long-run variance of $e_{i,t}$ and $\hat{\omega}_{e,i}^2$ its kernel estimate.

t_a and t_b are not feasible because they depend on unknown

parameters. The quadratic spectral kernel is used in our calculations of $\hat{\lambda}_{e,i}$ and $\hat{\omega}^2_{e,i}$ and the optimal bandwidth is chosen according to the procedure of Newey and West (1994). We determine the number of common factors (r) by means of the information criteria, with the maximum possible number of common factors set at 12. Moon and Perron (2004) also derive the asymptotic normal distribution of the two tests under the null hypothesis and study their asymptotic power. To derive the asymptotic distribution, several assumptions of a technical nature must hold (see Moon and Perron (2004) for details).

Choi test

Choi (2002) models the cross-sectional correlation with the help of the error-component models. The two-way error-component model can be expressed as:

$$y_{i,t} = \alpha_0 + x_{i,t}, \tag{1.8}$$

with $x_{i,t} = \alpha_i + \lambda_t + v_{i,t}$ and $v_{i,t} = \sum_{l=1}^{q_i} a_{il} v_{i,t-l} + e_{i,t}$. α_0 is the common mean value for all i, α_i denotes the individual effect, λ_t is the time effect and $v_{i,t}$ is the random component modelled as an autoregressive process of order q_i. The null hypothesis of the unit root, $H_o : \sum_{l=1}^{q_i} a_{il} = 1, \forall i$, is tested against the alternative hypothesis $H_1 : \sum_{l=1}^{q_i} a_{il} < 1$ for at least one i. The constant term, the non-stochastic trend component and the cross-sectional correlations are first eliminated by Elliott et al. (1996) GLS-based de-trending. The GLS estimator of the parameter α_0 in model (1.8) is denoted by $\hat{\alpha}_{0i}$. After de-meaning $y_{i,t} - \hat{\alpha}_{0i}$, one obtains:

$$z_{i,t} = y_{i,t} - \hat{\alpha}_{0i} - \frac{1}{N} \sum_{i=1}^{N} \left(y_{i,t} - \hat{\alpha}_{0i} \right). \tag{1.9}$$

As pointed out by Hurlin (2010), the transformed variables $z_{i,t}$ are thus independent across i for large T and N.

The main idea used by Choi (2002) is to combine p-values from a unit root test of each time series. The augmented Dickey-Fuller (ADF) test is applied to de-trended series and the p-values are calculated. From the regression:

$$\Delta z_{i,t} = \theta_{i0} z_{i,t-1} + \sum_{l=1}^{q_i - 1} \theta_{il} \Delta z_{i,t-l} + u_{i,t} \tag{1.10}$$

the t-ratio statistic for coefficient estimate $\hat{\theta}_{i0}$ is derived. This test is called Dickey-Fuller GLS test and follows the Dickey-Fuller distribution. The proposed pooled unit root test statistics P_m, Z and L^* combine the p-values of the ADF test applied to individual time series:

$$P_m = -\frac{1}{\sqrt{N}} \sum_{i=1}^{N} \left(\ln(p_i) + 1 \right) \tag{1.11}$$

$$Z = \frac{1}{\sqrt{N}} \sum_{i=1}^{N} \Phi^{-1}(p_i)$$

$$L^* = \frac{1}{\sqrt{\pi^2 N/3}} \sum_{i=1}^{N} \ln\left(\frac{p_i}{1 - p_i} \right).$$

p_i denotes the asymptotic p-value of the Dickey-Fuller GLS test for the cross-section i. Under the null hypothesis, all three statistics are normally distributed.

Data

Our study investigates six countries from Central and Eastern Europe that have not adopted the euro, i.e. the non-euro area CEE countries, namely Bulgaria, Croatia, Czech Republic, Hungary, Poland and Romania. We used monthly data for the period January 1998 to

October 2020, i.e. the widest span of data available for all six countries. Monthly averages of the HICP (Harmonized Index of Consumer Prices) for the six countries and for the euro area were obtained from European Central Bank Statistical Data Warehouse, while monthly averages of euro bilateral exchange rates were obtained from Eurostat Database. The Harminized Index of Consumer Prices time series for all six countries have 2015 as base year with the value 100. EViews and Matlab were used for the empirical analysis. For the Choi and the Moon and Perron panel unit root tests the Matlab code was used which was kindly provided by Hurlin and Mignon (2007) on the runmycode.org website.

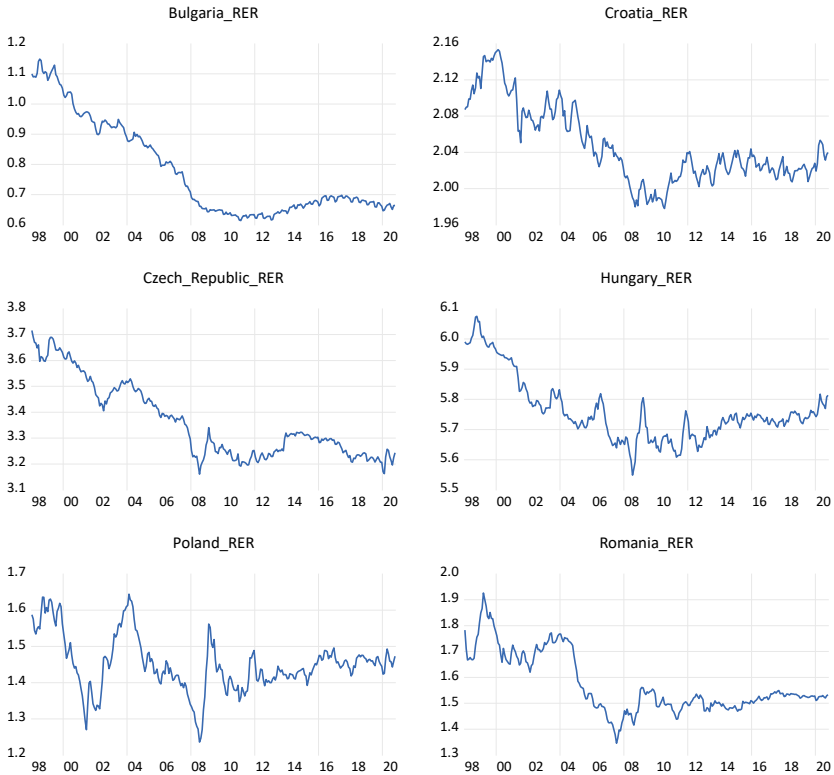

Figure 1.2 The real exchange rate graphs for Bulgaria, Croatia, Czech Republic, Hungary, Poland and Romania

Figure 1.2 shows the real exchange rate plots (in log form) for the six countries. For the first ten years of the data, till around August 2008, the six currencies appreciated in real terms against the euro, with the exception of Poland, which fluctuated between appreciation and depreciation. After mid-2008, the real exchange rate series show more stability. There appear to be two subperiods of data, and our empirical analysis will focus on the whole period and on the second subperiod from 2008 onwards.

Empirical results

First, we applied the ADF unit root test to each of the six real exchange rate series. The results in Table 1.1 show that, for the ADF regressions including only intercepts, the null hypothesis of unit root cannot be rejected in five of the six countries, except in Poland, where the p-value of the ADF test is 0.0074. If the time trend is also included, the conclusions are similar. Only for Poland can the null hypothesis of a non-stationary time series be rejected and Purchasing Power Parity relative to the euro be confirmed.

Table 1.1

Results of the ADF unit root tests (January 1998 to October 2020)

Intercept				
Country	**No. of obs.**	**No. of lags**	**ADF statistic**	**ADF p-value**
Bulgaria	261	12	-2.2745	0.1811
Croatia	271	1	-1.9201	0.3228
Czech Rep.	272	1	-2.1245	0.2353
Hungary	272	1	-2.4351	0.1331
Poland	272	1	-3.5499	0.0074
Romania	271	1	-1.7686	0.3957
Intercept and trend				
Country	**Trend p-value**	**No. of lags**	**ADF statistic**	**ADF p-value**
Bulgaria	0.7427	12	-1.6133	0.7854
Croatia	0.1416	1	-2.3855	0.3863
Czech Rep.	0.2415	1	-2.0769	0.5559
Hungary	0.8417	1	-2.0815	0.5534
Poland	0.6745	1	-3.5297	0.0382
Romania	0.2410	1	-2.0967	0.5449

Notes: automatic lag length selection based on SIC, max. lag length: 15.

As was pointed out by Perron (1989), if the trend has a break, the usual unit root tests often fail to reject the null hypothesis of the unit root when fluctuations around the trend function are stationary, even asymptotically. In other words, for trend stationary data with a break in the trend, the standard unit root tests are biased in favor of not rejecting the false null hypothesis of unit root. Hansen (2001) reviews the tests for distinguishing unit roots from broken time trends and applies them in an empirical example to study US manufacturing labour productivity.

As our real exchange rate series appear to have a break in the time trend (Figure 1.2) around August 2008, we have applied the ADF unit root test to the second subperiod of data from 2008 onwards. The results in Table 1.2 are mixed. For both the ADF regressions with only intercept and the regressions that include the time trend, three of the countries fail to reject the unit root null hypothesis, so the Purchasing Power Parity condition seems to apply only to the last three countries in the table, namely Hungary, Poland and Romania.

Table 1.2

Results of the ADF unit root tests (August 2008 to October 2020)

Intercept				
Country	**No. of obs.**	**No. of lags**	**ADF statistic**	**ADF p-value**
Bulgaria	134	12	-1.8332	0.3631
Croatia	146	0	-2.7168	0.0736
Czech Rep.	140	6	-1.7501	0.4039
Hungary	146	0	-2.9884	0.0383
Poland	145	1	-5.4509	0.0000
Romania	146	0	-3.8790	0.0028
Intercept and trend				
Country	**Trend p-value**	**No. of lags**	**ADF statistic**	**ADF p-value**
Bulgaria	0.2534	12	2.0272	0.5809
Croatia	0.0549	0	-3.3512	0.0623
Czech Rep.	0.6472	6	-1.7072	0.7431
Hungary	0.0011	1	-4.8562	0.0006
Poland	0.0621	1	-5.7735	0.0000
Romania	0.5567	0	-3.8125	0.0185

Notes: automatic lag length selection based on SIC, max. lag length: 12.

Since individual unit root tests suffer from low power in small sample sizes and have difficulty distinguishing non-stationary processes from stationary processes that are persistent (Hurlin and Mignon, 2007), we also applied two of the second-generation panel unit root tests. The test results are shown in Table 1.3 (Choi test) and Table 1.4 (Moon and Perron test).

Table 1.3

Results of the Choi panel unit root test (January 1998 to October 2020)

	Intercepts	**Intercepts and trends**
Max. lag order of individual ADF	12	12
Z - statistic	2.0466	-0.2036
p-value	0.0203	0.5807

Notes: automatic lag length selection based on SIC in individual ADF regressions

For the results of the Choi panel unit root test (Table 1.3 above), the automatic selection of the lag length based on the Schwarz information criterion (SIC) was used in individual ADF regressions. The maximum lag order was set to 12. The null hypothesis of the unit root is rejected at the 5 % level of significance if only intercepts are included in the model. If time trends are also taken into account, the validity of the PPP hypothesis is not confirmed. Since none of the time trend variables in individual ADF regressions is significant (Table 1.1), we rely on the results of the test without the time trends and accept the alternative hypothesis of Purchasing Power Parity validity.

Outcomes of the Moon and Perron panel unit root test are reported in Table 1.4. The computations are based on the quadratic spectral kernel and the bandwidth selection method of Newey and West (1994). The estimated number of common factors with the IC2 information criterion (r) is 5 in both cases and the pooled OLS estimator of the autoregressive parameter (ρ) is close to one. The null hypothesis of the unit root is strongly rejected for both specifications, with intercepts only and with intercepts and time trends. Thus, the tests of Moon and Perron and Choi provide empirical evidence for the validity of

Purchasing Power Parity in the six countries studied.

Table 1.4

Results of the Moon and Perron panel unit root test (January 1998 to October 2020)

	Intercepts	**Intercepts and trends**
$\bar{t}_a$ – statistic	-8.7414	-3.6772
$\bar{t}_a$ – statistic p - value	0.0000	0.0001
$\bar{t}_b$ – statistic	-3.7467	-3.0344
$\bar{t}_b$ – statistic p-value	0.0001	0.0012
ρ	0.9829	0.9771
r	5	5

Notes: kernel function selected: quadratic spectral kernel; bandwidth selection method: Newey and West (1994); number of common factors estimated by IC2 information criterion

In order to further analyse the possibilities of structural change, we also applied unit root tests with a break point which select the break point by minimising the Dickey-Fuller t-statistics, for the entire period (1998 to 2020). As can be seen from Table 1.5, in this case the Purchasing Power Parity hypothesis can be confirmed for Romania and not only for Poland.

Bekö and Kavkler (2019) apply the nonlinear KSS unit root test (Kapetanios et al., 2003) based on the exponential smooth transition autoregressive model to a group of ten Central Eastern European economies for the period from January 2001 to December 2016. Their empirical results imply that deviations from Purchasing Power Parity are maintained for the majority of the European transition countries.

Telatar et al. (2009) examine the Purchasing Power Parity hypothesis for twelve Central and Eastern European economies. After taking structural changes into account and applying nonlinear unit root tests the authors conclude that PPP holds for the observation period.

Table 1.5

Results of the unit root tests with a break point (January 1998 to October 2020)

Intercept				
Country	**Break date**	**No. of lags**	**t - statistic**	**p-value**
Bulgaria	2003 M06	12	-3.7676	0.2498
Croatia	2004 M12	1	-4.2348	0.0890
Czech Rep.	2004 M03	1	3.4068	0.4373
Hungary	2000 M12	1	-4.0245	0.1489
Poland	1999 M10	1	4.4791	0.0458
Romania	2004 M10	1	-5.0308	< 0.01
Intercept and trend				
Country	**Break date**	**No. of lags**	**t-statistic**	**p-value**
Bulgaria	2004 M11	12	-3.1630	0.8582
Croatia	2004 M12	1	-4.0775	0.3247
Czech Rep.	2013 M02	1	-3.7316	0.5443
Hungary	2001 M04	1	-3.8343	0.4786
Poland	1999 M10	1	-4.4433	0.1520
Romania	2004 M10	1	-5.1848	0.0185

Notes: automatic lag length selection based on SIC; max. lag length: 15; break point selection: min. Dickey-Fuller t-statistic.

Jiang et al. (2016) point out that non-linear threshold unit root tests have a higher power than linear tests. For seven Central and Eastern European Countries the authors investigate non-linear mean reversion of real exchange rates and conclude that the Purchasing Power Parity condition is confirmed.

Conclusion

Our empirical analysis reveals mixed results. For the whole period, the null hypothesis of the unit root cannot be rejected in five of the six countries, except in Poland, where the PPP hypothesis is confirmed in relation to the euro. In the second subperiod, from 2008 onwards, the

PPP holds for three of the six countries (Hungary, Poland and Romania). According to the second generation panel unit root tests of Moon and Perron and Choi, we were able to confirm the Purchasing Power Parity of this group of countries against the euro.

Comparison with empirical studies by other authors shows that their conclusions about the validity of PPP differ, even for a similar group of countries. Further empirical studies are needed to solve the Purchasing Power Parity puzzle.

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PANDEMIC AND CHANGE OF PUBLIC PARADIGM: POLITICAL AND ECONOMIC ASPECTS OF THE TRANSITION

The purpose of the text is to characterize the pandemic COVID-19 factor in the context of political and economic metamorphoses in the process of changing the public paradigm. The 2020/21 winter season broadens the basis for both: last year's comparison and trend history analysis, as well as providing a reliable basis for forecasting. The relevance of the topic is due to the need to include the political and economic aspect of the coronavirus epidemic in the list of important global conditions for optimizing the course of reforms. The new era sharply increases the likelihood of new waves of massive threats. Moreover, the determinants of pathogenicity are variable and combinable, which opens up additional prospects for targeted selection of certain traits. The processes of world transformations once again demonstrate that each of the subjects of history has its own combination of advantages and disadvantages. Constructive awareness and taking them into account is the most important element of creating an effective Super-project for the development of the cultural and civilizational world and understanding the ways of harmony of strategy, tactics and operations of modernization. The methodology is based on the unity of abstract-theoretical and concrete-historical analysis.

The impact of human activity on the environment (in particular, due to technical and technological means) has increased dramatically. The total power of the ecumene, without adequate development of socio-cultural and moral-spiritual protectors, turns humanity into a threat to the life and existence of the Earth. Without the earliest reasonable limitation of needs, as well as overcoming the basic position of the value-sense complexes of acquisitiveness and consumerism, humanity

will self-destruct, causing damage to Nature and disrupting the bio-ecological balance. Humanity has come close to the line, which may be followed not just by a cliff in the neo-archaic, but total self-destruction with a catastrophe of the surrounding space. The created social order, on the one hand, does not allow to effectively control the destructive forces inherent in it, since it rests on constant extensive expansion and intensive absorption, being fed from numerous trade and competitive (and not only) wars. On the other hand, the preconditions for transformations of the paradigmatic level and historical scale have emerged and are being strengthened. When evolutionary means are unable to cope with the solution of historical problems, revolutions come to the rescue. The balance of evolutionary and revolutionary pathways allows the flexibility to vary the range of impact [1-3]. Accordingly, the ecumene is in search of new geostrategic models. The subjects of the search are not supranational transnational bodies and states, but the cultural and civilizational worlds. The logic of history leads from the attempts of neo-colonialism with the implantation of convenient models by the metropolises to a polylogue of cultures. Moreover, if the previous periods of human development, as a rule, could be characterized by the dominant civilization (or several competing ones), now there is a competition of fundamentally heterogeneous models of organizing life. In particular, given the multipolarity of the world, ideas about the standard of democracy are replaced by the recognition of the existence of an infinitely wide variety of approaches, models and options for their embodiment.

As practice has convincingly shown, the pandemic forced not only to postpone a number of overdue reforms, but also to adjust the ways of their optimization. In particular, a comparison of the results of the readiness of social systems, as well as the actions of peoples and governments, is the basis for this. The economic consequences of the coronavirus pandemic, in particular, include: - weakening of interstate chains of cooperation, - changes in inter-sectoral balances, - reduction in investment potential, - changes in consumption patterns, - a drop in wholesale and retail effective demand for goods, - an increase in the relative and absolute impoverishment of the lowest and, partly, the middle classes - an increase in the orientation towards self-sufficiency and endogeneity of development, and so on. In the range of global threats, COVID-19 has come to the fore [4-6].

The socio-psychological consequences of the pandemic provoke a surge in fear of maintaining and expanding social contacts, a new round

of alienation, an increase in irritation and frustration, stratification of the people, revealing the difference (sometimes fatal) in the quality of services for different social, ethnic, racial groups, an increase in protest movements and intergroup confrontation and so on. Confronting the consequences of the pandemic sometimes cover up the solution of issues of mastering / preserving the sphere and instruments of international and internal control. Reformatting is enriched with specific characteristics of the rough sketch of the future, the creation of its concept and the identification of intention, most acutely manifested precisely in the transition period. Sovereignty and identity as the protection of their views on life, their world outlook, their meanings and values, their socio-cultural stylistics is the need for organic development. The cultivation of fruitful tradition is not only a reliable basis for the preservation of national identity, but also a worthy ground for successful innovations: both technical-technological, and socio-economic. At the same time, it is important where to see the source of power: whether in one's own people, in the plans of the elite, in the whims of aggressive minorities, or in the interests of external centres. So, the schemes of external control include mechanisms of domination / subordination - economic, military, ideological, informational, legal, more and more often inclining to be involved in an alien cultural and civilizational education. With the absolute and relative (in comparison with the competing centres of power) weakening of the hegemon and the exposure of his internal contradictions, his aggressiveness in the external sphere grows compensatory. Previously good habits sometimes constitute elements of the threats of the present. And the peculiarity of the transition period is the aggravation of the problems associated with the confrontation of different strategies [7-11].

The nature of the measures taken to overcome health problems (for example, Middle East respiratory syndrome, Ebola, COVID-19, and so on) demonstrated both the state of medicine, the ability to deal with emergencies, ways of comprehensive adjustment of the organization of jobs, education, social security, and others, and the dynamics of scientific and technical research in countries. At the same time, the quality of the moral and spiritual life of society has become a significant factor in the survival of society. The choice of the ecumene in relation to the future of both the direction in the application of technology and the nature of the new world order largely depends on the moral and spiritual level. Thus, the moral imperative of goal-setting is able to resist degradation and chaos, stimulating the social environment and clusters

of desirable changes. But the moral and spiritual level in different cultural and civilizational worlds, in turn, is different – and is based on a combination of different foundations. At the same time, life without awareness of identity turns into vegetation - with any material and financial attributes and technical and technological equipment. At the same time, the most organic manifestation of humanity is compassion, derived from conscience and sympathy. Hence – both sacred and everyday harmonious combinations of unity and diversity, sociocultural symphony and collegiality. The people are alive both by spiritual unity and by the diversity of individual searches. On the one hand, development is always a change; on the other hand, groups of alternative search leave the former socio-cultural integrity for another. Justice is one of the axes of morality [12-15].

At the same time, the ability to sustainability and change of cultural and civilizational worlds is largely determined by the intertwining (in particular, under the influence of historical experience, socio-cultural heritage and mental matrices of the people) of objective and subjective factors of structuring, which form different-quality feedbacks and attitudes towards creativity (individual and mass; in labour and management). For example, without the restoration of complexity in the inclusion of scientific research in the cycles of industrial reproduction, one cannot count on a steady rise in the share of scientific research in final products and services. Naturally, the pressure of socially and personally important innovations forces the layer of teachers and scientists to radically change the lifestyle and place in society. After the creation of a technical and technological base, society can, through the mechanisms of the state and private entrepreneurship, free a person from muscular-energy functions and participation in conveyor production and the domestic sphere in order to maximize the development and implementation of individual creative inclinations (primarily, spiritual and intellectual). The growth processes of the mass of those who reveal their abilities are necessary for the progress of society, but are associated with overcoming the dominance of commodity-money fetishism and the aggravation of the contradiction between the fundamental interests of the people and the comprador oligarchy.

So, the quality of development, organization of exchange is the most important indicator of the existing socio-economic system. The really social nature of exchange means how the connection between production and consumption is mediated by specific laws of exchange in the form of a separate sphere of activity, specific proportions of

exchange. It is the exchange proportions, and not at all individual labour costs, that reflect the social significance of labour costs. The value form of equivalence replaces in exchange not the amount of individual costs of the commodity producer, but precisely their socially necessary value. At the same time, the dynamics of the value form plays the role of a litmus test for the processes of social transformation, the geostrategic positioning of countries: the structure of interaction is a reflection of the state and vector of strategic changes in the socio-economic system. Thus, social exchange moves from a form of commodity exchange through labour exchange to an exchange of abilities with the prevalence of creative essential forces. The socially significant results of the realization of the axiological and praxeological development of the surrounding reality are recorded in the historical characteristics of values. The practically active relationship of man to the world is carried out through socio-historical forms of material and spiritual reproduction. At the same time, the systemic structuring effect on the way of exchange, all phases of social reproduction from the side of the processes of informatization, financialization, servicezation, post-globalization increases.

The widespread work ethic, the subordination of the entire way of life to the goals of work, the value hierarchies and value-sense complexes insisting on its exclusivity are leaving the historical arena. The role of each of the stages of social reproduction is changing significantly. In particular, production is actively segmented for the tasks of exchange and consumption; production is by no means carried out on an unknown market, where only the social price of an object or service is established, the volume of demand for them is revealed. That is, socialization is manifested not only in standardization, but also in the individualization of reproductive processes. The ratio of models for achieving dominance, compromise, and consensus significantly affects the ratio of instruments of compensation / gratuitousness, equivalence / non-equivalence of exchange, mechanisms of protectionism / free trade, economic / non-economic resources to ensure the set goals. The direct interest of the leading countries is associated with the maximum openness of markets (while protecting the patents they have collected for know-how, intellectual property, discoveries and inventions, as well as enhancing brain gain), others are interested in protecting their markets and talents while using the property of universal labour. The regulatory potential of exchange, its structure and organization also increases. The subject of reproduction is the bearer of the target function

of the social process, the realization of which presupposes awareness of the state and trends, prospects and risks, as well as the availability of a material and technical base and the ability to make and implement decisions.

Periodic transformations of paradigmatic quality are the inevitability of development as, in particular, the midwife of history. But the period of forced changes itself, of course, is not a time of increment on an established basis; accordingly, it is not at all an era of prosperity, but an era of crisis and the emergence of accumulated contradictions, polarization of society and exacerbation of the struggle. The essence of the ongoing processes is associated with the confrontation of various options for further changes, and not only with the withering away of past strategies and the emergence of future ones. The competition between countries and cultural and civilizational worlds within the corridor of freedom of a certain world order, when going beyond it, is replaced by fierce competition for the formation of a new order of the world order out of chaos on the basis of their institutional memory, resulting in a struggle for the opportunity to lead / use in their own interests the emerging political and economic capabilities. At the same time, it is important that qualitatively different global, multilevel regional and national stages of transformations are superimposed on each other. This is all the more true for the transition period to a new social paradigm with a wide range of opportunities and threats, as well as an arsenal of means of influence.

The growing crisis of the existing system of financial imperialism, world monetary and settlement mechanisms requires strategic futurodiagnostics of the paradigm level, forecasting and designing one's own Super-project of Development. With the global transition to a new social paradigm, ensuring the historical subjectivity of peoples is closely related to organizational and managerial relations. Thus, the quality of the elite is manifested, in particular, in the use of advantages and overcoming obstacles to the development and realization of the people. The period of focused social transformations, on the one hand, expands the scope of opportunities, on the other, it forms the basis for subsequent socio-economic transformations and, accordingly, the nature of the use of this time largely predetermines the further corridor of freedom both in domestic and international life. At the same time, the rise of one country with the weakening of another according to the law of uneven historical development exacerbates the conflict of the era. At the same time, the temptation of the elites is growing, diverting the attention of the

population from internal problems, to intensify the aggression of foreign policy and manipulative presentation of information. The quality of the elite is a significant factor in both transformations in the transition period and the creation of an orbit for further changes of society [16-19].

The penetration of globalization into all structures of social relations no longer allows subordinating the international order as a secondary given, derived from the internal national characteristics of structuring and development. International economic relations become comprehensive when they extend to all aspects of reproduction: not only distribution and exchange, but also production, extending, in particular, to trade (goods and services), financial exchange, production cooperation, labour force and intellectual property migration, capital movement , innovations and factors of cultivation of domestic industries of the latest technical and technological structures.

However, today the power of global flows remains in force, and attempts are being made to leave the Procrustean bed of templates convenient for ensuring the interests of the West. Behind the events of the political and economic conjuncture, there are cardinal contradictions in the transition period to a new social paradigm. Thus, the former stable dynamic system with competition and partnership between the opposing camps of imperialism and socialism has become a thing of the past. For some time, international life was engaged in balancing act, trying to embody the model of the sole domination of the West with a rigid separation of the service economy in the leading countries from agrarian-industrial zones with outdated technologies in a depleted environment. This precarious state of international relations was used by his favourites for selfish appropriation of advantages from their position. Attempts to hegemony as the imposition of a convenient order for oneself: military, diplomatic, cultural, ideological resources – have ceased to produce results; The West has lost its dynamism and attractiveness, it has lost its strategic initiative. The systemic world economic crisis at the beginning of the 21st century is a manifestation of the general antagonism of the previous social paradigm, based on the dominant form of industrialism. Thus, the current state of crisis characterizes the essence of the most social (including political-economic and financial-speculative) system of the ecumene. In particular, human potential, natural resources, and technical and technological capabilities are not being used rationally enough. The unemployed (or inefficiently employed) labour potential increases the pressure on the general situation. Overcoming the crisis requires a

thorough analysis of the range of post-industrial perspectives and opportunities of the knowledge economy.

The need to be similar to nature, the ability to live in harmony with the environment (including the public one) and the objective conditions for reaching new frontiers of cyber socialization are intertwined with the subjectivity of transformations. And it is within the framework of the transitional period that the balance of forces in the structuring of social contradictions and the entire life of the cultural and civilizational world is determined; by who, in whose interests, how deeply, consistently and successfully the changes will be carried out – and the dynamics of subsequent transformations. Participation in the restructuring, ordering of chaos (inherent in both the transitional period and the time of dying forms domination) bestows a premium on the direct subjects and those who use tendencies. At this moment, objective and subjective factors, regular and random, uniquely irreversible and cyclically repeated factors often fiercely compete.

The concentrated focusing of the new structure of international relations by social psychology and ideology is closely correlated with the essence of the ongoing processes and emerging trends, which are manifested, first of all, in the transformations of the system-forming relations of labour, property and management. The cardinal complication of the technical and technological, socio-economic, moral-spiritual culture does not allow underestimating the functions of public planning and management. Increasing the value of individual giftedness requires the support of systems of not only personal training (in particular, health, education, science), but also creative activity and reasonable personal initiative. It is obvious that maintaining a balance between the processes of social self-organization and state regulation is simplified by consciously building an image of one's future and carrying it out in operational, tactical, strategic and large-scale strategy flows through realized decisions.

Changes are manifested in different ways in the regions; varyingly affect social strata and political and economic groupings, in public and private life. Under the cover of old trends and old facts, the structuring of an already matured new paradigm is dynamically occurring: not only prerequisites for the future arise, but the level of realization of opportunities and threats in the new socio-technological paradigm. The characteristics of cardinal transformations are manifested: - a multipolar and multi-speed world, - the intrinsic value of completely different cultural and civilizational worlds, - intolerance to external dictatorship

and rejection of imperialist interference, - deliberate non-interference in internal affairs and voluntary cooperation. At the same time, both the new social paradigm and the period of forced changes multiply threatening factors. At the same time, the risks of delay in carrying out the urgent reforms in the organization and regulation of the economic life of the ecumene are also accumulating.

Whether paradigm changes will be able to fulfil the function of a "locomotive" is largely determined by the relationship between the people and the elite. The social order of interaction of both individuals and countries requires adjustments in accordance with the new social paradigm. They are trying to overcome the elements of the tendencies of increasing chaos either by looking for a strong hand and a neo-caste society, or by the growth of democracy and socialization. On the one hand, the rules of the dictatorship of the world centre (country, organization, alliance, etc., including the means of network centrism) are being formed, on the other hand, the understanding of the equivalence of approaches, the value of diversity and, therefore, fundamental non-interference and refusal from attempts to impose one's own visions to other subjects. Supporters of the law of force are trying to preserve their privileges in a changing environment, while others are trying to stop the approaches of colonial parasitism. Accordingly, a change in the global trend is also the need for a change of elites: those who have fully demonstrated their inability to act at the moment of need for them must leave. The socio-economic readiness of countries and peoples for new conditions should be adequately reflected in the internal and external course. In many ways, it is the leaders who are able to understand and work in the interests of their own cultural and civilizational world that become a significant factor, if not in determining global trends, then at least in their effective use. The essence of the mutual support of traditions and innovations of social development is in the political, economic and socio-cultural structure of the order of life, which, in order to be creative, must be perceived by the people as fair and due. For this, in turn, there should be no privileges for the elite and aggressive minorities, delimitation should not be covered with false slogans, etc. At the same time, the most important actors in the search and cultivation of new models of community life (as well as the protection of the population) were not transnational corporations or international organizations, but the state. Overcoming obstacles, finding ways to embodiment both a compromise and a conflict is an integral element of the development of an individual and society. The

deployment of potential occurs in solving problems, including the victory over various difficulties. Imposing the ideals of “extreme comfort” on the basis of value-sense complexes around the emancipation of animal instincts, craving for idleness and entertainment or money-grubbing / hoarding, substitution of development difficulties for the illusion of life is destructive not only for humans, but also for cultural and civilizational worlds.

Transition and its inherent restlessness, loss of comfort is a condition for large-scale gains; catharsis inherits disaster. The transformation of the political and economic climate can take place in a haphazard scouring mode, but purposeful actions to reflect the logic of history in protecting the interests of society, first of all, development and security, are much more effective. The exacerbation of the old and the emergence of new lines of social division provokes a clash of approaches: regions (in particular, macroregions, first of all, on the basis of cultural and civilizational worlds) and the centralizing hierarchy of monopolistic production and exchange, business executives and financiers, creators and manipulators, cooperation according to interests and coercion to follow external imposed patterns.

Practice has reminded: the geographical diversification of economic, social, political life is a condition for successfully overcoming focal outbreaks of the epidemic, and ultimately for the stability of the state and public order. Optimizing the movement from old model of political and economic organization to new reality changing society’s paradigm generally presupposes not just another renewal, but a revolutionary transition, typologically most clearly revealed in the stages and cultural-civilizational sections. Carrying out radical political and economic renewal without destroying our own creative forces requires a well-adjusted state course. Meanwhile, the optimal historical choice is not at all immutable. Realizing their own: national, group, personal, etc. goals and interests – and when faced with other approaches, they form the final vector of events, as a rule, not predetermined in advance in each specific case. However, the more the degree of approach to the chain of historical choices, the more the actions appear to follow from the logic of the past actions. And the deepening of understanding of the objective content of the logic of history allows us to avoid fatal mistakes, and the refinement of the tools (in particular, economic practice) – to optimize the embodiment of the original value-sense complexes. That allows you to flexibly change tactics and operations, fighting for the set strategic goals.

The global transit of economic power correlates with early changes (first of all, humanization and democratization) in the system-forming relations of labour, property and management. The cultivation of successful on domestic soil forms of combining democracy and self-government focuses on strengthening the presence of workers in power structures, not reducing to people's control over economic power. Both the potential and effectiveness of societal regulation, social pedagogy, and social work in this direction are increasing. It is especially important to accomplish these tasks not only through the prism of trends emerging in theory and practice of the social paradigm, but also for the successful passage of a period of forced transformations, overcoming various emergencies (for example, a pandemic). The creation of industrial production facilities of the latest technical and technological structures and an increase in the qualitative and quantitative characteristics of the population is a requirement for maintaining sovereignty and the ability to resolve issues in the interests of their country. The sufficiency of the resource and methodological bases of the cultural and civilizational worlds for resisting emergency situations is the need for organic development and public safety. The cultivation of factors of endogenous directions of political and economic growth and the intrinsic value of one's differences, one's identity is a requirement for taking a worthy place in the world of a new social paradigm. Geographic diversification of economic, social, political life is a condition for successfully overcoming epidemic (in particular, COVID-19) outbreaks, state stability and public order.

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CORRUPTION ASSESSMENT AND ITS EFFECT ON INNOVATION AND GROWTH

In the empirical setting, there exists wide-ranging unanimity that corruption is detrimental to the economic development of nations in the long-run. Nam (2018) espouses that corruption has for a long time being viewed by theorists and empiricists alike as a standard distortion to economic development. In this case, corruption results in the diversion of the resources that would have otherwise been spent on production to be utilized in bribery. This then decreases the efficient allocation of resources in an economy, and, hampers economic growth. For a long period of time, the endemic of corruption has been perceived to be a third world problem. Nonetheless, corruption has also impacted the development of such high-income nations like Hungary. Hungary has continued its downward trend in the world corruption index. According to the Transparency International (2020) the firm had a corruption index of 44 in 2019 as compared to 55 in 2007.

If we do not take into account such an institutional factor as democratic rights and freedoms, which is directly dependent on the form of government, the most popular institutional factor of economic growth among economists should be recognized as the level of corruption as a level of theoretical analysis (Tullock, 1996; Bardban, 1997; Dudley, 1987) and in empirical studies (Mo, 2001, Leitzer, 1997).

There is an increasing trend to use expert research on corruption. Some studies have a pronounced anti-corruption orientation; others investigate the institutional features of the environment in which

corruption exists. The main methods of expert research: questioning, expert interview, focus group research.

The index method for measuring corruption is recognized by most countries. Special international organizations annually publish indices of corruption and its individual elements: the effectiveness of public administration, bribery, theft of state property. Such indexes include Transparency International's Corruption Perceptions Index (CPI) and Bribery Index, Heritage Foundation Index, Price Waterhouse Coopers Opacity Index.

Diagnostics of corruption based on such indices allow for cross-country and inter-temporal comparison, and also plays an important role in the fight against corruption as indicators of its effectiveness.

The main advantage of expert indicators of corruption is the fact that the quantitative characteristics obtained from the results of the survey make it possible to answer a specific question posed in a particular organization or a particular sector. To ground the choice of mine to use corruption as an object of research among other institutional factors of economic development is due to two considerations.

1. First, in contrast to many socio-political factors (for example, democracy), the opinion about the influence of corruption on welfare is purely negative. There are examples of an increase in the standard of living of the population in countries with a totalitarian regime of government (and, accordingly, with a low level of the democratic regime of government), but corruption reduces potential economic achievements.
2. The second reason is that the spread of corruption in Central Europe, particularly in Hungary, the question of the impact of corruption on the economy is especially relevant.

Even though corruption in itself is a somewhat unclear phenomenon, and although attempts to give a definition have led to success, the corruption phenomena are still not described correctly in whole its varieties, there are ways to measure corruption. In practice, four main approaches are used to measure corruption: dummy variables, instrumental variables, corruption indices, and expert estimates.

A quantitative assessment of the level of corruption is necessary for three reasons.

1. First, the existence of a temporally comparable variable characterizing the level of corruption makes it possible to

identify trends in the development of corruption in a particular country.

2. Secondly, a similar indicator can be used for cross-country comparison.
3. Finally, a quantitative indicator of the level of corruption is needed to assess the effectiveness anti-corruption measures. One of the integral parts of this study is to assess the impact of corruption on economic performance. It is, in principle, impossible to obtain such an assessment without a quantitative indicator of the level of corruption in Hungary and other countries.

Paul Mauro (Mauro, 1995) used both particular indices and instrumental variables to assess corruption in his research. He used two variables as indicators correlating with the level of corruption in the country: the average number of murders per 1000 people of the country's population and the total number of demonstrations, protests and incidents of political unrest in the country per year. Both indicators turned out to be statistically significant in the regression equation with the rate of economic growth as the resulting indicator. The problem with instrumental indicators of the level of corruption is that the choice of indicators is subjective and depends only on the opinion of the researcher. Mauro believed that the level of corruption in the country lowers the risk of punishment for the criminal and thus increases the number of murders.

On the other hand, the crime rate is influenced by many other factors not related to corruption (for example, the standard of living). The same paper uses geographic factors of corruption. Mauro formed a particular variable that took into account the fact that all other things being equal, the level of corruption is on average higher in Africa and Latin America than in the rest of the world. The variable turned out to be statistically significant, which, however, does not indicate its influence on the level of corruption. An empirical assessment of the impact of corruption on economic growth is carried out based on an econometric approach. Based on some previous articles on the impact of corruption on macroeconomic indicators, the specification of the regression equation is formed, which includes three indicators: the initial level of GDP per capita, the stock of human capital, and the level of corruption.

In many works (for example, Henisz, 2002), the indicator of corruption is a specific quantitative characteristic of the shadow

economy. This can be the risk premium in the dark sector (as in work in W. Henisz), the share of the informal sector in GDP, or the share of those employed in the dark sector. In any case, a specific link is being built between the shadow economy and corruption, which is not entirely true, since the phenomena designated by the term “corruption”, in principle, are not necessarily associated with commercial activities. At the same time, it should be recognized that the indicators of the informal sector are excellent for the role of instrumental variables for the level of corruption. Difficulties in using them are associated with the fact that the indicators of the shadow economy themselves are challenging to quantify.

There is an increasing trend to use expert research on corruption. Some studies have a pronounced anti-corruption orientation, while others investigate the institutional features of the environment in which corruption exists. Within the framework of expert research, there is still no developed transparent methodology or strategy, since the specificity of the research depends on the purpose and characteristics of the object. The main methods of expert research: questioning, expert interview, focus group research.

Nowadays, research to determine public opinion is the most frequently used tool for diagnosing the level of corruption. The survey groups are comprised of members of the general population, private business and government. It is these studies that become a source of information about specific types or indications of corruption in the state. Most of these surveys aim to elicit the opinions of the respondents through simple direct questions about experiences and facts related to corruption.

The index method for measuring corruption is recognized by most countries, as well as supranational organizations. Important international organizations annually publish indices of corruption and its elements: the effectiveness of public administration, bribery, theft of state property. Such indexes include Transparency International's Corruption Perceptions Index (CPI) and Bribery Index, Heritage Foundation Index, Price Waterhouse Coopers Opacity Index.

Diagnostics of corruption based on such indices allow for cross-country and inter-temporal comparison, and also plays an essential role in the fight against corruption as indicators of its effectiveness.

There are many corruption indices that individual organizations calculate around the world. The following factors are used as factors influencing the level of corruption:

1. Quantitative characteristics of bribes: frequency, size, variety of services that can be obtained only for a bribe. This indicator is the clearest, but the most difficult from the point of view of collecting information, since some of the bribes remain secret.
2. Attitude towards corruption, awareness of corruption. This includes various indicators of public awareness of corruption facts, the frequency of mentioning corruption in the media, public attitudes towards corruption, and the proportion of people who encounter corruption.
3. Various indicators of the quality of public administration: the efficiency of the state apparatus, freedom of speech and freedom of the judiciary, the degree of state regulation
4. Public trust indicators: the degree of public trust in the Government, the judiciary, police officers and other government agencies at the national and local levels.
5. Specific indicators of business performance are related to corruption. Examples of such indicators: the average time spent on starting a company (with or without a bribe); chances for a government order (with or without a bribe); the amount of bribes from business; share of business structures that regularly use bribes.
6. Indicators of political corruption: confidence in election results, indicators of the frequency of violations during elections.

Historically, the first of its kind was the Corruption Perceptions Index, developed by Transparency International in 1995 (Lambsdorff, 2008). The Corruption Perceptions Index is a weighted average rating value ranging from 0 to 100. The value is assigned to each country based on a survey of local entrepreneurs and analysts, conducted by employees of international organizations (for example, the staff of the World Bank).

The most convenient is the already mentioned corruption perception index, which is calculated annually for more than 170 countries (as of 2019), and at least 80 countries have been present in the calculations for more than ten years. Other indices of corruption make it possible to construct only twice shorter time series. The disadvantages include the

change in the methodology for calculating the index in 2012 due to the transition to a 100-point scale (Transparency International, 2019).

CPI possesses the highest quality technical characteristics and at the same time provides the ability to build the most large-scale statistical database for empirical analysis; in the future, this indicator is used to measure corruption.

Table 1.6

Hungary, Global Innovation Index, Corruption perception index and GDP per capita

YYYY	COUNTRYNAME	GII	CPI	GDPPC
2013	Hungary	46,90	54,00	13687,25
2014	Hungary	44,60	54,00	14246,11
2015	Hungary	43,00	51,00	12651,57
2016	Hungary	44,70	48,00	12992,38
2017	Hungary	41,70	45,00	14457,61
2018	Hungary	44,90	46,00	16161,98
2019	Hungary	44,50	44,00	16475,74

Source: World Bank's and Transparency international database

As highlighted in Table 1.6 Hungary has recorded lower corruption ranking of 44 out of 100 in 2019, a decline of 10 points since 2013.

Table 1.7

Correlation outputs between Global Innovation Index, Corruption perception index and GDP per capita

	GDP per capita (current US$)	Global Innovation Index	Corruption Perceptions Index
GDP per capita (current US$)	1		
Global Innovation Index	0,815878857	1	
Corruption Perceptions Index	0,786156354	0,835131533	1

Source: World Bank's and Transparency international database

Based on the above regression results for the relationship between the Global Innovation Index, Corruption Perceptions Index and GDP per capita (current US$) without any hesitation can say about the positive relationship between the variables. Karklins (2005) espouse that the political system of a nation largely explicates the relationship between corruption and economic development. In a democratic setup such as Hungary, the population has the opportunity to vote and be represented by leaders of that share their views. This is in alignment with the neo-classical paradigm, which espouses that it is socially optimal for individuals to maximise their personal benefits (Vaal and Ebben, 2011). Thus, corruption in a democratic society is expected to reduce economic growth, given that it acts as distortion through the misuse of resources.

The questions are – what and who can change something. Moreover, this is our most, vulnerable spot, because the methods are known. We need people – journalists, civil society, the academic community, who both in the state and outside the state will begin to build new anti-corruption stream.

It is necessary to build an economy in which less depends on the official – then there is less potential for creating a conflict of interest and receiving bribes. We need free media, and we need a competitive civil society, we need a denationalization of the economy – all these institutional changes will undoubtedly help to defeat corruption.

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Chapter 2

OPTIMIZATION OF RESOURCE ENSURING IN THE CONTEXT OF DECLINING BUSINESS ACTIVITY OF ECONOMIC ENTITIES

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CHINA SUPPLY CHAIN LOGISTICS CORPORATE STRATEGY DECISIONS AND LOGISTICS MARKET TRENDS

Introduction

Increasingly, China is becoming an engine for growth across Asia. It achieved an ambitious national goal set in 1974 by quadrupling its GDP during the last quarter of the twentieth century. The average of its annual growth rate has been more than 8 percent over the past ten years. With the upcoming 2008 Olympic Games in Beijing and the 2010 World Expo in Shanghai, more attention is being paid to China, which is growing as a supply chain base on multiple fronts: . it provides a labor intensive manufacturing base it demands enormous amounts of raw materials (e.g., mineral, fuel and steel) for its manufacturing; and it purchases substantial levels of low-, medium- and high-tech products for its infrastructure development (Lambert and Cooper, 2000; Martinsons and Tseng, 1995; Pyke et al., 2000; Yan, 2004). The growing importance of China's economy has directed our interest towards effective long term strategies in and through the Chinese market. One useful approach to understanding the growing China's economy is through the global supply chain perspective. In view of its growing influence in the world, many firms have implemented global supply chain strategies in and through China. The purpose of this paper is to provide a useful framework for managing effectively the information flows of firms that participate in a global supply chain network. This paper presents an appropriate and useful framework for analyzing the practices of global firms from a Chinese market perspective. We first present key statistics that describe the context of China's market – its

growing economy in relation to other economic powers of the world. Then, a two dimensional typology is used to illustrate four types of Chinese market penetration and development, in terms of the level of foreign management control and the level of foreign ownership control. In this paper, a global supply chain strategy in and through the Chinese market is illustrated through examples of USA firms (e.g., Boeing, Ford, Coca Cola, and Kodak), Korean firms (e.g., Samsung and LG Electronics), and Chinese firms (e.g., Hongfujin, Shanghai Dafeng, and Legend). Finally, theoretical and managerial implications are addressed. Context of China's growing economy with 1.3 billion people, China is the largest country in the world in terms of population. A realistic assessment of the Chinese market is essential for firms to formulate a global supply chain strategy. In this section key statistical information is presented for assessing the context of the Chinese market. We deliberately limit our focus to three areas: (1) the size of China's economy measured by GDP and its portion of the world market; (2) the level of foreign direct investment and its origin, to measure investor confidence; and (3) the size and nature of China's trade sector to assess it as an engine of market growth. One indication of the growing level of investor confidence in China is reflected in the increasing amount of foreign direct investment that has been sustained over the years. China is comparable to France and Germany in terms of total foreign direct investment, and it a larger amount than Brazil, South Korea and Japan. Foreign firms invest in China primarily to take advantage of low labor cost, new market expansion, and raw materials acquisition (Fung et al., 2003). Ethnic Chinese business firms also continue to expand their operations in China in search of new world markets (Li, Khatri and Lam, 1999; Yan, 2004). However, in China it is growing very fast as a result of China's huge exports of labor-intensive manufactured goods and large foreign investment in China. Because of inexpensive labor and significant market growth opportunities, manufacturing in China will continue to expand. China's export value is larger than that of South Korea and India, and similar to that of France, and its export growth rate is the highest among all major countries. In a sense, Chinese economy is driven by exports, since the combined value its trade sector (exports and imports) is almost 50 percent of China's GDP. In summary, the engines of China's growth are: foreign direct investment; the trade sector (i.e. exports and imports are about 50 percent of GDP) and the manufacturing sector.

Supply chain market

Supply chain framework typology According to Lambert and Cooper (2000), “one of the most significant paradigm shifts of modern business management is that individual businesses no longer compete as solely autonomous entities, but rather as supply chains ... Instead of brand versus brand or store versus store, it is now suppliers – brand – store versus suppliers – brand – store, or supply chain versus supply chain.” Many firms no longer compete as autonomous entities, but as supply chains that affect their global operations. Such a paradigm shift is most evident in the way global firms compete in China. Many foreign firms invest in China, based on their rich business experiences in their home and other countries. Their entrance into the Chinese market is related to the development and sustenance of their global supply chains (Humphreys et al., 1998; Nolan and Zhang, 2002; Nolan and Zhang, 2003). In this article, “global firms” will refer to firms that compete with products and services produced and delivered across multiple nations. From a global supply chain perspective, the Chinese market provides rich opportunities in multiple fronts: as raw material suppliers, component manufacturers, logistical hubs, and end customers. To analyze the growing complexity of supply chain practices of global firms in China, we first identify two critical dimensions. First, in analyzing global supply chain practices in China, we consider the level of foreign management control, which is the extent of foreign firm rights to ensure overall operating coherence and integrity in producing goods and services in China (Otley, 1994). Historically, global firms enter China with their own unique management control practices. Their advantages are embedded in management know-how that is the source of their business success. In the early stages of their entrance, global firms maintain a high level of management control to secure a business advantage in China. Global firms give up management control only for legitimate reasons. A gradual reduction of foreign management control is possible through a high degree of Chinese participation. As global firms share more of their management control, they also reap the benefits of implementing effective management practices (e.g., just-in-time, cost management, team solving processes, and quality management) through Chinese managers (Yan, 2004). In the later stages of growth the level of foreign management control tends to become quite low. Second, in analyzing global supply chain practices in China, we also consider the level of foreign ownership control. Ownership control refers to the extent that firm exercise their rights to utilize and

dispose of assets (Putterman, 1993).

Global supply chain strategy

In this paper, foreign ownership control is defined as the extent of claims on the profit realization potential of particular products and services. Many global firms in China relegate production and assembly aspects to Chinese suppliers and manufacturers. Their main concern is not about business ownership of their suppliers. Yet they pay careful attention to the ownership of products or components they purchase from Chinese suppliers. Ownership of these products allows global firms to sell them at high margin in their intended market outside China (Agarwal and Wu, 2003; Nolan and Zhang, 2003). Transition in ownership control occurs as the dynamics of power change between Chinese suppliers and global firms in China. In the early stages global firms may take a high portion of realized profit potential (i.e. high ownership control) through the products provided by their Chinese suppliers. As their business capabilities grow, Chinese suppliers may increase their bargaining power over the profit realization potential for the products they produce. Their increasing business experience with global firms enables them to demand higher profit margins from their products than before. In that sense, the extent of foreign firm profit realization potential (i.e. foreign ownership control) is reduced as Chinese suppliers gain more negotiation power. This is the essence of the changing nature of foreign ownership control. In brief, changes in management control are internal in that they have to do with the transition of power between global firms and their Chinese managers. On the other hand, changes in ownership control are external in that they have to do with the profit realization potential between global firms and Chinese suppliers. The typology four types of businesses in the Chinese market, based on two dimensions: (1) the level of the internal factor (i.e. foreign management control); and (2) the level of the external factor (i.e. foreign ownership control). Business risks and benefits are associated with the level of ownership control and management control (Luo, 1997; Luo and Park, 2001; Wei et al., 2002). In the following section, we explain how foreign global firms determine the levels of ownership control and management control. Brand-conscious manufacturers Global high tech manufacturers are a good example of brand-conscious manufacturers. This group has a high level of both foreign ownership control and foreign management control. Boeing is in this group. As of 2002, Boeing sold $6 billion worth of products to China (Xinhuanet,

2004). Boeing's strategic intent is to maintain its technological competencies in the USA and to use China primarily as a source of customers for its aircraft products, although it agreed to set up part manufacturers in China (Xinhuanet, 2004). Boeing predicts that China will require nearly 2,400 new jet airplanes worth $197 billion over the next 200 years (Xinhuanet, 2004). Therefore, the company is very cautious about transferring its management know-how and profit realization potential to China. In the early stages of its entry into China, Samsung Electronics also maintained a high level of ownership and management control. Their approach was to secure its supplier base in order to take advantage of low labor cost, raw materials acquisition, and effective procurement (Beamish et al., 1999). For Coca-Cola, in its early years in China, its products were shipped from the USA. As the market grew at a phenomenal rate, the company built its supplier and customer bases simultaneously (Weisert, 2001). However, Coca-Cola did not want to give up its management and ownership control, in order to preserve its brand image. In brief, these brand-conscious manufacturing firms maintain a high level of both ownership and management control to protect competitive advantages that are derived from unique management know-how and product and process technologies. Offshore sourcing Firms belonging in this category have a high level of foreign ownership control and a low level of management control. Offshore sourcing firms consider China to be a major production or assembly source for products for their home markets. Wal-Mart is a good example of this category. The company is now the single largest export channel from Chinese manufacturers to the USA, accounting for at least 4 percent of China's overseas sales (Goldstein, 2003). Wal-Mart did not build its own manufacturing facilities in China, and it does not control directly the production processes of its suppliers. Rather, its suppliers take responsibility for meeting a specified set of purchasing requirements (e.g., cost, quality and delivery) (Shih, 2004). Wal-Mart utilizes its strong bargaining position and maintains a high level of ownership (i.e. it buys cheaply from suppliers in China and sells at a much higher price in the USA and other parts of the world). In this sense, Wal-Mart maintains a high level of ownership control but its management control is low (Goldstein, 2003). Franchising this group demonstrates a low level of foreign ownership control and a high level of foreign management control. Most global franchise operations are good examples of this group. By nature, franchisors maintain strict management standards to protect brand image through standardized

processes and products. Franchisees usually maintain the ownership of their franchise operations. Kentucky Fried Chicken (KFC) had approximately 200 restaurants in China in 1997 and has grown to 1000 today (Adler, 2003). According to a 1999 survey, KFC was the most popular international brand with Chinese consumers (Adler, 2003; Industry Pages, 2004). The company maintains a high level of management control to enhance its brand image. The ownership of each operating unit belongs to the local franchisee (Adler, 2003; Industry Pages, 2004; Timeline, 2004). In the 1980s, Kodak began to open photo distribution centers across China.

Chinese supply chain strategy

It started with 100 centers, and now they have 20,000 centers. As of 2000, they had 26 offices, six equipment manufacturing and three sensitized material manufacturing plants in China, with more than 5000 employees. Kodak's business units in China cover a range of imaging products. Like KFC, Kodak strives to maintain its brand image while increasing its operations in China by rapidly securing franchisees. High management control with low ownership control are the characteristics of these successful franchising operations (Alon, 2001; Anders and Usachev, 2003; McAdam and McCormack, 2001; Petit, 2001). In the cases of these companies, the profits generated through the Chinese market are mostly from management fees collected from franchisees. The KFC and Kodak cases illustrate that franchise systems allow global firms to penetrate the Chinese market successfully.

Joint ventures Although China's automobile market is relatively small compared to that of the USA, China is currently experiencing one of the highest annual growth rates in automobile sales in the world (Riley, 2002). In response to the enormous potential of the Chinese automobile market, USA auto manufacturers such as GM and Ford have been making efforts to develop joint ventures with Chinese partners. Unlike brand-conscious manufacturers (e.g., Boeing, Coke, Samsung), auto manufacturers have been more willing to transfer ownership and management control. Ford, for example, regards China as an important supplier for raw materials. Also, its global car concept consists of a basic engineering design, accompanied by regional variations to suit local tastes. Final assembly of models is postponed when possible to react effectively to local demands (Martinsons and Tseng, 1995). The above contexts require the active involvement of Chinese managers, so Ford's management practices are somewhat similar to offshore sourcing,

moderating its interest in management control. Depending on joint-venture terms, the level of foreign ownership varies (e.g., 30:70, 40:60 and 50:50). As both GM and Ford strive toward greater market penetration in China, they try to utilize Chinese capital, so the level of ownership control is also moderate (Songini, 2001). Chinese retail traders and manufacturers this group is characterized by a low level of both foreign ownership and foreign management control. For instance, Shenzhen-based Hongfujin Precision Industry Co. Ltd was China's top exporter in 2003, recording $6.42 billion in sales to overseas markets. Shanghai Dafeng Computer Co. Ltd is the world's second largest and Asus TeK Computer Co. Ltd is the third largest laptop producer (Yan, 2004). These companies are fast, global, and entrepreneurial in their management approaches. They also increasingly align with other global firms for market expansion beyond the boundaries of China (Luo and Park, 2001; Magretta, 1998). Even so, the ownership is mostly Chinese (i.e. low foreign ownership control). Many Chinese-owned exporting firms maintain a high level of management control for labor intensive manufacturing operations (Sin and Tse, 2003; Tse et al., 2003). Such firms utilize their networking and cultural strengths in expanding in the Chinese market (i.e. low foreign management control). Issues in relation to transitions as global firms expand in China, they tend to move toward business process redesign throughout the supply chain (Lee and Dale, 1998). In general, supply chain integration includes four noticeable steps: (1) sharing information; (2) exchanging decision rights; (3) exchanging tasks; and (4) sharing risks and benefits (Pyke et al., 2000). In our framework, global firms also experience changes in their business practices. Broadly speaking, changes occur on two fronts – ownership control (external orientation) and management control (internal orientation). Specifically, changes in management control include sharing information, and exchanging decision rights and tasks. Ownership control has to do with sharing risks and benefits. Figure depicts the paths of such transitions, with each path discussed in more detail in the following. Brand-conscious manufacturers move towards offshore sourcing this process is the path that many global firms take after experiencing a stable stage of growth. For example, Boeing builds strategic partnerships with component manufacturers in China. It may take years for Chinese firms to develop comprehensive manufacturing capabilities to manufacture airplanes. Thus, Boeing may not change the level of management or ownership control during a few years. Other global manufacturing firms, however, reduce their management control

much more quickly than Boeing because of different time requirements for Chinese managers and businesses to catch up with global firms. For example, less complex manufacturing firms (e.g., electrical firms) transfer their management and ownership control more rapidly. Matsushita, a Japanese firm, achieved the huge benefits of cost reductions and market expansion in China through supply chain realignment in China, through major transfer of its management control (Jiang and Hansen, 2003).

Initially, Samsung's approach in the Chinese market was to secure its supplier base for utilization of the low labor cost advantage, raw materials acquisition, and effective procurement. As Samsung became accustomed to the Chinese market situation, it tended to approach the Chinese market from a value chain perspective (Business Week, 2002). Recently, Samsung's approach has been to expand in the Chinese market simultaneously through supplier development, logistic infrastructures, and customer relationship management for its semi-conductor and cellular phone market (Beamish et al., 1999). This trend implies that Samsung is increasingly willing to adjust the level of its management and ownership. Brand-conscious manufacturers move towards franchising firms this path is usually taken by brand-conscious firms. For example, Coca-Cola initially maintained a high level of management and ownership control in China. As the Coke brand became more widely accepted, its main task lies in expanding market share through lower prices with slightly different tastes. It is unclear how brand-conscious manufacturing firms may operate in similar fashion to KFC and McDonald's. However, the movement toward sharing more management control while sustaining relatively high ownership control is a possible step for these firms to take. Since manufacturing firms differ greatly from service franchisers such as KFC and Kodak, they cannot multiply their operations as rapidly. However, the essential characteristic of franchising (low ownership control with high management control) is an option for manufacturing operations as well. An example joint venture may illustrate this point. In 2001 Ford established a 50/50 joint venture with Changan Automobile Group, with the capacity to assemble approximately 50,000 units per year. In January 2002, they launched production and sales of a four-door sedan based on the popular Ford Fiesta, with more than 200 changes and improvements to meet the unique needs of the Chinese market. The Ford Mondeo was also launched in 2003. Ford intends to launch at least one new model annually in China (Ford Motor Company, 2003). This implies that,

while Chinese firms like the Changan Automobile Group have accepted a certain level of management control from foreign firms, they are still able to manufacture their own products. Franchising firms move towards Chinese retail traders and manufacturers this transition occurs through active Chinese entrepreneurs. They learn management and technological know-how from global firms, and use this know-how to start their own businesses and compete against global firms. Legend, a Chinese personal computer manufacturer, has taken this route. Liu Chuanzhi, the founder of the company, opened a shop in Hong Kong in the early 1980s to distribute foreign-made computers and then, in 1990, to make PCs. During that time, he studied eagerly and learned from giant USA and Japanese computer companies, everything he could about marketing and organizing sales channels. He says, "HP was our earliest and best teacher" (Powell, 2002). Today, Legend has already expanded into PDA and cell phone production, accounting for 5 percent of the group's revenues, and moving towards entering the USA and European market. Offshore sourcing move towards Chinese retail traders and manufacturers As the Chinese market grows, global firms may expand their operations in China. As Chinese manufacturers and consumers become accustomed to business practices and experience their own domestic market growth, they will look for alternative ways of forming business partnerships with foreign global firms (Rugman and Girod, 2003). In this process, ownership transfer could occur in the form of sharing business ownership (e.g., through stock distributions to Chinese). Eventually, ownership transfer may include the re-branding of the products that the Chinese suppliers produce, through the names of other Chinese firms).

Conclusion

The growing importance of China's economy directs many enterprises, both large and small, towards effective access strategies in and through the Chinese market, as a part of a growing global supply chain network. Increasingly, designing and managing effective information flows requires an appropriate framework to describe the practices of global firms from a Chinese market perspective. By joining the World Trade Organization (WTO) in 2001, China signified a growing confidence in its relation to the world market. Chinese products have gained greater access to the world market and at the same time, other WTO member countries have been permitted increased access to the growing Chinese market (Agarwal and Wu, 2003). The continuous

success of many global firms in the Chinese market may depend upon the level that global firms are willing to share their management and ownership control with Chinese managers (McAdam and McCormack, 2001; Martinsons and Tseng, 1995). Some theoretical and managerial implications need to be considered. Theoretical implications China is a potential global supply chain base. Global firms must consider carefully the extent of foreign management and ownership control with which they enter the Chinese market. These two dimensions are useful in analyzing the behavior and strategic options of global firms in this market. The transition paths among the four different types of global operations provide a rich basis for further theory development in the areas of the global supply chain practices beyond the Chinese market. Future research is needed to identify key variables that define the level of management and ownership control. Managerial implications the typology and transitions paths presented in this paper may be a valuable road map for firms that are considering the Chinese market (Wright et al., 2000). In the course of implementing global supply chain strategies, foreign firms operating in China face complex business challenges, including multiple performance requirements, environmental regulations and cultural differences (Agarwal and Wu, 2003; Nolan and Zhang, 2002; Nolan and Zhang, 2003; Yan, 2004). In designing and managing effective enterprise information infrastructures, firms need to be conscious of both internal and external changes related to their management and ownership control. An understanding of changing business control patterns is critical if firms are to sustain effective enterprise information infrastructures in and through the Chinese market.

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REGIONAL CLUSTERING OF FINANCIAL ENSURING OF DUAL EDUCATION INTRODUCTION ON THE EXAMPLE OF UKRAINE ROAD SECTOR

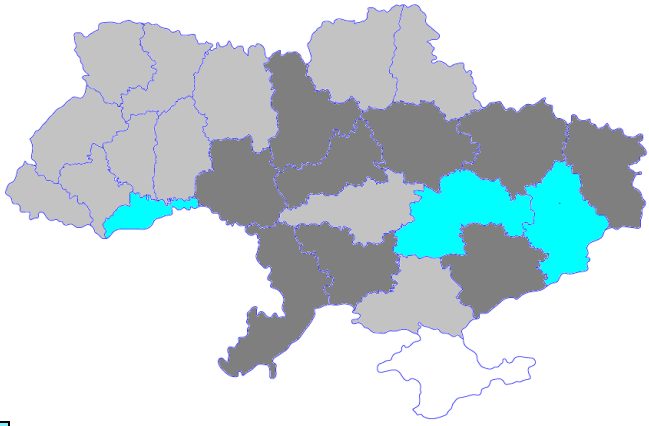
In accordance with Order No. 548 of the Ministry of Infrastructure dated December 21, 2015 "On measures for the development of road transport and the road economy for the period until 2020", strategic directions and strategic development goals were developed. This is necessary to ensure the implementation of plans and the implementation of EU legislation in accordance with the Association Agreement. In accordance with the Order, the priorities were to reform the road sector and to ensure the development and maintenance of the road network in good condition. It was also proposed to modify the existing road financing system. We are talking about the construction of new roads and bridge structures, the financing of which is made from other sources, which was provided for in the legislation on the creation of the Road Fund (local road funds) to determine effective sources of filling

and ensure their intended use. In the same Order, namely paragraph 6, it was indicated that there was no financial ability of the state to switch to targeted cash assistance. To attract investment in the road sector, it was envisaged to improve legislation on the creation of concession and toll roads (list of strategic goals and objectives for the development of road transport and the road sector for the period until 2020, paragraph 16). And this is directly related to attracting a potential investor. But talking about attracting an investor is very difficult. This is clearly evidenced by the indicators given in Table 2.1 and in Figure 2.1.

Table 2.1

Integrated assessment of investment attractiveness (IA) of the regions of Ukraine 2015-2018

Regions	2015	2016	2017	2018
Vinnytsia	0,364828	0,41944	0,387379	0,408514
Volyn	0,345845	0,365684	0,33754	0,355415
Dnipropetrovsk	0,458568	0,430936	0,401925	0,422116
Donetsk	0,47189	0,429789	0,45868	0,458794
Zhytomyr	0,72695	0,372954	0,350911	0,369553
Zakarpattia	0,357155	0,344553	0,380671	0,374684
Zaporizhzhia	0,451318	0,415674	0,403936	0,40534
Ivano-Frankivsk	0,366247	0,386076	0,397705	0,373391
Kyiv	0,380671	0,3707	0,397992	0,406496
Kropyvnytskyi	0,412252	0,382122	0,378995	0,383469
Luhansk	0,382367	0,386267	0,38568	0,403544
Lviv	0,373409	0,356172	0,348742	0,3562
Mykolaiv	0,391169	0,342708	0,384686	0,398673
Odesa	0,432009	0,381761	0,397234	0,396466
Poltava	0,406502	0,384884	0,398044	0,410794
Rivne	0,336685	0,348196	0,370939	0,361749
Sumy	0,381133	0,334539	0,374878	0,376327
Ternopil	0,352938	0,349723	0,361728	0,352696
Kharkiv	0,386052	0,368646	0,388726	0,395974
Kherson	0,354559	0,339447	0,360311	0,377155
Khmelnytskyi	0,349404	0,344855	0,34417	0,363777
Cherkasy	0,350069	0,346361	0,379682	0,398636
Chernivtsi	0,362862	0,409795	0,433758	0,431203
Chernihiv	0,348438	0,359997	0,368524	0,363765
Kyiv (city)	0,592281	0,570773	0,570574	0,569373



- zone of high investment attractiveness;
- zone of average investment attractiveness;
- low investment attractiveness zone;
- zone of statistical information lack.

Figure 2.1 Cartogram of investment attractiveness zoning of Ukraine regions

Source: created by the authors

As we know, the risk in investing finances is the possibility of losing money invested in some object within the territorial unit.

The investment climate is the conditions for cash investments in the region, primarily foreign. This indicator just assesses the risks associated with investments.

An important component of the region's climate is providing investors with guarantees of their savings and their investments. Nowadays, this factor is extremely important. All investors want to protect themselves and their money.

The risk of investing finances is the possibility of losing money invested in an object within the territorial unit. The coefficient of variation can be an indicator of risk. The coefficient of variation of investment attractiveness indicators by region is calculated.

The coefficient of variation:

$$K_{VAR} = \frac{\sigma(x)}{\bar{x}} \cdot 100\%, \qquad (2.1)$$

where: ϭ (x) – average deviation;

ẋ – average indicator value.

Variability is considered weak if ν <10%; if ν is 11-25%, then – average and significant if ν> 25%.

The author's opinion can be checked by calculating another method.

In the neoclassical approach to risk assessment, by analogy with the coefficient of variation, there is a coefficient of semivariation:

$$CSV = \frac{SSV}{\bar{x}}, \qquad (2.2)$$

where: SSV – semivariation deviation.

The semivariation coefficient in some cases allows a better assessment of the degree of risk. This is advisable, in particular, when the external economic environment, risk factors specific to the project in question is marked by dynamism.

Semivariation is calculated as follows:

$$SV = \frac{1}{P^{-}} \sum_{i=1}^{n} d_i^2 p_i, \qquad (2.3)$$

where: p_i – probability of occurrence of the i-th result;

d_i – negative deviations of actual results from the average expected:

$$d_i = \begin{cases} 0, & x_i \geq \bar{x}, \\ x_i - \bar{x}, & x_i < \bar{x}, \end{cases}$$

P^{-} – sum of probabilities for which d_i negative.

Imagine such an example. I am an investor. I want to invest in projects in certain regions. The IA value of each region is presented in dynamics over the last 3-5 years. So the value of the region's IA indicator to a certain extent depends on the investment climate in the country, and, accordingly, in the region. Question: How sensitive is this indicator to the investment climate? Here it is worthwhile to calculate the coefficient of variation of the IA indicators by region. So, the coefficient of variation in this case can be an indicator of risk. Such a calculation will make it possible to obtain not virtual, but real numbers.

For clarity, the results are presented in the comparative Table 2.2.

Table 2.2

Comparative calculation table of the variation coefficient and semivariation coefficient of Ukraine regions

Region	Variation coefficient	Region	Semivariation coefficient
Ternopil	1,46%	Ternopil	0,81%
Kyiv (city)	1,92%	Kyiv (city)	0,96%
Chernihiv	2,38%	Luhansk	1,28%
Luhansk	2,45%	Khmelnytskyi	1,42%
Khmelnytskyi	2,60%	Lviv	1,69%
Poltava	2,85%	Kropyvnytskyi	2,03%
Lviv	2,92%	Chernihiv	2,31%
Kharkiv	3,01%	Poltava	2,71%
Volyn	3,46%	Zaporizhzhia	2,85%
Ivano-Frankivsk	3,65%	Volyn	2,93%
Donetsk	3,91%	Ivano-Frankivsk	3,05%
Kropyvnytskyi	3,98%	Odesa	3,06%
Kyiv	4,18%	Kyiv	3,65%
Rivne	4,25%	Kherson	3,70%
Kherson	4,35%	Rivne	3,74%
Zakarpattia	4,53%	Zakarpattia	4,07%
Zaporizhzhia	5,28%	Kharkiv	4,21%
Odesa	5,30%	Dnipropetrovsk	4,49%
Dnipropetrovsk	5,49%	Donetsk	5,50%
Sumy	5,90%	Cherkasy	5,58%
Vinnytsia	6,11%	Vinnytsia	5,58%
Mykolaiv	6,61%	Sumy	8,78%
Cherkasy	6,76%	Mykolaiv	9,65%
Chernivtsi	8,02%	Chernivtsi	11,37%
Zhytomyr	39,88%	Zhytomyr	20,03%

The calculation results are as follows: for all regions except the Zhytomyr region, the variation is weak. This shows that the Zhytomyr region is unreliable for investment. This means that risks should rely more on the state, and not on a private investor.

This is not to say that risk is tied to an indicator of investment attractiveness. However, it can be confidently stated that it is mainly stimulated by the stability of the indicator of investment attractiveness.

1. Based on the calculations, it is possible to group the regions according to the level of risk for the investor, namely:

2. 0% – 3% – regions with a low level of risk (Kiev, Ternopil, Lugansk, Khmelnytskyi, Lviv, Kropyvnytsky, Chernihiv, Poltava, Zaporizhzhia and Volyn regions);

3. 3,001% – 6% – regions with an average level of riskiness (Ivano-Frankivsk, Odesa, Kyiv, Kherson, Rivne, Zakarpattia, Kharkiv, Dnipropetrovsk, Donetsk, Cherkasy and Vinnytsia regions);

4. 6,001% – more – regions with a high level of riskiness (Sumy, Mykolaiv, Chernivtsi and Zhytomyr regions).

To reduce the level of risk, the authors of this work proposed the introduction of dual education. For this, it is necessary to determine the causal components and potential possibilities of introducing the dual form of education in the context of financial support for bridge building.

If the indicator of investment attractiveness is growing, then, accordingly, they are positively correlated, if it decreases, there is a feedback. That is, all values in the correlation table whose values are modulo less than 0.3883 can be considered statistically insignificant.

If the value of the correlation coefficient R <0,3 – correlation is weak, 0,3 <R <0,7 – the relationship is average, 0,7 <R <1 – the relationship is close. A positive value indicates a direct connection, a negative value indicates an inverse.

Table 2.3 presents a pattern where statistically insignificant correlation coefficients are highlighted in gray.

According to the results presented in Table 2.3, it is possible to divide all regions of Ukraine into 3 groups according to the influence of the introduction of the dual form of education on investment attractiveness, namely, significant, medium and insignificant. Regions are also identified where the introduction of the dual form of education already has a positive effect on IA. There are Kharkiv, Zakarpattia, Kherson, Vinnytsia, Khmelnytskyi, Rivne, Kyiv, Chernihiv, Chernivtsi, Cherkasy and Lugansk regions. If we focus, for example, on the development of bridge building, the introduction of dual training of

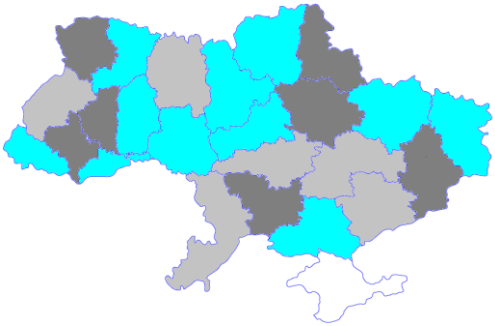
regions of the statistical uncertainty zone in the specialties related to the construction of bridges (namely, 192 “Construction and Civil Engineering” and 193 “Geodesy and Land management”) is relevant and urgent. Cartography of these areas is presented in Figure 2.2.

Table 2.3

Determination of region’s groups of influence of dual forms introduction of education

Region	Correlation coefficient	
Zaporizhzhia	-0,8286	From medium negative to close relationship
Kyiv (city)	-0,8114	
Zhytomyr	-0,7671	
Kropyvnytskyi	-0,7214	
Lviv	-0,6451	
Dnipropetrovsk	-0,6260	
Odesa	-0,6177	
Donetsk	-0,2151	Statistical uncertainty zone
Sumy	-0,0025	
Ternopil	0,0205	
Ivano-Frankivsk	0,1735	
Mykolaiv	0,2096	
Poltava	0,2365	
Volyn	0,2578	
Kharkiv	0,4310	From medium positive to close relationship
Zakarpattia	0,4955	
Kherson	0,6610	
Vinnytsia	0,6768	
Khmelnytskyi	0,6866	
Rivne	0,6913	
Kyiv	0,7103	
Chernihiv	0,7187	
Chernivtsi	0,8381	
Cherkasy	0,8433	
Luhansk	0,9271	

Next, it is necessary to present a cartogram of educational institutions that provide training for specialists in specialty 192 “Construction and civil engineering” and 193 “Geodesy and land management” (Figure 2.3).



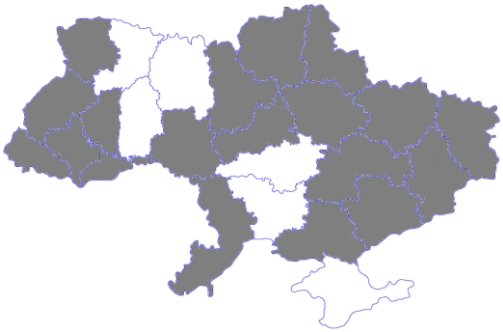
- dual education implementation zone;

- statistical uncertainty zone;

- zone of low potential for the implementation of dual education;

- zone of statistical information lack.

Figure 2.2 Cartogram of the zones of dual education in Ukraine
Source: created by the authors



- educational zone;

- zone of educational institutions lack.

Figure 2.3 Cartogram of the regional distribution of educational institutions of Ukraine training in specialty 192 "Construction and civil engineering" and 193 "Geodesy and land management"
Source: created by the authors

Next, we will conduct a comparative analysis of the cartograms, presenting their visibility below, and identify those regions that are inherent in all the possibilities for introducing a dual form of education in order to increase the investment attractiveness of the regions in the context of financial support.

Based on the analysis of the three cartograms, it is possible to determine the most potential regions to increase their investment attractiveness in the context of their financial support (Figure 2.4).

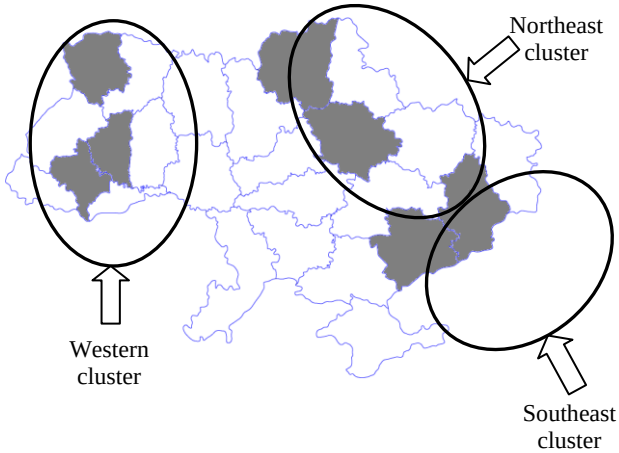


Figure 2.4 The regional clusterization of dual education implementation for the purpose of financial ensuring of Ukraine bridge building

Source: created by the authors

Based on the clustering carried out, it is possible to determine three clusters, namely:

- the Western cluster (Volyn, Ternopil and Ivano-Frankivsk regions);
- the Northeast cluster (Poltava and Chernihiv regions);
- the Southeast cluster (Donetsk and Zaporizhzhia regions).

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EVALUATION OF THE ORGANIZATION'S PERFORMANCE IN CONNECTION WITH THE CREATION OF FINANCIAL STATEMENTS

Introduction

The presented article is a summary of theoretical approaches for evaluating the results of the organization in accordance with the reflection of performance and performance measurement, as well as its reporting in financial statements, which are in the sense of Slovak legislation, the final reflection of the organization.

1. The company and its basic attributes

We define a company as a combination of production factors through which the owners plan to achieve set goals (for example, maximizing their income, improving social status, achieving economic power, etc.). Companies exist to produce and distribute products, provide services to their customers. It is their basic mission. However, their success is influenced by the high dynamics of changes in the environment in which they operate. The future state of the company (its products, production factors, transformation process, financial resources) is indicated by the company's goals. The goal of the company is a measure of the future, it expresses the future results of the company. It can be said that the goals of the company represent the end points to which the fulfillment of the company's mission is directed. The mission of the company creates in itself a set of specific, realistic and achievable goals of the company. In business practice, a set of goals is monitored and created, we speak of a target system, which is proof that not only owners or managers are involved in creating goals, but also other entities are taken into account, such as employees, customers, etc.

The production company and its activity can be characterized as a creative process, the function of which is the creation of utility values and represents the main activity of the company. The basic characteristics of its operation include:

- production program,
- technology used,
- complexity of products,
- participation of nature, technology and man,
- composition of products, method and degree of repeatability of production.

During business activities, the company undergoes a transformation process. It is divided into three basic activities, which are:

- procurement of production factors,
- production of products and services,
- sales.

In the procurement phase of production factors, various types of costs arise in the organization. In the production process, inputs are converted into outputs and outputs are created. Revenues are generated in the sales phase.

A business process can be defined as a dynamic system whose basic elements are activities. It has three parts that are interconnected and intersect. In mutual combination, they form a dynamic system – a

business process.

Parts of the transformation process:

- material, which is reflected in the concept of "business transformation process" and in the narrower sense represents the process of material transformation of business inputs into outputs,
- value, which is reflected in the concept of "corporate reproduction process" and in the narrower sense of the word represents the monitoring and appreciation of invested funds (or capital), i.e. value relationship between inputs and outputs,
- organizational, which is reflected in the concept of "business combination process", which monitors the organization of transformation activities (transformation of inputs to outputs), mutual combinations of production factors, financial and information flows.

The company as a transformation system has basic characteristics. It focuses on the creation of outputs, i.e. to prepare products for the market and customers in general, without specific direction to pre-known customers.

On this basis, the following model of the material and value course of the business transformation process was formed. Both spheres complement each other and overlap each other.

TRANSFORMATION PROCESS		
INPUT	**TRANSFORMATION**	**OUTPUT**
short – term assets long – term assets employees	cost generation consumption depreciation	return economic result

Figure 2.5 Model of the course of the company's transformation process

2. Performance and efficiency of the company

Performance represents the finished item (i.e. manufactured products, served customers, etc.). Performance can be defined in a general sense as the result of a certain activity. It can have both tangible and intangible forms. However, if we consider performance in the economic sense, we can perceive it as the performance of the employee (the degree of performance of his tasks forming the content of his work,

the performance of the company, which can be imagined as a quantity of results over time, i.e. what the company produces and provides). The monetary expression of external performance is the revenue recorded by the accounting system, which is one of the basic monetary (or rather cash) economic categories.

Performance increases the value of the organization's assets and the condition for its recording in accounting is its monetary expression. We call this money revenue in a broader sense, and mostly the main component of an organization’s revenue is sales of goods, products and services. In addition, the organization may report e.g. sales of materials, fixed assets or securities.

In a business environment, this quantity is well and accurately measurable. Internal services are then the results of the activities of internal departments, which are sold to internal customers – individual departments and their task is to ensure comprehensive conditions for the creation of external services.

In general, we can express the capacity of a production unit as a result of its performance and the time during which it is in operation. The performance of the production equipment is always considered as the maximum productivity per unit of time, usually one hour, with annotated quality and strict adherence to the technological process and product quality. Their determination is based on the label (rated) power, taking into account specific conditions. The performance of production equipment must be expressed in products, just as the production capacity is expressed, it can only be expressed in technical units. The performance of a production facility shall be determined on the basis of production capacity standards, which determine the maximum quantity of products that can be produced per unit of production at a given production facility.

Efficiency of the company is a measure of achieving the results of an organization or its processes. The relationship between performance and the efficiency of the company can be described, to some extent, in a simplified way as the relationship between the result and the course of the activity carried out, so that:

- performance is the final state, resp. the result of this activity,
- efficiency of the company is a characteristic (description) of the achieved result or its course.

The following figure shows the process for evaluating the efficiency of the company (Figure 2.6).

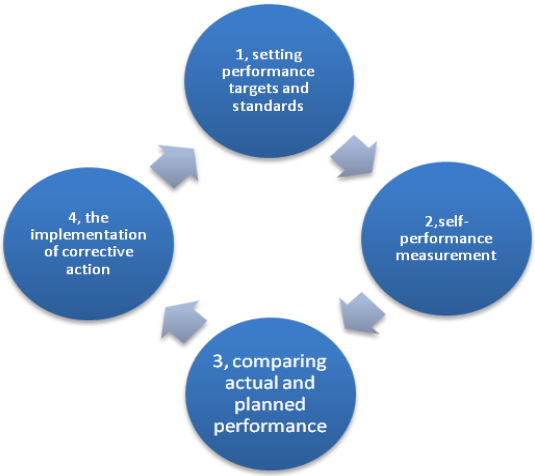

Figure 2.6 Steps of the control process focused on evaluation of the efficiency of the company

3. Performance reflection in the final reports

The basic financial statements according to the valid Slovak legislation consist of the balance sheet, profit and loss statement (income statement) and cash flow statement.

The following figure shows the basic link between the company's financial statements, through profit and cash.

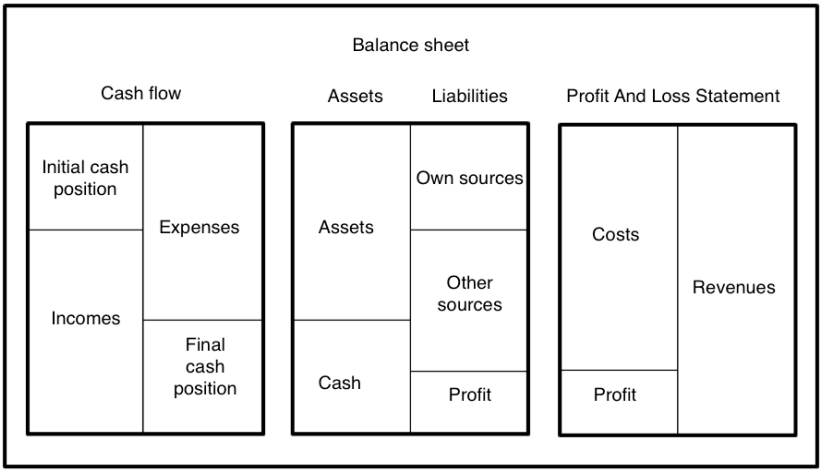

Figure 2.7 Bindings in the statements of the company

3.1. Balance sheet

The balance sheet is a transparent and arranged form of monetary comparison of assets and liabilities and findings of equity in accounting form as of a certain date. Its basic function is to provide the organization with an overview of its financial situation in the company on a certain day. Therefore, the balance sheet is compiled at least once a year at the end of the accounting period, but organizations also make the balance sheet more frequently, on a quarterly or monthly basis (as required).

The accounting standard does not show exactly what the individual balance sheet items should look like, but presents their minimum scope. Each company then expands them in more detailed way, as needed, and adds additional information. It also remains up to the company to decide whether to report the items of assets and liabilities as short-term and long-term, or to decide to report them according to the degree of their liquidity.

The vertical structure of the balance sheet expresses the relationship between individual items of assets and liabilities in one time period (evaluates the structure of assets and liabilities). The horizontal structure of the balance sheet allows us to compare indicators over time, i.e. for two accounting periods. On the assets side, it consists of four columns, on the liabilities side, no adjustment is made.

The form of the balance sheet tells what the company owns, i.e. what is the structure of the company's assets, from what sources did it get its assets, i.e. the structure of capital, such as its financial situation, the degree of its indebtedness and liquidity, and others. By comparing two balance sheets for two consecutive years (periods), it is possible to find out how the financial situation develops and to take the necessary long-term and short-term measures accordingly, leading to the effective development of the company.

3.2. Profit and loss statement (income statement)

The profit and loss statement is a statement that provides information about income and expenses of the company. Their difference results in the result of the company's management (profit or loss) for the analyzed (accounting) period. Revenues and costs, as well as the economic result, are divided in the profit and loss statement into three areas – economic, financial and extraordinary. The data presented in the profit and loss account are streams, i.e. accumulated.

The recognition of costs and revenues within the financial statements is made in this statement (Income Statement).

Assets	The Structure of the Balance Sheet		Liabilities
the value of all items in which the company has invested	Long - term assets (fixed assets)	all sources, from which the assets were obtained	Own capital
	- long - term tangible assets		- basic capital
	- long - term intangible assets		- funds
	- long - term financial assets		- retained earnings from previous years
			- profit from the current year (+, -)
	Current assets		Other sources
	- inventories		- long - term liabilities and loans
	- receivables		
	- investments (short - term assets)		- short - term liabilities and loans
	- money		

Figure 2.8 Basic structure of the balance sheet

Source: authors' own processing

The income statement is directly linked to the balance sheet, in the item profit or loss in the current accounting period, which is part of the equity recognized in the balance sheet and in the profit and loss statement, is calculated as the difference between income and expenses for the accounting period.

The rule is that:

line 100 of the balance sheet = line 61 of the profit and loss account.

The profit and loss statement is compiled in the so-called stepped form. A single item in the income statement is referred to as the income statement (we distinguish between cost and revenue). In this context, the term income statement is also used to refer to the income statement.

The economic result is considered to be the basic indicator assessing whether the activities in the company are performed successfully. It represents the difference between revenues and costs. This is despite the fact that the assessment of a company's value and changes is based more on discounted net cash flows expected in the future. These are the primary cause of investors' interest in the company. Ideally, however, profit is the best expression of how the potential to generate positive cash resources has changed in the future.

The profit and loss statement is a source of information about the entity's profitability. The data for the compilation of the statement are drawn from accounting class 5 – Expenses and accounting class 6 – Revenues. It is compiled in a vertical form – items of costs and revenues

are presented below each other in the required form. The internal breakdown of accounts in accounting classes 5 and 6 is based on the principle of incompatibility of costs with revenues (the gross principle applies to the accounting of costs and revenues, where each incurred cost is charged to the relevant cost account in accounting class 5 and 6).

The profit and loss statement – company

TOTAL COSTS :	TOTAL REVENUES :
I. Costs of the economic activity: - Costs incurred for the acquisition of goods - Consumption of energy material and other non-storable supplies - Services - Personnel costs - Taxes and fees - Depreciation and provisions - Residual value of sold property - Other costs of economic activity	I. Revenues of the economic activity: - Revenues from sale of goods - Revenues from sales of own products - Revenues from sales of services - Revenues from the sale of fixed assets - Other income from economic activity
II .Costs of financial activity: - Securities and shares sold - Interest expense - Foreign exchange losses - Other financial expenses	II. Income from financial activities: - Revenues from the sale of securities and shares - Income from short - term financial assets - Interest income - Foreign exchange gains Other income from financial activities
Profit before tax - Income tax **Profit after tax**	

Figure 2.9 Form of profit and loss statement – simplified

According to the law, costs and revenues cannot be offset against each other. Costs and revenues are recognized in the entity in the accounting period in which they are incurred, regardless of the date on which they are paid. They are accounted for and reported in the accounting period to which they are temporally and materially related.

3.2.1. Costs

In any type of operation, even if passive, costs arise. Therefore, the relationship of costs to the volume of performance is one of the most important and therefore the most monitored data with respect to the results of management in the organization. The change in the volume of production directly affects the development of costs, while the individual cost types behave differently. In search of the optimal volume of production, we must know the development of costs and determine changes in costs since the change in volume of production. We calculate this using the response coefficient as the ratio of the percentage change in costs and the percentage change in performance. The resulting value can be positive or negative.

3.2.2. Revenues

Revenue is the performance that is expressed in cash and represents an increase in the economic benefits of an entity. They consist mainly of revenues from performed services. They express the amounts of money that have been received by the organization, regardless of when they were collected. Revenues are outputs, expressed in monetary units. From an economic point of view, they represent the reimbursement of costs that have been incurred in the production of services, while increasing by profit.

REVENUES = PRICE / unit of output or product x QUANTITY).

Revenues are divided into individual activities according to:

- income from ordinary activities, which includes income from economic activity and income from financial activity. This division is shown in Figure 2.10.

3.2.3. Economic results

An important financial indicator that expresses the success and efficiency of business activities, especially in relation to invested capital, is the economic result. In monetary form, it expresses the effect

of the cycle of assets in a given company and expresses whether the assets invested in the business in the form of inputs are less, or greater than the valued results in the form of outputs. It can be identified in the accounts for a certain period (year or month) as a source of increase or decrease in assets. By monitoring the achieved profits or losses over time, analyzing changes in cost and revenue items, comparing the results achieved with the results of similar companies, investors and other users of accounting information can evaluate the success, respectively failure of transactions made during the period and anticipate their future development. The profit or loss is an irreplaceable output that includes financial statements prepared in accordance with internationally accepted accounting standards. The result of management can theoretically be determined in accounting in two ways.

Division of the revenues in the accounting	
Revenues from ordinary activities	**Revenues from the economic activities**
	Financial revenues

Figure 2.10 Division of the revenues in the accounting

The first is the method based on the principle of accrual, i.e. the recognition of the financial benefits of transactions at the time they are incurred, not at the time organizations receive or issue funds for them.

The second method is based on cash flows. Using this method, transactions involving income and expenses are reduced to those in which there has been a corresponding change in the amount of cash at the same time.

The legislation of the Slovak Republic specifies the requirements for the classification and method of accounting for costs and revenues so that the reported profit is comparable with the profit reported by the company in the previous period. The creation and structure of the economic result within the accounting legislation of the Slovak Republic is regulated by the Act on Accounting (431/2002 Coll.) And the measures of the Ministry of Finance of the Slovak Republic no. 4455/2003 - 92, which lays down the details of the accounting procedures in the general chart of accounts for entrepreneurs accounting in the double-entry bookkeeping system. Revenues, especially revenues from the sale of products or services and goods, are among the basic factors in generating profit or loss for a given period, so it is important to determine when they were recognized as revenue.

Conclusions

As we outlined in the article, evaluation and measurement of performance requires monitoring of performance in a specific form, i.e. evaluation of individual processes that make up the overall production process, which raises the need to introduce management of individual processes, especially those that make up the highest amount in sales. Process management represents the continuous improvement of the results of the functioning of the organization and is therefore a promising step in improving the results of the organization.

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Chapter 3

ENSURING COMPETITIVENESS AND THE FORMATION OF NEW FORMS OF ENTREPRENEURSHIP IN PANDEMIC CONDITIONS

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ENSURING THE COMPETITIVENESS OF RESTAURANTS BY DETERMINING THE QUALITY OF DIETS

Introduction

A qualitative index of a product is a quantitative characteristic of one or several properties of a product, which characterize its quality, and is considered in terms of certain conditions of its creation, exploitation or consuming (Azgaldov, Kostin, 2011; Topol'nik, Ratushnyj, 2008) [1, 2].

According to the amount of characterized properties the indexes are divided into simple and complex (Topol'nik, Ratushnyj, 2008) [2]. Simple qualitative index identifies one of its properties, for example contents of water, sugar, fat etc (Kuzmin et al, 2014, 2016, 2017, 2020)

[3-7]. They are determined by the industry regulatory document.

Complex index identifies several properties of a product. It can be related to both set of properties, which determine quality and certain group of properties (Topol'nik, Ratushnyj, 2008) [2]. If ever one index is equal to zero, complex index is also equal to zero (Azgaldov, Kostin, 2011; Topol'nik, Ratushnyj, 2008) [1, 2].

There are two methods of a product quantitative estimation – differential and complex. A product quantitative estimation is a set of operations, which includes: qualitative indexes' nomenclature selection of a product, value determination of these indexes and their comparison with basic indexes (Niemirich, Novosad, 2013) [8].

Qualimetric methods can be used in any food as well as the results of their research. Method of a product quantitative estimation is based on comparison of the set of simple indexes' values of an estimated product with a certain set of base indexes' values, called differential (Topol'nik, Ratushnyj, 2008) [2].

Complex method of a product quantitative estimation is based on expressing of the estimation rate by one number, which is a result of grouping of selected simple indexes to one complex index (Azgaldov, Kostin, 2011; Topol'nik, Ratushnyj, 2008) [1, 2].

Each qualitative index, being a quantitative characteristic (extent) of one of object's quality model (fact) should reflect (to greater or lesser extent) the ability (property) of the object (fact), meet public demands (interests, values) in certain conditions. Therefore, in order to form a qualitative index we should take into account following qualitative components: public demand, certain conditions, object and extent of its meeting. Qualitative index should provide an answer to the question: to what extent is this object (fact) able to meet public demand (interest, value) (Topol'nik, Ratushnyj, 2008) [2].

Well grounded choice of production indexes in estimating its qualitative rate has high priority. In order to make this choice, we should have at hand the nomenclature of qualitative indexes' groups which meets demands of need and sufficiency.

Materials and methods

The daily ration of human nutrition (breakfast, lunch, dinner) and the norms of the physiological needs of the average person – to determine the complex quantitative assessment of the quality of diets. An additive mathematical model as most widespread in a qualimetry is used for joining the quality rating into the generalized (complex) index. Methods

– qualimetric (Azgaldov, Kostin, 2011; Topol'nik, Ratushnyj, 2008) [1, 2]. Method of a diet complex quantitative estimation (Topol'nik, Ratushnyj, 2008) [2]:

1. Index values for set diets are determined from the formula:

$$P_{ij} = \frac{M_{ij}}{\sum M_{ij}}, \tag{3.1}$$

M_{ij} – content of nutrient materials in group j in nutrition products included in the diet.

2. Analogously, due to recommended norm, basic indexes are determined:

$$P_{ij}^{basic} = \frac{M_{ij}}{\sum M_{ij}}, \tag{3.2}$$

M_{ij} – regulatory i nutrient material in group j of daily ration material.

3. Simple indexes' estimation of proteins, fats, carbohydrates is calculated by the formula:

$$K_{ij} = \left(\frac{P_{ij}}{P_{ij}^{basic}} \right)^{z}, \tag{3.3}$$

P_{ij} – index of a nutrient material in daily ration;

Pij^{basic} – basic (balanced) value of index of a nutrient material in daily ration (according to norms of physiological needs);

z – index, that considers the influence of changing index value on qualitative rate of an object, that is equal to plus 1 in proteins and carbohydrates content estimating and minus 1 in fats content estimating.

4. Weight coefficient value of nutrient materials m_{ij} is calculated by the formula:

$$m_{ij} = \frac{\dfrac{\sum P_{ij}^{basic}}{P_{ij}^{basic}}}{\sum \left(\dfrac{\sum P_{ij}^{basic}}{P_{ij}^{basic}} \right)}. \tag{3.4}$$

Complex qualitative index of meal due to nutrient materials equation for two-level structure is determined from the adaptive model:

$$K_o = \sum_{i=1}^{t} M_j \cdot \sum_{j=1}^{n_i} m_{ij} \cdot K_{ij} \quad , \qquad (3.5)$$

M_j – weight coefficient value of nutrients.

Results and discussions

According to norms of physiological needs of a common person we have developed complex qualitative index of meal.

Norms of physiological needs of a common person at the age from 18 to 59 for total amount of nutrient materials, g: 617 (proteins – 88; fats – 107; carbohydrates – 422); total amount of mineral matters, mg: 11150 (sodium (*Na*) – 5000; potassium (*K*) – 3750; calcium (*Ca*) – 800; magnesium (*Mg*) – 400; phosphorus (*P*) – 1200); total amount of vitamins, mg: 90,3 (thiamine (B_1) – 1,6; riboflavinum (B_2) – 1,8; perydoxine (B_6) – 1,9; cevitamic acid (*C*) – 85,0).

1. Complex quality rating of breakfast

Due to norms of macronutrients, mineral matters and vitamins content, included in breakfast dishes, the calculation of nutrient materials found in canteen menu is provided (Table 3.1).

Absolute values of qualitative indexes of macronutrients, mineral matters and vitamins calculated by the formula (3.1) are the following: for proteins – P_p= 0,19 fats – P_f = 0,32; carbohydrates – P_c = 0,49; sodium – P_{Na} = 0,65; potassium – P_K = 0,23; calcium – P_{Ca} = 0,02; magnesium – P_{Mg} = 0,02; phosphorus – P_P = 0,09; thiamine – P_{B1} = 0,01; riboflavinum – P_{B2} = 0,01; perydoxine – P_{B6} = 0,01; cevitamic acid – P_c = 0,97.

Analogously to the recommended norms of physiological needs basic values have been determined from the formula (3.2). Basic qualitative indexes of macronutrients, mineral matters and vitamins are the following: for proteins – P_p^{basic} = 0,15; fats – P_f^{basic} = 0,17; carbohydrates – P_c^{basic} = 0,68; sodium– P_{Na}^{basic} = 0,45; potassium – P_K^{basic} = 0,34; calcium – P_{Ca}^{basic} = 0,07; magnesium – P_{Mg}^{basic} = 0,03; phosphorus – P_P^{basic} = 0,11; thiamine – P_{B1}^{basic} = 0,02; riboflavinum – P_{B2}^{basic} = 0,02; perydoxine – P_{B6}^{basic} = 0,02; cevitamic acid – P_c^{basic} = 0,94.

Table 3.1

Calculation of macronutrients, mineral matters and vitamins content included in breakfast dishes

Nutrient materials	**Name of the dish**					**Total**
	White cabbage stewed	**Butter.**	**Sausages of the 1st grade**	**Wheat bread from a flour of 1 grade**	**Black coffee with sugar**	
Weight, g	100	10	100	100	200	510
Macronutrients, g:						
proteins	1,0	0,06	18,8	7,6	0,34	27,8
fats	3,2	8,25	34,0	0,9	1,10	47,45
carbohydrates	5,5	0,09	3,8	49,7	14,32	73,41
Mineral matters, mg:						
Na	754,0	7,40	1808,0	488,0	0,00	3057,40
K	468,0	2,30	424,0	127,0	77,00	1098,30
Ca	20,6	2,20	14,0	26,0	10,00	72,80
Mg	10,4	0,30	34,0	35,0	0,00	79,70
P	10,2	1,90	298,0	83,0	13,00	406,10
Vitamins, mg:						
B_1	0,01	0,00	0,0	0,16	0,00	0,17
B_2	0,01	0,01	0,0	0,08	0,00	0,10
B_6	0,03	0,00	0,0	0,06	0,00	0,09
C	12,00	0,00	0,0	0,00	0,00	12,00

Weight coefficient value of nutrient materials m_{ij} has been calculated due to the recommended norms of physiological needs by the formula (3.4). Weight coefficients are the following: proteins – m_p = 0,50; fats – m_f = 0,40; carbohydrates – m_c = 0,10; sodium– m_{Na} = 0,03; potassium – m_K = 0,05; calcium – m_{Ca} = 0,25; magnesium – m_{Mg} = 0,50; phosphorus – m_P = 0,17; thiamine – m_{B1} = 0,36; riboflavinum – m_{B2} = 0,32; perydoxine – m_{B6} = 0,31; cevitamic acid – m_c = 0,01.

Simple indexes' quality rating of proteins, fats, carbohydrates has been calculated by the formula (3.3) using data from. Simple indexes' estimation is the following: from proteins – K_p = 1,31; fats – K_f = 0,54; carbohydrates – K_c = 0,72; sodium – K_{Na} = 1,45; potassium – K_K = 0,69; calcium – K_{Ca} = 0,22; magnesium – K_{Mg} = 0,47; phosphorus – K_P =

0,80; thiamine – K_{B1} = 0,78; ribofflavinum – K_{B2} = 0,41; perydoxine – K_{B6} = 0,35; cevitamic acid – K_c = 1.

Complex qualitative index of meal due to nutrient materials equation for two-level structure has been determined from formula (3.5), in which weight coefficient values (*M*) are for macronutrients – 0,35; vitamins – 0,55; mineral matters – 0,1.

Due to the calculation results breakfast has complex quality rate K_o = 0,67.

2. Complex quality rating of dinner

Due to norms of macronutrients, mineral matters and vitamins content, included in dinner dishes, the calculation of nutrient materials found in canteen menu is provided (Table 3.2).

Table 3.2

Calculation of macronutrients, mineral matters and vitamins content included in dinner dishes

Nutrient materials	**Name of the dish**						**Total**
	Vinaigrette with herring	**Rice soup**	**The liver is fried**	**Boiled pasta**	**Wheat bread**	**Kissel from cherries**	
Weight, g	150	500	50	150	100	200	1150
Macronutrients, g:							
proteins	3,84	9,1	11,6	15,60	7,6	0,14	47,88
fats	0,23	10,4	5,1	1,35	0,9	0,00	17,98
carbohydrates	20,58	33,0	6,9	112,80	49,7	28,60	251,58
Mineral matters, mg:							
Na	159,00	1254,0	304,0	15,00	488,0	6,00	2226,0
K	432,00	174,0	133,0	186,00	127,0	46,00	1098,0
Ca	73,95	39,2	9,0	27,00	26,0	10,00	185,15
Mg	69,00	30,2	11,0	24,00	35,0	4,00	173,20
P	102,45	76,7	213,0	130,50	83,0	12,00	617,65
Vitamins, mg:							
B_1	0,14	0,11	0,16	0,26	0,16	0,00	0,82
B_2	0,21	0,09	1,31	0,12	0,08	0,00	1,81
B_6	0,30	0,29	0,79	0,09	0,06	0,03	1,56
C	26,10	8,30	0,00	0,00	0,00	4,00	38,40

Absolute values of qualitative indexes of macronutrients, mineral matters and vitamins calculated by the formula (3.1) are the following: for proteins – P_p = 0,15; fats – P_f = 0,06; carbohydrates – P_c = 0,79; sodium – P_{Na} = 0,52; potassium – P_K = 0,26; calcium – P_{Ca} = 0,04; magnesium – P_{Mg} = 0,04; phosphorus – P_P = 0,14; thiamine – P_{B1} = 0,02; riboflavinum – P_{B2} = 0,04; perydoxine – P_{B6} = 0,04; cevitamic acid – P_c = 0,90.

Quality rating of simple indexes for a group of nutrient materials has been determined from the formula (3.3), as a result the values are the following: for proteins – K_p = 1,06; fats – K_f = 3.06; carbohydrates – K_c = 1,16; sodium – K_{Na} = 1,15; potassium – K_K = 0,76; calcium – K_{Ca} = 0,60; magnesium – K_{Mg} = 1,12; phosphorus – K_P = 1,33; thiamine – K_{B1} = 1,09; riboflavinum – K_{B2} = 2,13; perydoxine – K_{B6} = 1,74; cevitamic acid – K_c = 0,96.

Complex qualitative index of meal due to nutrient materials equation for two-level structure has been determined from formula (3.5). Due to the calculation results breakfast has complex quality rate – K_o = 1,65.

3. Complex quality rating of supper

Due to norms of macronutrients, mineral matters and vitamins content, included in supper, the calculation of nutrient materials found in canteen menu is provided (Table 3.3).

Absolute values of qualitative indexes of nutrient materials calculated by the formula (1) are the following: for proteins – P_p = 0,08 fats – P_f = 0,09; carbohydrates – P_c =0,82; sodium – P_{Na} = 0,41; potassium – P_K = 0,35; calcium – P_{Ca} = 0,09; magnesium– P_{Mg} = 0,02; phosphorus – P_P = 0,13; thiamine – P_{B1} = 0,01; riboflavinum – P_{B2} = 0,01; perydoxine – P_{B6} = 0,02; cevitamic acid – P_c = 0,95.

Quality rating of simple indexes of nutrient materials has been determined from the formula (3.3), as a result the values are the following: for proteins – K_p = 0,59; fats – K_f = 1,83; carbohydrates – K_c = 1,20; sodium – K_{Na} = 0,91; potassium – K_K = 1,05; calcium – K_{Ca} = 1,26; magnesium– K_{Mg} = 0,65; phosphorus – K_P = 1,16; thiamine – K_{B1} = 0,70; riboflavinum – K_{B2} = 0,75; perydoxine – K_{B6} = 1,00; cevitamic acid – K_c = 1,01.

Complex qualitative index of meal due to nutrient materials equation for two-level structure has been determined from formula (3.5). Due to the calculation results supper has complex quality rate – K_o = 0,94.

4. Complex quality rating of daily ration

According to the canteen menu original data is calculated for determination of daily ration (Table 3.4).

Table 3.3

Calculation of macronutrients, mineral matters and vitamins content included in supper

Nutrient materials	**Name of the dish**				
	Milk soup with rice	**Milk soup with rice**	**Custard gingerbreads**	**Tea with sugar**	**Total**
Weight, g	250	100	50	200	600
Macronutrients, g:					
proteins	6,15	3,05	4,80	0,20	14,20
fats	7,85	5,25	2,80	0,00	15,90
carbohydrates	23,20	20,80	77,70	16,00	137,70
Mineral matters, mg:					
Na	455,50	384,00	11,00	0,00	850,50
K	191,50	479,00	60,00	6,00	736,50
Ca	150,50	27,60	9,00	1,00	188,10
Mg	20,50	26,75	0,00	1,00	48,25
P	122,50	97,15	41,00	0,00	260,65
Vitamins, mg:					
B_1	0,05	0,14	0,08	0,00	0,27
B_2	0,16	0,13	0,04	0,00	0,33
B_6	0,08	0,32	0,06	0,00	0,46
C	0,65	20,10	0,00	0,00	20,75

Absolute values of qualitative indexes of nutrient materials are the following: for proteins – P_p = 0,14; fats – P_f = 0,13; carbohydrates – P_c =0,73; sodium – P_{Na} = 0,55; potassium – P_K = 0,26; calcium – P_{Ca} = 0,04; magnesium – P_{Mg} = 0,03; phosphorus– P_P = 0,12; thiamine – P_{B1} = 0,02; ribofflavinum – P_{B2} = 0,03; perydoxine – P_{B6} = 0,03; cevitamic acid – P_c = 0,93.

Quality rating of simple indexes of nutrient materials has been determined by the formula (3.3), as a result the values are the following: for proteins – K_p = 0,99; fats – K_f = 1,35; carbohydrates – K_c = 1,07; sodium – K_{Na} = 1,23; potassium – K_K = 0,79; calcium – K_{Ca} = 0,56; magnesium – K_{Mg} = 0,76; phosphorus – K_P = 1,08; thiamine – K_{B1} = 0,93 ribofflavinum – K_{B2} = 1,46; perydoxine – K_{B6} = 1,31; cevitamic acid – K_c = 0,98.

Complex qualitative index of meal due to nutrient materials equation for two-level structure has been determined from formula (3.5). Due to the calculation results daily ration has complex quality rate K_o = 1,15.

Table 3.4

Calculation of macronutrients, mineral matters and vitamins content for daily ration

Nutrient materials	**Name of the dish**			
	Breakfast	**Dinner**	**Supper**	**Total**
Weight, g	510,00	1150,00	600,00	2260,00
Macronutrients, g:				
proteins	27,80	47,88	14,20	89,88
fats	47,45	17,98	15,90	81,33
carbohydrates	73,41	251,58	137,70	462,69
Mineral matters, mg:				
Na	3057,40	2226,00	850,50	6133,90
K	1098,30	1098,00	736,50	2932,80
Ca	72,80	185,15	188,10	446,05
Mg	79,70	173,20	48,25	301,15
P	406,10	617,65	260,65	1284,40
Vitamins, mg:				
B_1	0,17	0,82	0,27	1,26
B_2	0,10	1,81	0,33	2,24
B_6	0,09	1,56	0,46	2,11
C	12,00	38,40	20,75	71,15

Obtained values of complex qualitative index of breakfast, dinner, supper and daily ration are brought in the Table 3.5.

Table 3.5

Complex quality rating of daily rations

Name	Breakfast	Dinner	Supper	Daily ration
K_0	0,67	1,65	0,94	1,15

Due to the data, we can draw a conclusion that the biggest value of the complex index K_{0max} = 1,65 is obtained in breakfast, the lowest value is typical for dinner K_{0min} = 0,67. Whereas, supper is considered to be the most balanced meal with value K_0 = 0,94, which is close to the optimal value of complex quantitative rating K_0 = 1,00. Quality rating of daily rations in hotels and restaurants provides an opportunity to

determine diet balance due to the norms of physiological need for daily ration.

Conclusions

Method of quality rating of daily rations in hotels and restaurants is considered. The structure of qualitative indexes and results of experimental research of complex diet quantitative rating are represented. Taking into account the norms of physiological need of a common person, complex qualitative rate of one meal and daily ration in a canteen is calculated. For this daily ration, complex qualitative indexes for group of macronutrients, mineral matters and vitamins are identified. The most balanced values of the complex qualitative index are determined which are common to super with rate K_0 = 0,94.

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ENSURING THE COMPETITIVENESS OF THE RESTAURANT BUSINESS IN UKRAINE IN THE PERIOD COVID-19 PANDEMICS

In Ukraine, the totality of all catering establishments is united by the concept of “restaurant business”. In a general sense, the restaurant industry is a branch of the national economy, the basis of which are enterprises characterized by the unity of forms, organization of production and customer service, which differ in type and specialization. It should be noted that the use of the above concept in our country officially began in 2004, when it was replaced by the term “catering” and in modern terminology the term “restaurant” means the type of economic activity of economic entities to provide services to meeting the needs of consumers in nutrition with or without leisure (Lee et al., 2013, 2020; Lin et al., 2020) [1, 2, 3].

The restaurant market is one of the most dynamic markets in Ukraine. He is extremely sensitive to the economic situation, exchange rate fluctuations and social factors.

In recent decades, the following trends have emerged in the development of restaurants economy:

– formation of new directions of modern cooking;

– deepening the specialization of restaurants;

– creation of international restaurant chains;

– improvement of forms of labor and implementation of scientific and technological progress.

According to rating of the World Bank, Ukraine at the beginning of 2020 was ranked 64th in terms of ease of doing business among 190 countries. It is more difficult than ours to do business, for example, in Greece, Sudan, and Iraq. Instead, our closest neighbors – Belarus, Moldova and Poland – are 49, 48 and 40 steps respectively. Note that a year ago Ukraine was in 71st place in this ranking.

Development of the restaurant industry (Kim, Jang, 2018) [4]:

– gives significant savings to social labor through more rational use of equipment, raw materials, materials;

– provides workers and employees with hot food during the working day, which increases their efficiency, maintains health;

– enables the organization of a balanced diet in children's and educational institutions.

Ukraine is always gaining momentum in the restaurant industry. New establishments open one after another, while former markets become new.

Due to the development of the tourism business, much attention is paid to the forms and methods of providing tourist services in restaurants, hotels, cafes and bars. Knowledge of a foreign language is now a prerequisite for working in a high or luxury institution.

The current realities of food and various sectors of the economy are characterized by a difficult situation, as the spread of the threat of COVID-19 has forced to change the activities of all enterprises (Mofijur et al, 2020; Liao, 2016; Kim, Lee, 2020; Chopra, Arora, 2020; Drake et al., 2020) [5-9]. This has changed the focus so much that some markets (such as online trading) have made a significant leap, while others are on the verge of survival (Sharma et al, 2020; Sheth, 2020; Nandi et al, 2020) [10-12].

According to program of Restaurant Automation named of Poster, 2500 Ukrainian institutions have shut down after two-week quarantine. This is 63 % of all the company's customers in Ukraine. Thus, we can assume that there are currently about 30000 institutions in the country. Selling’s of catering establishments in Ukraine from March 23 to 29

decreased by an average of 73 % compared to the same period before quarantine. Selling's fell sharply not only in the capital (by 78 %), but also in all major regional centers. Thus, in Lviv the figure fell by an average of 78 %, in Kharkiv – by 73 %, in the Dnieper – by 65 %, in Odessa – by 60 %. More than 160000 people lost their jobs in the restaurant business. Poster customers alone currently do not have 13000 employees.

Due to the coronavirus pandemic from March to May 2020, a large number of Ukrainian cafes and restaurants were temporarily closed; only some continued to work exclusively in the mode of delivery or issuing orders with them.

On the one hand, this has led to an increase in food delivery (20-25 %), but at the same time, due to the declining solvency of Ukrainians, instead of visiting restaurants, many began to prefer home–cooked meals.

According to a survey by the Union of Ukrainian Entrepreneurs, as of April 2020, almost 60 % of business owners continue to operate during restrictions (mostly large and medium-sized businesses), another 29 % – have stopped working (typical of microbusiness). At the same time, 51 % of enterprises are able to last only one month, and every fourth business will withstand 2-3 months of work in quarantine conditions and not go bankrupt; 6 % of entrepreneurs completely closed their business, this category included mainly micro and small businesses. Only 3 % of respondents indicate that their business will be able to work for a long time under the necessary conditions (rental vacation, remote access for employees, revision of the business model). One third of business owners (mostly micro-) report a 90-100 % drop in income since the start of quarantine. The same entrepreneurs have already laid off up to 50 % of the staff. Small and medium-sized businesses owners say that incomes have decreased by 25-50 % compared to the period before quarantine and have already laid off 10 to 25 % of employees. Loss of profits of large enterprises is 10-25%, there is a reduction in staff by 25 % by the end of restrictive measures (Shtohrin, 2020) [13].

The survey was also conducted by the Ukrainian Restaurant Association. It obtained the following results: in June 2020, 24 % of institutions in Ukraine worked only on summer playgrounds. 18% worked on the terrace and also delivered. 16 % of respondents said that their establishment worked with delivery and received guests on the terraces and in the hall, and 13 % – that fed guests on the summer

terrace and in the halls, but did not deal with delivery. 4 % worked in the hall and for delivery, 6 % only in the hall and 8 % only for delivery and removal. 11 % of respondents said their businesses were completely closed in June.

The developer of software for automation of cafes and restaurants Poster provided data on the decline in sales in the field of catering in Ukraine. In July 2020, sales fell by 54 % compared to the same month in 2019. At the same time, about half of market participants lost more than 30 %. The analysis was based on anonymous data on sales of 550 food establishments in Ukraine (Figure 3.1).

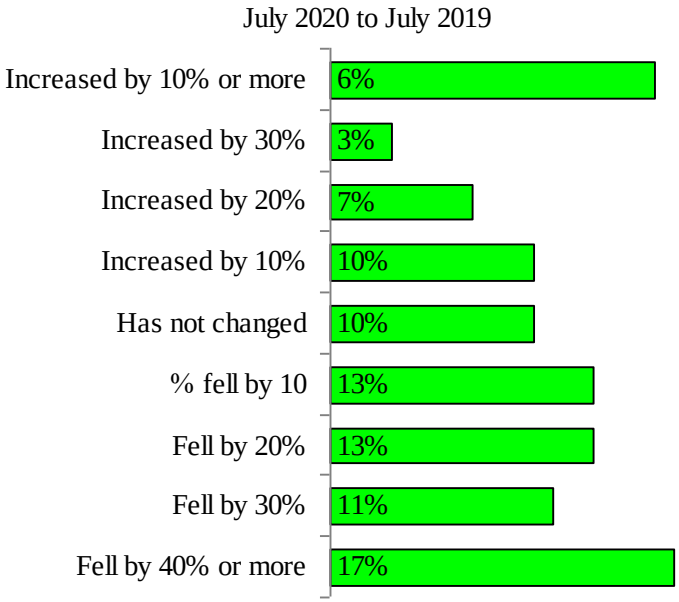

Figure 3.1 Revenue in catering establishments

Thus, according to preliminary data, the pandemic has significantly affected the development of the restaurant business (Mofijur et al., 2020; Kim, Lee, 2020; Chopra, Arora, 2020; Drake et al., 2020; Sharma et al., 2020; Crick, Crick, 2020; He, Harris, 2020; Hiscott et al., 2020) [5, 7-10, 14-16].

Ukrainian entrepreneurs offer their recovery strategy and “survival” tactics for small and medium-sized businesses, which include:

– total cost optimization in everything;

– negotiations on withdrawal/reduction of rent, deferral of loans for the quarantine period;

– retaining key employees/teams through business reorientation and grants from one's own pockets;

– only forced partial dismissal or salary reduction;

– reorientation/adaptation of business in new conditions (for example, catering establishments for delivery and self-removal; event industry – online events);

– transfer of business to online formats: management, communication with clients, advertising.

It should be noted that any crisis is an opportunity for business transformation and development. During the crisis, consumer preferences and demand will change, new niches for business will appear. It is important not to miss such opportunities for Ukrainian entrepreneurs.

The capital is no exception. Catering establishments were forced to adjust to the conditions of anti-epidemic measures in order not to somehow stop economic and business activities. Some carried out reorganizations, while others were not hindered by the new conditions of operation of economic entities and built new facilities.

Thus, in Figure 3.2 we can observe the dynamics of development of restaurant facilities in a pandemic in recent months in Kiev.

Competition forces business entities not to stop at the achieved level, but to constantly move and self-improvement: to improve the production and sales process, introduce new forms of production organization, progressive wage systems, all this increases productivity and product quality, and thus increases competitiveness.

Competitiveness of the restaurant business is an opportunity to form, maintain and use competitive advantages under conditions of variability of the external purpose to take leading positions in the market which offer similar services.

The processes taking place in the modern world transform the perception and behavior of customers of restaurant services: they become more careful and demanding to the concept of the product, its content, content, methods of consumption and service. Preference is given to the restaurant that will be able to provide the desired level of service at an affordable price. That is why the restaurant business, wanting to consolidate market positions and ensure profitability, must pay due attention to the development of a system of measures to increase their competitiveness.

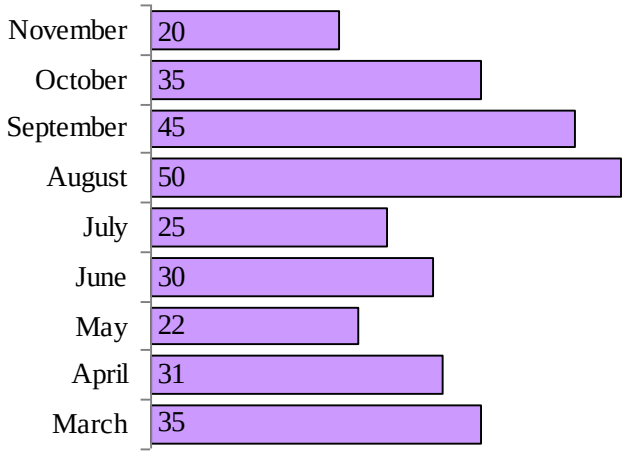

Figure 3.2 Dynamics of development of restaurant facilities in the city of Kyiv in a pandemic according to the POSTEAT editorial office

The level of competitiveness of restaurant business enterprises is influenced by a large number of internal and external factors. It will be more appropriate to focus on the factors that provide the company with advantages over competitors. The presence of these advantages makes it possible to form and ensure a sufficient level of competitiveness in the market in the long run. Competitive advantages are a set of key success factors that differ from rivals, which contribute to ensuring a stable leading competitive position in the market for a certain period (Chiu, Yang, 2018; Cronjé, Plessis, 2020) [17, 18]. The competitive advantage of the enterprise is the result of more efficient than competitors management of processes of formation and development of such qualitative and quantitative properties of a product which are important for the buyer (Saeidi et al, 2018; Rzepka, 2017) [19, 20].

Among the most important competitive advantages can be outlined: the location of the institution; material and technical condition; pricing policy; improving the quality of services; professional development and competence of employees; creation of an effective system of motivation and stimulation of staff work; introduction of loyalty programs taking into account consumer expectations; optimization of acceptable pricing policy; introduction of constant monitoring of the competitive state of the market; application of innovative technologies that will provide the

possibility of a unique service; effective organization of marketing policy; development and implementation of additional services (Table 3.6).

Competitiveness can be ensured only with a comprehensive approach to the formation of competitive advantages based on new management methods, modern technologies, qualified staff and a high level of service.

Thus, the competitiveness of restaurant enterprises is a heavy and difficult struggle in the services market.

Hundreds of new restaurants are opened every year, from fast food to themed and highly elite restaurants, therefore it is necessary to pay considerable attention to features of development of the given sphere, and especially the pace and dynamics of its development, to monitor how consumers react to a particular type of restaurant business, to consider in the context of their preferences so as not to suffer damage, and at the same time as much and forced to close.

The main criterion for survival became flexibility and the ability to quickly adapt to market conditions. Under the biggest kick are establishments with a large area, with a long time of cooking without delivery. However, an even more important criterion is belonging to one or another restricted area.

The restaurant business market has become difficult to predict. However, most of the current anti-crisis trends – for example, the active development of delivery – will give new impetus to market players. Restaurateurs will increasingly reduce costs, optimize business processes, look for their ideal ratio of the cost of food and the price at which it will be sold. Those who overcome the crisis will become much more competitive and successful in the future.

In our opinion, the proposed measures for the formation and development of competitive advantages of enterprises will be able to help institutions stay in the restaurant market and have an advantage over others.

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Table 3.6

Measures for the formation and development of competitive advantages of the restaurant business

Functional sphere of activity of the catering establishment	Measures on formation and development of competitive advantages
Operating	– improving the quality of table reservation services; – expansion of additional services; – increasing the uniqueness of services; – maintaining the optimal technical level of the institution; – compliance with standards and other regulations in the activities of the institution;
Financial and investment	– increasing efficiency and level of service; – search and attraction of innovative sources of financing of activity of public catering establishment; – formation of the optimal price policy on the principle of conformity of the price of quality of services;
Personnel	– improving the quality and culture of customer service; – growth of quality staff; – conducting trainings and staff training in order to improve the skills of personnel;
Marketing	– the use of methods to stimulate the provision of services: promotions, bonuses, etc.; – formation of consumer loyalty; – rebranding to attract more consumers; – sommelier services; – karaoke; – smoking rooms; – discounts for regular customers; – use of external public relations: outdoor advertising, online promotion, articles in editorial offices, etc.;
Innovative	– the use of high-tech innovations to automate the restaurant business; – application of a design and creative approach to the process of providing restaurant services, design of summer terraces, facades, etc.; – use of “new products” (those not yet seen by the restaurant business market) and new or combined cooking technologies; – a new production process.

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VIRTUAL ORGANIZATIONS AS A PERSPECTIVE FORM OF DOING BUSINESS IN MORDEN CONDITIONS OF UNCERTAINTY: CONCEPT AND SPECIFICS

Nowadays, in spite of pandemic and global recession, clearly indicate rapid internationalization and globalization that lead to increased competition between companies of different organizational forms in a global scale. The entire globe is passing at a dramatic pace through the pandemic period. The modern global business environment is turbulent and evolving requiring as flexible as well as fast responses. At rhe same time the global business is in a position to analyze and interpret the global social, technical, economic, political and natural

environmental factors more clearly. Top management of the operating business structures is forced to respond quickly to highly dynamic changes in the global business environment and identify and implement strategies that would meet the needs of the global market. New products and services, the development of global economic system and further globalization of businesses create new types of risks and challenges for the management of operation processes and practices. In order to obtain full benefits of these changes business must organize itself according to radical new lines.

At the same time, companies should not forget about how minimize their transaction costs. According to empirical data one of such perspective forms of business organization is virtual corporation that can be organized and conduct their activity by the mean of network relationships. So the need for work systems' flexibility, adaptability and development seem to be a central justifier for virtual organizational structures.

The intensification of the globalization of economy and businesses multiplies the number of boundaryless business structures creating multi-site working in multiculturalism contexts. Many firms, especially, small and medium-sized, are networking to uphold and prevent weakening of their current position in the marketplace. And new information and communication technologies are being introduced to facilitate the ongoing change, especially they are considered to be the main driving factor of the societal change into knowledge society. Rapid progress of information and communication technologies has enabled a decentralization of work. As we can see now mobile and wireless technologies revolutionized the working life totally and made it possible to work whenever in any place.

Therefore, the virtual corporation and network relationships are examined from a transaction cost theory point. Also it should be noted, that virtual corporation cannot be viewed as a basic formula for easy success: simply by adopting a new model, companies will not be able to reduce costs and increase profits. Rather virtual organizations are a complex idea, that should be started very carefully and like all complex concept, this one is also not without risks. At the same time we should note, that such form of business organization as virtual corporation is a present-day but not a completely new phenomenon. It became widespread more than ten years ago, but in spite of this fact there is no the unique approach to what such organizations is. This is not surprising, since the concept itself is completely deliberately not

structured and remains mobile in order, at least in part, to avoid rigid hierarchy and bureaucratization, which are often inherent in traditional organizations. So, for example, Burnatt and Bleeker looked at the technological underpinnings of the growth of virtual organizations, focusing on how it depends on communications technology. The research works by such authors as Grenier and Metes, Goldman, and others, as well as Dunbar is devoted to the functioning of virtual organizations, their structure and functioning. Edith Penrose, in her turn, considered virtual organizations to be one of the new types of companies emerging from networking; her ideas were subsequently taken up by authors such as Franke, who considered virtual organizations from the standpoint of web organizations. In the meantime, according to Osborne and Pennings, virtual organizations are nothing more than a logical completion of existing trends in strategy and innovation. So a common feature in all presented views on the nature of virtual business structure is that it can be understood as a temporary network of companies with flexible boundaries and an intensive use of electronic facilities which support the network activities. Referring to computer science, the concept of virtuality implies that all essential parts of an object do exist though not in real shape. In the context of management and organization studies, a virtual organization refers to an inter-organizational relationship among companies those results in a network structure.

According to Byrne, the definition of the virtual corporation structure can be presented as a specific kind of contemporary network of companies that come together quickly to exploit fast-changing opportunities. Within virtual corporation, member firms can share costs, knowledge, experience, skills and access to global markets with each partner contributing what it's best at. In addition, Davidow and Malone consider the virtual corporation as an almost borderless organizational form with continuously changing interfaces, which shows a high degree of flexibility while it is grounded on the decentralized competencies that are brought in by the participating companies. The traditional advantages attributed to virtual organizations include adaptability, flexibility, the ability to respond quickly to market changes, reducing of real estate expenses, eliminates lack of access to experts. Among disadvantages in the material concerning virtual organizations can be mentioned the following: problems with the technology; the lack of physical interaction; such dysfunction as low individual commitment, role overload, role ambiguity, absenteeism, and social loafing may be

exaggerated in a virtual context;

We will try to highlight the features that are characteristic of most of them:

Slight physical structure: it is much less developed in virtual organizations than in traditional ones. The tangible assets of virtual organizations, for example, office buildings, warehouses, etc., are not so large, and those that are available are usually distributed geographically. If we consider the situation from the point of view of exploitation, decentralized objects are preferable to huge and concentrated in one place.

Bleeker argues that virtual companies "are identified by not shared by specific walls or physical locations, but by interconnected networks". Barnatt suggested that in the future, organizations could be fully structured in a virtual format; communication between computers would replace physical infrastructure, and companies would exist exclusively in cyberspace. The economy of scale in this case is almost inevitable.

Trust in communication technologies: Goldman and other researchers define virtual organizations as "a new organizational model in which technologies aew used to dynamically connect people, assets and ideas." However, they admit that, "although technologies ultimately greatly facilitate the work of virtual organizations, they will not become an essential condition of their success". Modern information and communication technologies play a key role and are considered by many to be the core of the concept of virtual organizations. We agree that on some level, this is true. The Internet and other technologies that are being created and developed today are becoming critical. Every organization needs a structure that defines it and gives it shape. Traditional companies use a physical structure such as an office building; in virtual organizations, a communications network serves the same purpose. Technologies are the tool that allows you to get the job done. They make the work of organizations easier, but they are not organizations themselves – just as we cannot say that an office building is a traditional company or represents a company.

Work mobility: The use of communications networks rather than buildings and physical assets means that the physical location of work is less important in nowadays. This eliminates the need for departments and teams to work in close physical contact with each other. Project teams can be assembled from many industries, countries and regions. In case of a virtual organization form of business, people no longer must be

in the same office never mind in one part of the world in order to work together. Such staff belongs to virtual teams, which can be defined as groups of people working independently with a common shared purpose across a space, time limits and organizational boundaries using communication technologies. Such virtual teams allow people to communicate across the border without leaving the comfort of their workplace wherever it is. No need to do office work. So the rule is becoming more and more true: the office is where they work, and not vice versa. This allows companies to significantly reduce costs. But also we should take into account that basic elements that constitute effective and successful traditional face to face teams are also important and necessary for high potential and successful virtual team in the virtual corporation. From an external view a network of companies appears as a uniform corporation as regards overall performance, which requires at same time also sharing a vision, management and overall strategy. At the same time, the required resources of the participating partners are not centrally located with the virtual corporation but are made available by the mean of modem information and communication technology. In other words, it is a prerequisite that the participating companies/units or workers of a virtual corporation be linked by electronic information exchange and communication to perform their operating functions. The key points of success include the following interrelated elements:

- High level of mutual trust. Trust within a virtual company means that the partners within the network rely on each other to share unforeseen benefits and costs related to the exchange. Such trust leads to a reduction of uncertainty and complexity by excluding possible trust-breaking behavior of the other partners. Due to the fact that trust is specific to the virtual organizations, it contributes to achieving inherent stability within the network. The level of trust in a virtual form of business does not just depend on the quantity of participants in the network but also on the intensity, quality and context of communication between the partners
- Clear and understable communication. Members of such virtual structure would reduce opportunistic behavior in order not to damage their image or reputation. So the effective practice use of communication, especially on the first stages of the development of the virtual corporate, plays an equally important rile in gaining and maintaining trust. The success of the virtual company also depends on the ability of its team members to exchange information in face of the challenge of place and time. There is no room for doubt that the

readiness to share knowledge and competencies with partners depends on the level of trust between the partners as well as on communication behavior in the way that the less information a company gets and the more information it is asked to disclose and provide, the less it will be interested in being the member of such network. At the same time the well developed system of communication has a high impact on the speed and level of quality of the product, service or process development. Thus, it is the task of the virtual organization's management not only to manage and control the stream of competencies and knowledge between exchange partners but also to reduce conflict. Due to opportunistic behavior and uncertainty implications, the higher the level of trust in a virtual corporation creates the lower the transaction costs will be.

- Strong and high-potential leadership. The leadership is another feature that engenders success in both traditional as and virtual companies. Effective leader should also demonstrate the skills to manage with complex situations and contradictions by performing multitasking leadership roles simultaneously. High-potential leadership also means the capability of the early detection of problems that combined with early corrections will not only save money but also other resources, first of all money.
- Cultural space that can be defined not as the sum of the views and values of all members of the company but rather as a space where they all converge at a single point. The closer these values and views are, the stronger the cultural space becomes. In order to build a developed virtual cultural space, it is necessary that each employee of the organization meets three characteristics: employees should be aware of their own role and the importance of the relationships with other inside and outside the organization. The next one is that employees, both individually and as a team must be able to manage technologies of that level that satisfies the organization and use them to develop relationships and manage their own knowledge. Also team members, despite its virtuality, must share a lot of values and procedures so the teamwork is as harmonious as possible
- Appropriate level of technology. Due to the functioning of the network relations, information technology is of high importance for the success of a virtual corporation because it influences the speed of the information exchange process between the participants and the corporation’s ability to cream off synergies independently from time and distance. Thus, information technology in the form of electronic mail,

internet or groupware enables the virtual corporation to achieve its targets more flexibly, faster and more cost-efficiently. Types of technologies, used by virtual companies, can be divided into several classes: communication technology, information storage technology, monitoring and scanning technology, analytical technologies, simulation technology, design technology.

The next essential feature of this type of corporate structure *is mixed forms*. Grenier and Metes refer to virtual organizations as hybrids, while Goldman refers mostly to collaboration agencies that bring together "core competencies, resources and opportunities to work with clients". According to Franke, a virtual web organization is the coexistence of companies and business elements that are not bound by any structural constraints and work together to achieve mutually beneficial goals. Such alliances can be formed for a short period, for example, for the implementation of expensive and risky projects related to research and development, or for a long time, such as virtual supply chains. In this case, as a result, it is possible to reduce costs per employee and per project.

Borderlessness and Involvement: As we discussed earlier, by their very nature, virtual organizations are deliberately blurred. They are not limited so that we perceive them as separate, legally defined organizations and companies. They are able – and often it actually happens to unite suppliers and distributors in such tight supply chains that it is difficult to notice where one company ends and another begins. The partners of the virtual corporate business structure provide different value and non-value activities and assets within the value chain of the virtual organization that culminates in a real product offered to the customer.

Virtual organizations can also bring customers together: using the concept of providing services in the market, according to which the client is part of the production process.

Such virtual companies build systems in which the consumer and the supplier are closely related to each other and the implementation of the service requires the participation of each of them. Interactive financial services are perhaps the most developed form of such phenomenon. As in other cases, the cost of servicing each client is being reduced; so many banks offer, for example, the best interest rates for new online accounts.

Flexibility and responsiveness: Virtual corporations can (at least in theory) be formed from various disparate elements to achieve a specific

business goal and demonstrate results after it has been achieved. In addition, assets can be quickly restructured and redeployed as required by a changed strategy and global market conjuncture. Since operating costs are low, costs and risks are reduced when implementing radical course changes. Of all the requirements for virtual organizations, this one is probably the most controversial. This is clearly where the potential for flexibility of virtual organizations is obviously hidden; however, in order to implement it, flexibility and dynamism in the work of managers and employees are required. In order to introduce innovations, new approaches to the strategy of personnel management are required.

There are different types of virtual organizations. They can be classified by starting from the needs of human interaction and communication. The communication concerning the joint group task organizes people to work together. The main division is made between communities and work organizations. Communities are driven by common interests and informal communication, whereas work organizations by common goals and tasks, and more formal communication. They both can be realized with virtual qualities.

The idea of a virtual organization overlaps with several other modern management concepts, especially knowledge management theory and the theory of “learning organizations”. The latter was introduced by North American management gurus Peters and Waterman, they used the expression “learning organizations” for companies that invested in research and development and viewed knowledge as an organization's main assets. Ari de Gueuze and Peter Senge from Royal Dutch / Shell Company and Massachusetts Institute of Technology, stated in their work in the late 1980s the fact that knowledge could be regarded as something valuable in itself. Later Ari de Gueuze made the now famous assertion that in the future, the ability to learn faster than competitors might be the only the company's competitive advantage that deserved support. This fact in its turn, leads to the idea of “knowledge capital”: knowledge is considered as an input factor of the same level as and traditional factors such as capital determined by production, land, labor, and money.

Such researchers as Davis and Meye considered knowledge capital consistently with other types of capital, for example, with organizational or human capital, and their interrelationships are discussed in detail by us further. Warner and Witzel have suggested that one of the key tasks of the general manager is the acquisition, use, creation and

dissemination of knowledge in the organization, as well as the development of model for their production and distribution among it members. Albert Bradley commented more broadly the expansion of industries that depended on the volume of accumulated knowledge illustrating, through various economic parameters, in what way knowledge was used to create and add value. The linking of these concepts to virtual organizations is extremely simple: technological networks, on the basis of which these organizations are built, exist for the transfer of knowledge. The knowledge in its turn can take various forms – from the well-established ones adopted for financial or market statistics, to any others. According to the classics of the Japanese school of management Nonaka and Takeuchi, networks can be used not only to circulate knowledge, but also directly to create it. However, the founder of the computer firm that bears his name, Michael Dell (1999), astutely pointed out that the function of networks was to transfer knowledge. Knowledge is the basis of the life force of virtual organizations. The term “knowledge capital” almost completely conveys their importance. Knowledge is not only a contributing factor; the creation, transmission and practice implementation of knowledge has an impact on almost everything what a virtual corporation does. Disabling the flow of knowledge is like the disconnection of main capacities or physical disconnection of the network. If there is no knowledge to transfer, the network is empty and useless, and the managers and employees connected to it are largely isolated and powerless.

How does this differ from the work of traditional organizations? They also depend on knowledge: on the professionalism of employees, on how well managers understand market trends, on research to introduce new products and improve existing ones, etc. The difference is not fatal as far as the importance of knowledge in itself but at the same time the types of knowledge required and the ways of using them differ much more. And just as technological networks are idle without the knowledge that is transmitted over them, so in virtual organizations, knowledge is completely useless if there are no networks through which it can be transmitted. In traditional organizations, there are various ways of transferring knowledge, including through conversations and meetings. In virtual organizations, where people work remotely or make purchases through remote sites, it all depends on the network's ability to process knowledge and transfer it in an intelligible form. Thus, the role of technology becomes critically important, and not only because it makes possible the existence of the virtual organizations, but also

because in case of incorrect operation of the technologies the flow of knowledge can be interrupted, as a result of which employees and customers will be outside the system and will remain in complete ignorance.

Technology and knowledge are two critical important components in building a virtual corporation. However this form of business organization will never become active without the addition of a third, equally important element – people. Not accidently, but in new theories such as "learning organizations" or knowledge capital / knowledge management, the emphasis is on the human factor. The same is true for virtual organizations. In principle, communication and information technologies provide managers and employees with a wide range of tools to enhance communication and knowledge management in virtual organizations. We argue that in virtual organizations it is not technology that dominates, but the concept of the central role of man: managing people is much more important than technology, but one cannot be completely separated from the other. In virtual corporations, both are necessary – this is the management of the people who manage the technologies.

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Chapter 4

RESULTS OF STUDIES OF THE IMPACT PANDEMIC ON SOCIO-ECONOMIC PROCESSES

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THE EMPLOYMENT SPHERE OF UKRAINE IN CONDITIONS OF THE PANDEMIC CRISIS OVERCOMING: PROBLEMS AND APPROACHES TO REGULATION

Ukraine's economy, employment sphere and labor market in recent years, preceding the global and national crisis caused by the COVID-19 pandemic, have been strongly influenced by global financial, economic and regional socio-political instability. These circumstances manifested in a number of negatives associated with the lack of autonomy, imbalance, significant shadowing of the national economy, the dominance of its resource and raw material orientation, which, reinforced by situational political conditions, continues to hinder the decent implementation of processing, service and science-intensive sectors in foreign markets.

The level and dynamics of wages in Ukraine for decades have actively contributed to the deformation of the labor market, as well as to the establishment of territorial, economic (sectoral, branch), professional and qualification, other socio-status disparities and asymmetries (including in spheres of equalizing the competitiveness' starting conditions, optimizing mechanisms and environment of vulnerable groups' social involvement).

Wages in Ukraine does not fully perform the reproductive function, allowing a significant part of the population to meet only part of the basic (vital) needs, without taking into account the whole amount of the relevant socially necessary component of consumption. The situation

with this important component of the formation and realization of the national economic potential is characterized by the State Statistics Service data, according to which the minimum wage and remuneration close to it in recent years received about 40% of employees (actually, the minimum wage was received by 7.1% of full-time employees in December 2010, 2.7 – in 2015, 6.6 – in 2017 and 5.4% – in December 2019).

Experts say, that the lack of mobility of labor resources within professions, branches and sectors, regions, specialties, enterprises, so as the lack of significant changes in the quality of labor and other life spheres (even with a sufficient level of workers' labor movements) are the urgent problems of proceeding to effective employment in Ukraine.

The fairly high intrastate workforce mobility in the conditions of a relatively low level of new job creation does not provide a noticeable improvement in employment parameters in the sectoral and territorial aspects. This conclusion is confirmed by the highest employees' turnover rates registered in sectors with high temporary, seasonal and part-time employment – construction, trade and public catering, communications.

Structural unemployment remains an important factor in the functioning of the national labor market and employment. The basis for the gradual and long-term growth of intersectoral, professional and qualification disparities, in particular embodied in increasing the scale of hidden unemployment and layoffs, is the inconsistency of the public production' existing structure with dynamic changes (including globally generated ones) in the conditions for resources' efficient use. An indication of negative changes is the creation of jobs in a number of service economic activities with low requirements for the workforce quality, as well as a significant increase in the number of employees in the simplest occupations.

According to the Federation of Ukraine' Trade Unions, in January-February 2020 (i.e. on the coronavirus epidemic eve), the number of persons who used the services of the State Employment Service, increased by 8% in comparison to the corresponding period of 2019. As of February 1, 2020, the number of registered unemployed amounted to 373 thousand.

On the other hand, in January 2020, the Ministry of Economy' forecast, based on the State Employment Service data, expected an increase in the number of registered vacancies during the year by 6% compared to 2019 [1]. These expectations were partly confirmed by the

decline in unemployment recorded in the first months of 2020. There was also a positive dynamics of wages' growth.

At the end of January 2020, the Fund of Compulsory State Social Insurance of Ukraine against Unemployment reported an increase in expenditures on active programs of employment promotion for UAH 500 million that has been achieved including due to the Fund's budget balancing and to expectations regarding the excess of income over planned expenditures [2].

The program for small business "Affordable loans 5-7-9%" was launched from the beginning of February 2020. According to the Government's expectations, during the current year this program could provide benefit approximately to 50 thousand borrowers, which should lead to the creation of 90 thousand new jobs. The mentioned program (under the working title "Come Back and Stay") was intended mostly for the employment of Ukrainian cross-border migrant workers in national economy.

The set of highlighted problems significantly complicated the functioning of Ukraine's employment sphere and labor market in the period of the emergency regime due to the coronavirus pandemic, while government measures to protect employees and self-employed workers, to support the national economy in the conditions of markets' narrowing, to prevent and mitigate the unemployment negatives were limited, unsystematic and insufficiently consistent.

Thus, according to the anti-crisis draft laws aimed at overcoming the pandemic consequences and adopted by the Verkhovna Rada: quarantine can be a basis for receiving partial unemployment benefits; entrepreneurs were exempted from paying unified social tax for a 2 months period.

One of the first normative initiatives, which regulate the implementation of new rules for the unemployed registration and assignment of unemployment benefits, was the adoption of the Law No. 530 from 17.03.2020 "On Amendments to Certain Legislative Acts of Ukraine aimed at preventing the emergence and spread of coronavirus disease (COVID-19)".

According to the Government's decisions:

– during the quarantine period employees (both state servants and employees in the private sector) retain their labor rights and wages, so it's forbidden to dismiss them. According to the Minister of Justice [3], the Cabinet of Ministers made a range of recommendations to state bodies, local authorities, enterprises, institutions and organizations of all

forms of ownership and state-owned banks during the quarantine period, that is: not to dismiss employees working at home and employees on vacation at their own expense; refrain from using dismissals of citizens provided for in paragraphs 1, 3, 4 of Art. 40 of the Labor Code that regulate reorganization, liquidation, as well as absenteeism, i.e. grounds that may arise objectively in connection with the circumstances of quarantine and emergency situation;

– the state aid should be paid to persons who have been laid off due to quarantine;

– the procedure for receiving unemployment benefits for the quarantine period is simplified (registration of the unemployed should be carried out from the first day after submitting the application to the Employment Center; the appointment of payment should be made from the first day of registration also);

– persons who have lost their jobs due to quarantine are entitled to receive subsidies for utilities.

In order to regulate legal relations and avoid adverse consequences for employers and employees in the current circumstances (quarantine and restrictive measures), recent changes in legislation provided for the employer's right to instruct the employee for performing work at home or to grant him unpaid leave at his own request. Unpaid leave for the entire quarantine period must be granted to persons caring for a child under the age of 14.

Taking into account the Government's recommendations on the organization of the labor process properly, many companies didn't lay off staff during the quarantine period, sending workers on paid or unpaid leave, or transferring them to remote work. Both "remote" work and granting leave were arranged by the employer's order, about which the employee had to be informed.

Resolution of the Cabinet of Ministers "On approval of the amount, procedure for granting and returning funds aimed at financing benefits for partial unemployment for the quarantine period" from 22.04.2020 determined the amount of benefits for partial unemployment for each hour by which was reduced working hours for the employee, calculating up to two thirds of the tariff rate, but not more than the minimum wage.

According to this normative act, assistance on partial unemployment for the quarantine period should be provided by the territorial body of the central executive authority, that implements the state policy in the sphere of employment and labor migration, to employees in case of

wages' part loss due to forced reduction of statutory working hours in connection with the activities' suspension (reduction) at the employer request for this assistance payment to employees. Payment of partial unemployment benefits to employees for the quarantine period is made by the employer with whom the employment relationship is established; such employer mustn't have debts on the unified social tax for the last 6 months. Assistance is also provided to small and medium-sized businesses, including individuals – entrepreneurs. The amount of partial unemployment benefits for the quarantine period is expected to be provided to employers for the period of activities' suspension (reduction), as well as within 30 calendar days after the quarantine end. All employees with whom the employer has an employment relationship (except persons receiving a pension) are entitled to assistance.

The amount of partial unemployment benefits for the quarantine period is determined by the financial capabilities of the Ukrainian Fund of Compulsory State Social Insurance in Case of Unemployment and can't exceed the minimum wage established by law. Partial unemployment benefits for the quarantine period are not provided to employees who receive payment for downtime, as well as in the case of the new production (products) development in accordance with Art. 113 of the Labor Code.

In addition to above-mentioned measures, the Government has implemented a number of organizational measures to return compatriots who have worked officially or informally in other countries and expressed a desire to return (including due to job loss during the pandemic, household disorder in the country of employment, concerns for health and life of themselves and their families' members).

According to the statement of the President of Ukraine dated May 1, 2020: state structures planned to allocate resources to obtain cheap bank loans totaling UAH 30 billion by entrepreneurs who did not work during quarantine; another UAH 6 billion should be aimed at increasing the minimum unemployment benefit, as well as providing state compensations to employers, who have stopped working due to the coronavirus pandemic, for the employees' salary payment during the relevant period [4].

In general, the scenario of economic decline in early 2020 was not considered by government agencies, and the policy concerning the state budget filling had a lot of problems. Thus, the social benefits provided by emergency measures have already become and will continue to be a significant burden for the state budget and extra-budgetary social

protection funds.

The Ukrainian Fund of Compulsory State Social Insurance in Case of Unemployment, in particular, will lose a part of income expected at the year beginning due to the exemption of entrepreneurs from paying a unified social tax for a strict quarantine period (as practice has shown, at least for 2 months), as well as due to the suspension and elimination of a number of small and medium-sized businesses caused by sharp restrictions of consumer demand and profits' loss during the quarantine period.

Lack of funding has led to more than a modest amount of unemployment benefits during the quarantine period for persons registered with the State Employment Service: the minimum benefit has been increased from UAH 650 to UAH 1,000, the maximum benefit is UAH 1,800.

Taking into account national realities of employees' dismissal during the quarantine period, current legal grounds indicate that [5]:

– in case of consent between the employer and the employee, the labor contract may be terminated by agreement of the parties (Art. 36 of the Labor Code of Ukraine) or terminated at the employee's own request (Art. 38 of the Labor Code);

– regardless of the quarantine or restrictive measures implementation, the employment contract may be terminated at the employer's initiative, for example, in case of the enterprise liquidation, reduction of the number or staff of workers (paragraph 1, part 1 of Art. 40 of the Labor Code of Ukraine), the employee's incompatibility with the held position due to the qualification lack or health problems (paragraph 2, part 1 of Art. 40 of the Labor Code), absenteeism (paragraph 4, part 1 of Art. 40 of the Labor Code) and in other similar cases.

Legal conflicts may also be based on the fact that such concepts as "work at home" or "remote work" are not regulated by current legislation.

Unfortunately, according to the information of the director of the State Employment Center of Ukraine dated 30.03.2020 [6], employers took almost no measures for the labor relations' preservation; many of them discussed with employees the possibility of terminating employment with the consent of the parties in the first week of quarantine, trying to optimize costs and save on the employees' severance pay. In some cases, there was an absurd situation when

employers came with their employees to employment centers and demanded to register them as unemployed. Employers' objective grounds for such decisions, peculiarities of their current practice of implementing other measures to retain employees (various types of leave, working hours' reductions, downtime declarations, etc.) will be possible to find out, as expected, from the huge number of lawsuits about reinstating at work.

Many public activists expressed initiatives to prosecute employers for firing employees during quarantine under Art. 172 of the Criminal Code of Ukraine "Gross violation of labor legislation"; however, according to the experts of the State Employment Center, such facts are difficult to prove legally.

The results of economic activity, including the amount of losses of economic sectors and individual enterprises in Ukraine during the restrictive measures to overcome the coronavirus pandemic (both at the national level and in a wide range of countries in the world), including those related to workers' social distancing, the ban on a number of direct contacts of personnel with consumers of goods and services, a sharp reduction in opportunities, and therefore demand for passenger transit services, other products to improve the life comfort, conduct and provide various leisure activities in national and foreign markets, directly depend on the scale and direction of involving business entities to ensure the state integrity and social stability, as well as on the budget filling (primarily on funding the protected expenditures and national security' measures).

Thus, the key factors of Ukrainian enterprises' effective economic activity during the quarantine became:

– the level of their export orientation in the case of the production specialization in raw materials and semi-finished products that has stable demand in foreign markets (for example, specialization in the mining and processing of ilmenite, polymetals, precious metals, etc.);

– participation in international cooperation projects for the production of machinery, equipment, devices and appliances;

– involvement in the logistics of anti-epidemic and other quarantine measures (transit and wholesale, primarily under contracts, as well as retail of medical equipment, components, consumables), including for state and local budgets' finances, state extra-budgetary and non-commercial funds;

– affiliation with critical infrastructure' branches and sectors

(production and supply of energy and gas, activities to ensure the railways' functioning, treasury, post office, certain types of communications, TV- and radio broadcasting in the public procurement framework), so as with other sectors that responsible for meeting common public and vital needs (construction and maintenance of a network of roads and structures of such specialization, utilities' sector, including the house adjoining territories' maintenance; production and supply of food, bottled drinking water, sanitary and hygienic products, their storage and logistics; retail trade and catering industries that in the period of emergency and several sectoral and regional quarantine measures have received permission for certain forms of customer's services – wholesale, retail, with the right to open retail space or by prior order; banking);

– organization of remote access to consumer goods and services (e-commerce, provision of appropriate intermediary and support services, including picking and delivery of individuals' and legal entities' orders).

Assessing the prospects for the Ukrainian employment and labor market development (both its legal and shadow segments) in 2020 and in the next year, experts agree on the expected rise of unemployment in the result of the national economic crisis as part of the global phenomenon caused by the production and consumption fall (including reduction of their resources at the level of the state, business entities – from large to small ones, as well as households), restrictions on the transit of goods, services and population (tourist flows, legal and illegal labor migrations) due to the COVID-19 pandemic.

An additional factor in expanding the workforce supply in the Ukraine's labor market is a further increase in the insurance length required for retirement.

The growth of the unemployed contingent is accelerating. According to the President of the Ukraine's Chamber of Commerce and Industry dated 20.03.2020 [7], approximately 600-700 thousand enterprises (including small ones) and educational institutions, where 3.5-4 million people are employed, stopped working for a certain rather long time due to the quarantine. According to the State Employment Service of Ukraine, as of March 23, 2020, there were 354.5 thousand registered unemployed, which was almost corresponded to the same indicator in the previous year. During March, the number of officially registered unemployed increased by 22% compared to the same period in 2019, as of April 13, reaching 387.5 thousand people, 71.4 thousand of whom were registered during the quarantine period (for comparison, as of

April 7, 2020, 364 thousand people applied to the employment centers for unemployment benefits; this is 13% more than on the corresponding date in 2019).

Thus, according to economic indicators for 2020 adjusted by the Government, the unemployment rate is projected to increase from 8.1% expected at the beginning of year to 9.4% in its end [1]. Unemployment peak, as expected by the Cabinet of Ministers, came in the first half of this year, while in the second half a significant economic recovery and improvement of the situation, unfortunately, was not observed. Entrepreneurs were more pessimistic in their forecasts of unemployment; according to experts of a number of business associations and public organizations, its rate only in the economy' legal segment could eventually reach 12% in 2020 [1].

The level of the average salary, according to government forecasts, in 2020 will decrease from 12 thousand to 11 thousand UAH per month.

According to the Ministry of Finance, as of April 24, 2020, 369 loans worth UAH 232 million were issued within the program for small businesses "Affordable loans 5-7-9%", which corresponded to only 0.7% of the potential borrowers' contingent, which planned by the Government (50 thousand people) [8]. According to experts, only about 600-700 jobs (out of the stipulated 90 thousand ones) were created for these loans. Significant problems with filling the budget and financing the spectrum of social payments, as well as increasing of social discontent due to quarantine restrictions as source of income lack received by the population (including by business entities, which, according to experts, now form about 60% of Ukraine's gross domestic product) forced government authorities to intensify measures to compensate for losses, promote and support business. According to the latest report of the Ministry of Finance, since the start of the program "Affordable loans 5-7-9%" authorized banks have already issued 6059 loans for a total amount of UAH 14.154 billion; however, only 19.1% (UAH 2.705 billion) of which were actually accounted for investment loans, 11.1% (UAH 1.566 billion) – for anti-crisis loans at 3%, while 69.8% (UAH 9.883 billion) were transactions on previously issued loans' refinancing [9].

The aforementioned negatives and their adverse impact on the employment sphere and the labor market are likely to intensify further due to the numerous problems in the functioning of the national and world economies, which occurred both at the beginning and during the current year. Among them, first of all, it should be noted:

– the significant deficit of the Ukraine's state budget and reduction of domestic enterprises – exporters' revenues due to unjustified reduction of exchange rates, in particular in 2019 and the first half of 2020;

– relatively low level of wages of skilled workers and professionals (especially in comparison with neighboring and developed countries of the world) that combined with considerable unmet demand for them in a wide range of branches;

– reduction of demand for raw materials on world markets;

– strengthening of a powerful crisis expectations in some developed countries' stock markets and economies, particularly due to over-capitalization of their total market assets (shares of national business entities) as compared to the quarterly and annual gross domestic product.

The prevailing resource and raw material orientation of the national economy limits the prospects for sufficiently dynamic diversification of the employment sphere and a significant expansion of demand for decently remunerated workforce in the labor market.

At the same time, the level of general (secondary) and vocational education, qualification and entrepreneurship of compatriots – applicants for formal and informal employment continue to provide a growing demand for their labor and, accordingly, the competitiveness of this Ukrainian workforce segment in the markets of European developed countries (in particular, in sectors that require large amounts of unskilled labor (especially in agriculture, construction), and serving economic activities in the UK, Finland, a number of EU countries – Germany, Poland, the Czech Republic, etc.). The recent relaxation of quarantine measures in a number of European countries makes it possible to realize the appropriate potential of some Ukrainian workers, which is confirmed by the requests from foreign companies and employment agencies regarding the departure of workers who have concluded contracts for harvesting crops, work in the service sector, etc. with these economic entities.

Taking into account the national economy' situation, post-quarantine resumption of cross-border labor migrations will contribute to some improvement of employment and wages in Ukraine, since the return of migrant workers, according to experts, should significantly increase competition in the domestic labor market, stimulating the decrease of usual salaries.

At the same time, the prospects for stabilization and further development of Ukraine's employment in the post-quarantine period are closely interrelated with systemic measures to increase the population' purchasing power in the main areas of:

– revival and innovative modernization of the economy' real sector (in particular, its export-oriented branches);

– raising the minimum wage, directly coordinated with the social subsistence level;

– implementation of targeted programs to support the unemployed, as well as active programs to stimulate employment and self-employment.

Therefore, the adjustment of Ukrainian employment problems first of all requires:

➢ effective programs for supporting small and medium-sized businesses as a measure that ensures the revival and preservation of numerous jobs, contributes to a significant reduction in social tensions, prevents marginalization and cross-border outflow of workforce. In particular, following the United States example, companies and entrepreneurs, who did not lay off staff during quarantine, could receive: additional preferences in the case of applying for loans; reduction of interest rates on them; "credit vacation" or write-off of accrued interest for a certain period;

➢ support of the domestic producer, creation of conditions for its material and technical base' modernization, especially within:

– the public procurement (the corresponding total annual expenditures amount to approximately UAH 700 billion average in recent years [8]);

– implementation of infrastructure projects, including long-term ones (development programs for road network, critical infrastructure of various types, tourism industry infrastructure), taking into account the multiplicative impact of relevant activities on associated and cooperated branches and sectors of industry, transport, construction, logistics and services;

➢ innovative and service-oriented diversification of the national economy as an effective supplement to its resource, raw-material and agricultural specialization in the context of implementing the strategy for stabilizing the development pace and increasing competitiveness in world markets.

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VARIETY OF EUROPEAN ECONOMIES AND THEIR ECONOMIC BEHAVIOUR IN THE COVID-19 PANDEMIC

1. Introduction

Economic developments in 2020 have been fundamentally determined by the pandemic caused by the Covid-19 virus and the public health and economic policy measures taken in response. A decline in economic activity has been common in all affected countries, but its extent, process and structure has shown certain variations. This study seeks to answer the following question: Can the economic differences associated with the coronavirus be related to the socio-economic situation of a country at the outbreak of the crisis, and can deviations be detected in the short-term output variables of the economic crisis based on such vulnerabilities?

Our study focuses on European countries and is based on multidimensional clustering, in which the basis of group formation is the state of public finances (public debt and deficit), income distribution within society (social expenditures in the state budget and GINI indicator), external economic processes (export share), as well as exposure to tourism as a sector requiring mobility. The behaviour of the clusters thus created is analysed using four short-term trend indicators: labour mobility, unemployment, industrial production and risk spread data. Our initial assumption is that there is a correlation between economic behaviour during the crisis and the state of public finances, income distribution and external vulnerabilities prior to the outbreak of the crisis.

The current study is to be the initial element of a complex analysis

project that aims to understand the dynamics, correlations and interactions of the coronavirus pandemic. It is essentially relevant for our analysis that, in many cases, the data and time series necessary for drawing durable conclusions in-depth are not yet available, thus, our results can be considered as a first estimate. In the context of the certain impacts, further research is needed, but the correlations explored in this study may also help to define the direction of future research activities.

The creation of the clusters presented in this study is justified by the fact that market economies and fiscal policies do not operate in exactly the same form, with identical institutions and processes (Hall and Soskice, 2001). The approach separating European social models has already started to recognise this, which can also be regarded as a kind of classification of fiscal models as it classifies the quality of public taxes and expenditures and the level of the balance of the budget as distinguishing features (Boeri, 2002; Boeri and Baldi, 2005; Sapir, 2005; Schubert and Martens, 2005). The following cluster analysis is based on a similar approach, aiming to make a distinction between economic models relevant to the crisis in the context of European market economies.

2. Applied methodology and data sources

Studies based on the cluster analysis procedure aim to establish an initial framework. This group formation maps out the economic and social conditions at the end of 2019 in certain Member States of the European Union. It presents the economic situation that was characteristic of each country when the SARS-CoV-2 (Covid-19) virus, and the resulting economic impacts, reached a given country, as well as the resulting economic effects. Cluster analysis forms the basis of the analyses performed.

From among the grouping procedures, one of the most popular econometric methods is cluster analysis, which results in homogeneous groups based on various variables. The 27 European Union Member States under review can be considered a small sample, which led us to use hierarchical clustering on the database created (without Luxembourg). Grouping was based on 6 variables. Two of the variables represent fiscal policy conditions, two represent the exposure of each economy to tourism and exports, and two represent the social situation. Each variable involved in the analysis can be measured on a metric measurement scale. Accordingly, the Ward procedure was used for clustering.

The cluster analysis was aimed to map out, as clearly as possible, the situation at the end of 2019 (in order to be able to study the short-term effects of the Covid-19 pandemic in a complex manner, both between and within clusters). Nevertheless, the data and analysis projected for that period would not reflect the relevant macroeconomic relations and situation. Accordingly, trends in the processes of recent years were mapped out using various simple statistical methods for each variable. During the analyses, 2016 was used as a baseline year, while in the case of data for the year under review, a bottleneck was created by the availability of data in international databases. (In the case of indicators reflecting the social and societal situation, the latest data set available for the whole sample is represented by the values at the end of 2018.) The exact descriptions of the variables are as follows:

- average change in the balance of general government deficit (-) and surplus (+) over the period 2016-2019 – percentage; (Eurostat)
- in the case of general government gross debt, the difference between 2016 and 2019 – percentage points; (Eurostat)
- the difference of exports of goods and services, % of GDP between 2016 and 2019 – percentage points; (World Bank)
- Travel and tourism total contribution to GDP, average of year-end data between 2016 and 2018 – percentage; (World Bank)
- Share of COFOG – GF10 – Social protection expenditures, three-year average of year-end data between 2016 and 2018 – percentage; (Eurostat)
- GINI indicator, three-year average of year-end data between 2016 and 2018 – percentage. (Eurostat)

The analysis of clusters formed on the basis of historical data was continued using four indicators suitable for the identification of short-term impacts:

- industrial production, volume index of production, index 2015=100, change was included in the calculations – percentage, (Eurostat)
- worker mobility, average of daily data, (based on Google Covid-19 community mobility reports), as a percentage of the baseline value, (Google Community Mobility database)
- unemployment rate – seasonally adjusted data, not calendar adjusted data, relative to the working age population – percentage, (Eurostat)
- government bond spreads – percentag point. (Bloomberg)

Our aim is to examine, based on the country groups created, whether any pattern can be identified in the outcome variables of the crisis caused by the pandemic based on the clusters arranged according to the economic, fiscal and social state before the crisis. In addition to providing a detailed picture of immediate economic responses that have been given in each country, the research identifies whether there is a correlation between the initial economic situation and the economic developments resulting from the shock caused by the pandemic.

3. Results

3.1. Clustering results

Based on the SPSS output dendogram using Ward linkage, we limited the rescaled distance up to 5, thus the seven clusters were determined which are represented in Table 4.1. Based on the analyses, these seven clusters can be considered the most homogeneous.

Table 4.1

The clusters created

Cluster 1: Not exposed to tourism	Belgium, Netherlands, Ireland, Poland
Cluster 2: Debt-free	Bulgaria, Estonia, Latvia
Cluster 3: Decreasing export exposure	Czech Republic, Hungary, Slovakia
Cluster 4: Socially sensitive	Denmark, Finland, Germany, Sweden
Cluster 5: Tourism-dependent	Cyprus, Greece, Croatia
Cluster 6: Debt-reducing	United Kingdom, France, Italy, Romania, Spain
Cluster 7: Deficit-increasing	Austria, Portugal, Slovenia

Source: own calculation

Note: the designations are to be understood as relative to other groups in each case

As far as item numbers are concerned, groups of almost identical size, including 3, 4 and in one case 5 countries, were created. The clusters created are clearly separated from one another and reflect the macroeconomic and social situation in recent years.

- Examining the differences between the individual clusters, it can be concluded that a surplus regarding the average balance of the budget was accumulated only by socially sensitive countries and ones with a

decreasing export exposure. The largest deficit was achieved by the countries of the debt-reducing and the relatively significant deficit-increasing cluster.

- This trend can also be observed in the development of public debt, because debt-reducing countries have the lowest debt reduction in the period under review. Fiscal discipline and the existence of structural imbalances may also play a significant role in this respect in the given group of countries. In contrast, compared to debt-reducing countries, average debt reduction in the group not exposed to tourism increased nearly tenfold, while in the initial deficit-increasing cluster it increased nearly elevenfold between 2016 and 2019.
- In the case of the indicator reflecting the change in export share, no significant differences can be identified. Nevertheless, debt-free countries and ones with a decreasing export exposure produced the highest per capita GDP growth, recorded a drop in export growth.
- A review of the indicator reflecting the contribution of the travel and tourism sector to GDP also clearly reveals that the highest exposure is characteristic of countries depending on tourism. The weight of the tourism industry is not negligible either in the case of Italy, Spain, the United Kingdom and France from Cluster 6 and countries of Cluster 7, i.e. Austria, Portugal and Slovenia.
- In terms of social expenditure, there is no significant difference between the clusters. The countries of the debt-free group deviate significantly from the overall sample, in a negative direction.
- There is no significant difference in the GINI indicators. Two additional variables were also included in the analysis, which will also be examined during the short-term cluster analysis. Based on year-end 2019 data, it can be concluded that unemployment rates are moderate (around 5 percent or lower) for most clusters, but the tourism-dependent and debt-reducing clusters are significantly different.

When forming the groups, fiscal variables can be considered key indicators in three clusters. These three clusters are the following: tourism-dependent, debt-reducing and deficit-increasing. The indicators describing external exposure became key group-forming criteria for 3 groups of countries: debt-free, tourism-dependent, and deficit-increasing. Looking at the countries of the debt-reducing group, the increase in export share is moderate. In these countries, the contribution of exports to the GDP is approximately 30 percent, which is quite low, meaning that dependence on foreign markets (foreign demand) is more moderate. In contrast, the group not exposed to tourism typically has a

high export share, so their sales revenues show a higher dependence on the economic situation of other countries.

The tourism sector represents a major source of employment, government revenues and foreign currency revenues for a number of developed and developing countries. The groups of countries most sensitive to revenues from tourism are tourism-dependent, debt-free and deficit-increasing countries. However, the countries not exposed to tourism and those with a decreasing export exposure are much less exposed to revenues from travel and tourism.

The GINI indicator, expressing income inequality, is the largest in the debt-free countries, meaning that inequality is the highest here. The least favourable value was recorded in Bulgaria. As another characteristic of the country group, the share of social expenditures is the lowest here. As a result, the group of debt-free countries includes those with the highest inequality, as opposed to the lowest share of social expenditures.

Inequality is the lowest in countries with a decreasing export exposure. An important contribution to this fact is that Slovakia and the Czech Republic have the most favourable values among the countries reviewed. Socially sensitive countries, the majority of which follow the model of the welfare state, as well as Germany, which can be described as a social market economy, and France, spend the largest amounts on social expenditures. This means that the public care system and the social safety net are characterised by very different sizes in the individual countries.

Based on the average, minimum and maximum values of the cluster-forming variables (balance of the budget, public debt, GINI indicator, social expenditures, share of tourism, export share), the following conclusions can be drawn.

- As far as the balance of the budget is concerned, it is Cluster 6 (debt-reducing countries) that differs the most with its higher deficit. From the point of view of budget balance averages, it is difficult to distinguish between the other six clusters. In terms of homogeneity, it is debt-reducing, debt-free (Cluster 2) and deficit-increasing (Cluster 7) countries that have a very strong internal coherence, and the three groups also take positions that can be distinguished from one another.

- Regarding public debt, countries with a decreasing export exposure (Cluster 3) and socially sensitive ones (Cluster 4) take almost identical positions with respect to both cluster average and low standard deviation (i.e. homogeneous composition). A similar observation can be

made when comparing the averages of the debt-reducing and deficit-increasing groups, while the extreme values show a heterogeneous composition. Cluster 2, made up of homogeneous debt-free countries, is different from the others with its low debt ratio.

- In the case of the GINI indicator, describing social exposure, the non-tourism-dependent Cluster 1, the socially sensitive and the deficit-increasing countries produce similar averages, a distinction can only be made between them based on the group extremes. The other clusters are different from each other in terms of average, but it is only the non-tourism-dependent cluster and the tourism-dependent cluster (Cluster 5) that can be considered relatively homogeneous. There are marked differences in terms of average social expenditure. Only the non-tourism-dependent cluster and the tourism-dependent countries have similar averages. However, the clusters are characterised by very strong internal heterogeneity. Only the debt-free countries are homogeneous, and only the deficit-increasing ones have a relatively small difference between their extreme values.
- As far as exposure to tourism is concerned, most clusters are homogeneous or show a relatively small difference between extreme values (except debt-reducers), and their averages can be distinguished from one another. There is little overlap between the clusters in terms of average export share as well; it is only countries not exposed to tourism and those with a decreasing export exposure that have nearly identical averages. As regards homogeneity, the average is a good.
- Indicator of debt-free, tourism-dependent and socially sensitive countries, as well as debt-reducing ones.

3.2. Behaviour of clusters during the first wave of the virus

Based on the variation data detailed in Table 4.2, the clusters cannot be described as nearly homogeneous in terms of the time series characterising the four crisis periods. In some months and for some indicators, however, certain clusters are well characterised by the cluster average. Examples include the change in industrial production for Cluster 1 in April, Clusters 3 and 6 in May, or, in addition to these two, Cluster 5 in June. In the case of unemployment, there are clusters in March and April, whose countries hold together within the group, with the exception of Clusters 5 and 6. In terms of mobility, however, only the April data of Clusters 2 and 5 can be regarded as nearly homogeneous, while in the case of the government bond spread, Clusters 2 and 4 behave like clusters.

Table 4.2

Standard deviation of indicators characterising the crisis period by cluster

		Cluster 1: Not exposed to tourism	Cluster 2: Debt-free	Cluster 3: Decreasing export exposure	Cluster 4: Socially sensitive	Cluster 5: Tourism-dependent	Cluster 6: Debt-reducing	Cluster 7: Deficit-increasing
Change in industrial production	March	7.05	6.90	6.77	10.81	5.52	10.39	9.75
	April	4.02	7.18	5.26	16.81	9.32	6.69	10.38
	May	8.80	11.16	3.48	12.85	12.07	1.97	14.03
	June	8.71	8.71	0.67	9.11	1.34	3.27	16.55
Unemployment	March	1.33	1.74	1.86	1.53	4.47	4.23	1.00
	April	1.29	2.16	2.10	1.85	4.18	4.58	0.85
	May	1.33	2.60	2.06	1.93	4.35	4.48	0.64
	June	1.14	4.03	2.83	2.13	0.71	4.45	1.11
Mobility	March	5.35	4.48	1.71	5.87	4.86	10.76	1.24
	April	11.02	2.89	4.48	6.39	1.25	7.52	5.49
	May	11.88	1.39	6.68	3.26	1.71	9.74	6.98
	June	10.54	4.65	6.79	7.13	4.67	9.68	5.65
Change in bond spread	2 Jan. - 5 May 2020	0.38	0.11	0.69	0.07	0.55	0.44	0.29

Source: own calculation

Based on the analysis of the changes, from the point of view of examining industrial production in the period before the crisis, individual cluster averages varied from 105 to 115 percent, which

assumes a relatively homogeneous state. Within the clusters, the debt-free and debt-reducing countries, as well as those with a decreasing export exposure can be considered homogeneous, while the non-tourism-dependent and tourism-dependent groups are characterised by greater fluctuations. During the period of the crisis, however, countries show larger variations within a group. In all clusters, industrial production decreased to a different extent. As for the averages, the reduction of the indicator was smaller in the group of non-tourism-dependent, debt-free, socially sensitive and tourism-dependent countries, and it is especially the debt-free and socially sensitive groups where the change in the minimum value lowered the average. In the case of the other clusters created, the decline was bigger.

As far as the unemployment indicator is concerned, a more heterogeneous pattern emerged between the individual clusters even in the pre-crisis period. The tourism-dependent and debt-reducing countries had considerably higher average unemployment rates than the other country groups, but this can be attributed to the exceptionally high outlier values. The crisis did not result in higher-than-average unemployment in most of the countries; however, the maximum values shifted, especially in the group of debt-free countries. Furthermore, in the tourism-dependent countries, the maximum value even shows a drop. In addition, the difference in extreme values did not change significantly.

Workforce mobility shows the most heterogeneous picture before and after the crisis. Cluster averages show similar reductions from similar levels. As another common phenomenon, the difference between the extreme values of the clusters has increased sharply.

Regarding the risk spread on government bond yields, there has been a general increase, but the degree thereof showed significant differences. While the risk premium remained stable in the countries not exposed to tourism, average interest rate premiums in debt-free, tourism-dependent and deficit-increasing countries rose relatively sharply. For the latter two clusters, homogeneity also fell significantly, as shown by the difference in extreme values.

As a peculiarity of Cluster 6, all countries belonging to the debt-reducing group show very wide variations, compared to the others, both in terms of job travel fluctuation (mobility) and declining industrial production. The former is in the range of (-20; -70), while the latter is in the range of 25-30 percentage points over the four months reviewed. Cluster 5 shows a mixed picture with respect to industrial production,

but there are a lot of similarities in the development of mobility, not only within the group, but also with debt-free countries and ones with a decreasing export exposure. Cluster 1 is really heterogeneous, and it would be difficult to make a general statement here in the context of production and mobility.

Based on the monthly change in unemployment, there is a significant standard variation within the clusters in terms of both the degree of change and its development over time, so the clusters based on preparedness data before the crisis cannot be distinguished with respect to labour market impact. This is not surprising since many of the countries reviewed distorted market processes through job retention measures and, furthermore, unemployment statistics are necessarily based on administrative rules. However, it can be generally concluded that the closure already increased unemployment in April at the latest.

4. Conclusions

The methodology of the study was based on Ward clustering and a coherent analysis of short-term variables. Using the method of clustering, seven groups, each containing 3 to 5 countries, were defined based on six economic indicators that measure the vulnerability and exposure of the countries with respect to public finances, external economy and income distribution (i.e. social aspects) before the economic crisis. The groups of countries thus formed showed some similarities, as expected, but surprises were also found compared to the traditional versions of capitalism and the classic literature of European social models. When examining cluster-forming variables, it was concluded that the clusters are clearly separable in the pair of social indicators. As for the other four indicators describing the initial situation before the crisis, the separation of the seven clusters is not so marked. As far as the budget deficit is concerned, Cluster 6 stood out and deviated significantly in the direction of a deficit, while Cluster 5 was unique due to a significant deviation of extreme values. With respect to public debt, the clusters can be divided into two types: Clusters 2-4 typically entered the pandemic with lower levels of debt, Clusters 5-7 with a higher level, while Cluster 1 swayed between the two. The examination of export share also resulted in a similar division: it was high in groups 1-3 and considerably lower in groups 4-7. In terms of exposure to tourism, only Cluster 5 and Cluster 1 are different from the other five, more or less homogenous groups of countries with a higher and lower share of GDP, respectively.

The defined clusters were analysed for the first four months of the pandemic, March-June 2020, based on four indicators that characterise a short period and that can be quickly realised statistically: monthly change in industrial production on annual basis, change in worker mobility, change in unemployment, and change in the interest spreads of government bonds.

Based on the evaluation of standard deviation, correlation and fit, it seemed justified to examine changes in mobility and industrial production, as well as mobility and risk spread in pairs.

Our analysis gave rise to the conclusion that the four crisis indicators suggested a trend of homogeneity between clusters. All clusters showed a decline in industrial production compared to the short-term pre-crisis reference period. It is also true, with the exception of Cluster 1 that heterogeneity within the clusters increased with the development of the indicator. The average of each cluster increased slightly in terms of unemployment, while heterogeneity within the cluster did not increase. In the case of workforce mobility, cluster averages essentially moved in parallel, starting from roughly the same level and reaching approximately the same level in the direction of declining mobility. Larger deviations during the shift towards increasing yields can be detected in connection with the risk spread on five-year government bonds.

The combination of annual indicators, providing a basis for the clusters, and variables describing their behaviours during the crisis does not make it possible to lay down general rules. This suggests that the short-term decline caused by the first wave of the coronavirus was not fundamentally rooted in different exposures in terms of public finances, social aspects and external economy.

In general, it can be concluded for most countries that crisis indicators passed the low point of the first wave of the pandemic and experienced a correction by June, more or less to their original growth path. This confirms the initial assumption that economic policy had to manage an inevitable drop in mobility, rather than decreasing demand.

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CONCEPT OF REGIONAL RESILIENCE: LITERATURE REVIEW OF THEORY AND APPLICATION STUDIES

Introduction

The concept of resilience has come to the fore in the last few years, not only in the academic field but also as part of political and public discussions. This term, used to describe how an entity or system responds to shocks and disturbances, has been explored for many years during which an effort has been made to examine and analyse various aspects of it. Resilience as a term is commonly used in research across all disciplines from environmental analysis to materials science and engineering, ecology, psychology, sociology and economics, making it currently used in various contexts, especially in a positive sense as an attribute of an object, entity or system and more normatively as a desired element that should be somehow promoted or supported (Martin and Sunley, 2015). The concept of resilience and its very idea comes to the fore in the fields of study of economic geography and regional studies, mainly due to changes in recent years caused by the global economic crisis, which affected all components of the regional economy. The economies of individual countries and their regions are facing the challenge of being resistant to economic fluctuations, not only about changes that are dramatic and complex in terms of the length

of the crisis but also concerning their impact on the socio-economic status of all countries. After the years of the economic crisis 2007-2009, the concept of resilience became part of the conceptual and analytical goal of regional economic studies by the continuing importance of regions as an economic entity and a subject of decision-making processes in public policies. Thus, there is an increasing interest not only in the resilience of regional economies but also in local and urban economies. The field of regional resilience research is widely researched in research studies by foreign researchers (Martin, 2012; Rose, 2009; Cutter et al., 2008; Hill et al., 2008; Norris et al., 2008; Foster, 2006). In these studies, regional resilience is generally determined by how the region or system responds to shocks or disturbances and can ensure its continuous development in these circumstances. There is a presumption that thanks to the current pandemic crisis, which is currently another case of global crisis, the concept of the region's resilience will increasingly be crucial for the formulation of individual countries' economic policies. However, this pressure to use the idea of regional and local economic resilience in political circles is probably somewhat ahead of the understanding of the concept. The concept of resilience is relatively complicated and deep in content and relatively complex for evaluation and measurement. At present, there is no generally agreed notion of resilience in the context of regional development, nor is there considerable ambiguity as to what exactly is meant by regional economic resilience and how it should be conceived. There is still no generally accepted methodology on how regional resilience should be measured, what its determinants are, and how it relates to long-term regional growth models.

Consequently, this leads to some misunderstandings and various variations in the use of the concept of resilience. The main purpose of the study is to identify specific aspects of the concept of resilience used in the context of socio-economic processes and regional development. This study is based on a systematic approach to literary research examining research work on the issue of resilience and components of the concept of resilience. This study aims to provide a suitable review of the literature and emphasise the definition of resilience, as well as to analyse the individual components in the context of socio-economic processes / regional development. The study discusses the theoretical foundations of regional resilience, addresses related issues about the importance and explanation of regional resilience, and provides factors for regional resilience.

Theory

Over the years, the concept of resilience, their indicators and measurement methods has been explored in several publications. This study examined studies from the reference period in the range of 2016 to 2019. During this reference period, about 20 outputs were published focusing on the region's resilience; some of them also focused on the notion of vulnerability of the region. Examining the resilience of a region is "popular" around the world, so studies are emerging from almost global levels such as OECD level to the larger official (European Union) and informal regional clusters (Nordic regions) sub-parts. In the case of the EU, there are studies that focus on the regional levels in terms of member states, or in terms of examining the so-called NUTS regions at the NUTS 1, NUTS 2 to NUTS 3 level. In the case of the EU, moreover, there is an examination of resilience at the level of the countries that have adopted the single currency, the Euro, and thus forms a monetary union. Resilience is also examined at the national level, mainly due to the availability of data such as Italy, Germany, Lithuania, but also China and India (which are included in the Asian Development Bank study, 2016). EU Member States, such as Italy, Germany, the Czechia and Lithuania, are then examining resilience from NUTS 1 to NUTS 3 (or in some key regions up to LAU levels) mainly in the former industrial areas, or areas that have long faced high unemployment, or other manifestations of "poor" resilience, or, conversely, better resilience compared to other regions with a similar background.

It could be said that Italy and other authors focus more often on the issue of resilience, behind this fact could be hidden the fact that Italy was created (as well as Germany) by merging small territorial units that were sovereign to others, and this autonomy, to some extent, have survived to this day. Another reason may be the persisting differences between regions in their socio-economic development (Giacometti, 2019; Aless, 2019; Bernini, 2019; Staníčková,2018; Bruneckiene, 2018; Fratesi, 2018; Modica 2018; Gianmoena, 2018; Salvati, 2017; European Commission, 2017; Staníčková, 2017a,b; Asian Development Bank, 2016; Miller, 2016; Caldera-Sánchez, 2016; Fao, 2016).

Most authors comprehensively look at resilience, in the sense that the resilience of a region affects not only the level of GDP of the economy but the overall socio-economic facilities of the region. For example, as stated by Staníčková (2017b), five dominant factors affect the resilience of the region. These factories include community links,

human capital and socio-demographic structure, labour market, economic performance, innovation, science and research. Other authors add environmental and natural aspects to these dimensions (Nordreg, 2019; Miller et al., 2016). In other publications, the business dimension, the specialisation of a given region, or the level of investment also appear as one of the key areas to focus in case of resilience (Pavík, 2016; Asian development bank, 2016; Salvati, 2016). These dimensions (factors) that affect the resilience of the territory contain partial indicators that approximate which facts affect resilience. As mentioned above, the leading examined indicators include the level of GDP, as indicators of macroeconomic stability. Other indicators of macroeconomic stability include, for example, the level of household savings, gross domestic fixed investments, consumption, growth, trade, inflation, the fiscal deficit to GDP ratio, the sum of the unemployment and inflation rates, the external debt to GDP ratio (Modica, 2018; Staníčková, 2017a). Socio-demographic factors as population density, the share of young population, the percentage of old population, net migration rate, social capital, level of population, people at risk of poverty or social exclusion, people living in households with very low work intensity, people at risk of poverty after social transfers, severely materially deprived people, health care expenditure, health care staff, health care facilities, road fatalities, healthy life expectancy, infant mortality, cancer disease death rate, heart disease death rate, suicide (Gianmoena, 2018; Staníčková, 2017a). Miller (2016) measure economic resilience index composed of economic diversity (employment sector diversity), entrepreneurship (proprietors as a percentage of total nonfarm employment, average nonfarm proprietor income), active economy (labour force participation rate) and economic growth (establishment birth rate). Social resilience is understood as a summary of indicators: place attachment (percentage of the population living in the same county as one year prior, percentage of housing units that are owner-occupied), highly educated population (percentage of the population with a BS degree or higher), civic engagement (voter participation rate), Social capital (Number of organisations per capita, number of associations per 10,000 population), healthy population (life expectancy) which are together creating social resilience index.

Methodology

In this research, a systematic review was used as the main method of literature review. The systematic review, in this case, included

literature search and screening, data extraction and analysis, and at last writing the literature review. Following the basic research question of defining the dimension of resilience and the main indicators in the context of socio-economic resilience of the area, suitable studies were sought using databases and available information sources. By comparing the individual dimensions of the given resilience indicators, were selected the studies that are closest in essence to the given topic.

Economic resilience is a concept that is frequently used but rarely well defined. If it is to put the idea of resilience meaningfully to work in regional policy agendas and practices, then it is necessary to have a clear definition, conceptualization and understanding of precisely what it is. The first historically definition of resilience notion is found in Encyclopedia Britannica in 1824, where resilience is defined as the capability of a strained body to recover its size and shape after deformation caused especially by compressive stress, or as the ability to recover from or adjust easily to misfortune or change. Resilience has roots in the Latin word resilio/resilire, meaning to jump back (Klein et al., 2003). The notion of resilience is broadly defining as a return to an original state. There is no universally agreed definition of regional economic resilience, different authors employ different definitions and descriptions, for more information see Table 4.3 containing systematic literature review of this concept.

Results and Discussion

In recent years, the region's resilience has come to the forefront of economic policymaking. Measurement of the progress which societies have made in their developmental efforts has proven to be difficult but also very popular. In the field of research at the regional level, there are publications that focus on larger regional entities such as European Union (or EMU) and Nordic countries, in which they compare differences and similarities from national levels to lower administrations. Among other things, there are studies focusing on a wide range of countries, such as studies examining the resilience of OECD countries. The research examines aspects such as the macroeconomic dimension, the microeconomic dimension, the socio-demographic dimension, but there are also environmental and geographical aspects. There is still no one generally accepted methodology for how regional resilience should be measured, what its determinants are, and how it links to patterns of long-run regional

growth. Consequently it leads to a certain misunderstanding and different variations in using of resilience concept.

Table 4.3

Dimensions of Resilience

Year	Author/s	Dimensions of resilience
2016	Salvati, L.	territory, land use, settlements, district specialisation, economic performances, economic structure, education, demography and population structure
2016	Asian development bank	macroeconomic policy, microeconomic policy, structural reform policy, global and regional cooperation, governance and institutions
2016	Miller, K.	social, infrastructure, economic, and environmental dimensions
2016	Caldera-Sánchez, A.	quality of institutions, product market policies, labour market policies
2016	FAO	access to basic services (schools, health centres, water, electricity and nearby markets) assets; social safety nets; sensitivity; adaptive capacity.
2017b	Staníčková, M.	community links, human capital and socio-demographic structure, labour market, economic performance, innovation, science and research
2017a	Staníčková, M.	macroeconomic stability, macroeconomic capacity, microeconomic market efficiency, microeconomic capacity, good governance, labour market capacity, social development, sociodemographic and health capacity, economic performance, education capacity, innovation and research and development, infrastructure and connectivity capacity, human capital and labour market, innovation and research capacity
2018	Staníčová, M., Melecký, L.	human capital and sociodemographic structure, labour market, economic performance innovation, science and research
2018	Gianmoena, L. Rios, V.	institutional factors, knowledge and innovation system factors, socio-demographic factors, labour market factors, labour market institutions
2019	Nordregio	financial, human, natural, physical, political social

Conclusion

Over the past few years, a new buzzword has entered academic, political and public discourse: the notion of resilience – a term invoked to describe how an entity or system responds to shocks and disturbances. The concept of resilience has become part of many studies across all disciplines over the years. Resilience thus became a link between disciplines, formerly distant at first glance, and pointed out the importance of monitoring all aspects of human life and society in connection with the fact that even a seemingly unimportant factor of human life may ultimately be crucial for the resilience of society as a whole. Nowadays there are obvious changes (often exogenous in the form of economic shock or crisis) in modern society, social structure, territorial policy, public administration and other fields having an impact on the functioning and efficiency of the whole society, especially in terms of resilience and vulnerability of the economy. Despite the growing importance of resilience during the current period of global crisis, there is no generally accepted methodology for how the concept should be operationalized and measured empirically. Quantifying systems is a complex process, and scales for measuring resilience, at any level, do not currently exist.

Similarly, there is as yet no theory of regional economic resilience as such. As mentioned in the introduction over the years, the concept of resilience has come to the fore, and following the current pandemic crisis, the effects of which have not yet been fully quantified, the concept of resilience can be expected to appear even more frequently in publications in the context of socio-economic impacts processes at all regional levels. It is difficult to determine in which area economics should be further strengthened to withstand shocks, if it is not possible to determine one hundred percent what shock will hit the economy and when. This is the reason why authors focus on resilience in a complex way and include in their studies not only macroeconomic and socio-demographic dimensions, but also environmental, political dimensions. Only a thorough analysis involving multiple research dimensions from economic, environmental, institutional, social, and political studies may assure a conceptual definition and a reliable and relevant comprehensive analysis of the regional resilience.

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IMPLICATIONS OF COVID-19 PANDEMIC AND QUARANTINE MEASURES ON THE UKRAINE'S AGRICULTURE

The activities of domestic agricultural enterprises and food industry enterprises in accordance with the Resolution of Cabinet of Ministers of Ukraine "About prevention of distribution in the territory of Ukraine sharp respiratory disease of COVID-19, caused by coronavirus SARS-CoV-2" dated March 11, 2020 No. 211 (as amended and supplemented) is not limited during the quarantine. Restrictions on the agricultural export (except for buckwheat) and the import of goods that ensure the activities of agricultural producers, restrictive measures for the movement of goods and workers were also not provided. Therefore, in view of this, the industry suffers the least losses from the introduction of quarantine measures and the spread of COVID-19, compared to other areas of the national economy.

However, there are still some risks that will lead to a reduction in production and sales of agricultural products, rising costs of agricultural producers, lowering incomes and generally lead to a worsening of the situation in the industry. These include: restrictive measures to sell products, movement of goods, closure of local retail and wholesale food markets, forced removal of infected workers or workers who have been in contact with infected people, changes in consumer sentiment and consumer demand structure, decrease in effective demand, reduction in production from suppliers of resources for agriculture, rising prices for resources and raw materials, the depreciation of the national currency, etc. If the risk of transmission of the virus by animals is confirmed, in accordance with the Law of Ukraine "On Veterinary Medicine" No. 2498-XII dated June 25, 1992 (as amended and supplemented), additional security measures may be introduced, in particular, such as: isolation of infected animals; closure of facilities (objects) where the presence of the disease is detected; prohibition of movement outside the infected facilities (objects) of any goods, animal care products, related

facilities and manure; slaughter of animals; restrictions on the movement of persons who have been in contact with infected animals and animals about which there is a suspicion that they are infected, or with other goods or manure from infected animals, and others.

So, we can say with confidence that changes in the agricultural sector will take place. However, some factors will have a positive effect, others – a negative one. In particular, in the spring and summer of 2020, there was an unprecedented decline in the cost of oil on world markets. And although fuels and lubricants are a significant cost item for the agricultural producer, we tend to assess this phenomenon as a negative factor. The decline in oil prices has led to a sharp decline in imports, including agri-food products, by countries that received currency through oil production and exports. Such countries include large importers of Ukrainian agricultural products and food, such as Egypt, the UAE, and so on. Due to the reduction of foreign exchange earnings from oil sales and even more significantly from the reduction of the tourism industry has led to a decrease in consumption in these countries. Therefore, this is a negative factor for Ukraine, as it affected the volume of agricultural and provisions products exports to the markets of these countries, namely, their decrease (Table 4.4).

Table 4.4

Ukraine's foreign trade of agricultural and provisions production,
January-August 2020

Commodity code and title by Ukrainian Classification of Commodities in Foreign Trade	Exports		Imports	
	thsd. USD	in % to January-August 2020	thsd. USD	in % to January-August 2020
Total	**30842,9**	**93,4**	**33241,6**	**85,4**
of which				
I. Live animals and livestock products	***758,8***	***88,2***	***752,3***	***119,2***
live animals	31,3	78,6	50,8	102,8
meat and meat preparations	432,0	89,9	100,0	99,1
milk and milk products; eggs; honey	262,3	84,4	196,2	215,9

Table 4.4 (continued)

Commodity code and title by Ukrainian Classification of Commodities in Foreign Trade	Exports		Imports	
	thsd. USD	in % to January-August 2020	thsd. USD	in % to January-August 2020
II. Plant products	***7105,2***	***91,8***	***1305,5***	***116,1***
vegetables	107,2	93,9	204,9	162,1
eatable fruits and nuts	134,1	84,5	443,7	126,1
cereals	5898,9	98,3	137,8	102,8
flour-grinding products	110,4	82,4	20,6	99,8
oil seeds and fruits	802,8	62,4	296,4	95,4
III. Animal or plant fats and oils	***3722,9***	***120,4***	***163,7***	***98,9***
IV. Finished food industry products	***2101,4***	***100,0***	***1758,1***	***114,3***
preparations from meat, fish	12,4	92,7	94,4	129,5
sugar and sugar confectionery	152,8	82,4	43,8	102,0
cocoa and cocoa preparations	115,9	95,8	218,1	117,8
preparations of grains	187,4	111,7	149,6	131,9
products of vegetables processing	93,4	77,7	127,5	108,5
remains and wastes of food industry	1012,8	100,1	180,1	122,4

Source: *calculated by the author referring to the data of the State Statistics Service of Ukraine [1]*

Ukrainian exports in January-August 2020 for all commodity items of agricultural products decreased compared to the same period in 2019. In particular, exports of animal products decreased by 11.8%, crop products – by 8.2%. The situation with the food export is slightly better, in particular, the sales of fats and oils have even increased by 20%, and however, we observe a decrease in the export of preparations from meat, sugar, confectionery, and vegetable processing products.

In addition, the decline in world oil prices has led to a decrease in demand for biofuels, where the main sources of raw materials for production are corn (for the bioethanol production) and rapeseed (used

in the production of biodiesel). This is also a negative factor because corn and rapeseed are significant domestic exports. The absence or low demand for biofuels will lead to a decrease in demand for corn and rapeseed, and, accordingly, to a decrease in prices and volumes of their sales, loss of export earnings, income and profits of producers.

In 2020, corn exports are expected to decrease by 40.7% compared to 2019. Even lower export volumes are expected for rapeseed – 48.5% less compared to 2019 (Table 4.5).

Table 4.5

Exports of certain crops, *million tons*

Crops	2019	2020 *	2020 in % to 2019
Grain and leguminous crops	***56,714***	***37,764***	***66,6***
wheat	20,023	14,218	71,0
barley	4,143	4,188	101,1
maize for grain	32,346	19,172	59,3
Industrial crops	***6,952***	***2,590***	***37,3***
sunflower	0,082	0,047	56,6
soya	3,623	0,889	24,5
rape and colza	3,159	1,627	51,5

Source: calculated by the author referring to the data of the State Statistics Service of Ukraine [1]

** Forecast*

Of course, it cannot be argued that such deterioration in foreign trade in agri-food products is caused solely by the spread of the Covid-19 pandemic and related restrictive measures. 2020 proved to be difficult for agricultural producers. The year was characterized by the action of unfavourable climatic factors, low-snow winter, cold and rainless spring, which slowed down the growing season of agricultural crops, the need to re-sow, and shifted the harvesting to later periods; drought, which led to a decrease in yield and even to an almost complete loss of yield in certain regions of Ukraine.

As the experience of the functioning of agriculture in Ukraine shows, almost half of the products (45.6% in 2019) are produced by households and small farms (44.1% of crop production and 51.0% of animal production in 2019). However, these products are oriented mainly towards the domestic consumer, whom they generally satisfy in terms of “price-quality” and are sold in local food markets, in local catering

establishments (restaurants, cafes), etc. In 2020, due to the introduction of restrictive measures on the spread of Covid-19, retail and wholesale markets, catering establishments were closed in spring and summer in almost all regions of Ukraine, which are the main sales channels for the products of these categories of producers, especially fruits and vegetables, herbs and dairy. This has led to the loss of these sales channels for small farms and households. In Ukraine, about 80% of vegetables are sold in agricultural markets by small agricultural producers, whose products are not represented in food supermarket chains. No alternative markets were offered to the small farms and households – for example, large agricultural enterprises carry out supplies to supermarkets under previously concluded contracts, in addition, a preliminary check of products in a laboratory is required. People had nowhere to sell vegetables that were grown in large greenhouses. According to some estimates, the volume of sales for these categories of agricultural products decreased by more than 70%.

Another factor that negatively affected the performance of agricultural producers is the change in the exchange rate, caused, among other things, by the introduction of quarantine measures and the spread of COVID-19. For example: in 2019 (its second half), agricultural producers received income for grown and sold products on average UAH 25/$. In 2020, when laying the next harvest, they spent UAH 27.03-28.23/$ on the necessary materials. Since the announcement of quarantine in Ukraine, the hryvnia exchange rate against the dollar has sharply decreased by 9.3% – from UAH 25.81/$ on March 12, 2020, to UAH 28.23/$ as of March 23, 2020. Such a change in the exchange rate further complicated the financial situation of agricultural producers, since, with the low revenues of last year's harvest, they had to increase spending on the new one. This will lead to a decrease in the level of operating profit by approximately UAH 10-25 billion. A decrease in the revenue of domestic exporters reduces the supply of foreign currency in the foreign exchange market, provokes a further depreciation of the hryvnia, in particular, as of October 28, 2020, the exchange rate was UAH 28.37/$ and its deterioration is predicted in the future.

The introduction of restrictive measures during the COVID-19 pandemic led to the fact that a significant part of workers was transferred to a remote form of work, were forced to go on vacation at their own expense, enterprises in various sectors of the national economy were forced to resort to saving financial resources due to a reduction in volumes activities, which led to a decrease in wages.

All this led to deterioration in the purchasing power of the Ukrainian population. Therefore, the demand for expensive products that can be painlessly replaced in consumption has dropped sharply, while the demand for basic, irreplaceable food products is growing, such as food wheat, rice, cereals and others. These are inexpensive, strategic foods that people start to consume in crisis situations.

The food demand for restaurants, hotels and catering has decreased. The meat industry suffers losses as the demand for more expensive types of meat is decreasing. At the same time, poultry farming received additional benefits, because the population switched to the consumption of cheaper chicken meat.

Under the conditions of quarantine there are changes in the segment of organic production. In particular, this concerns the volume of organic products sales in the domestic market (export volumes are likely to remain unchanged due to the growth of external demand for organic products). First, the closure of restaurants and other catering establishments, and then the restrictions on their activities, caused the loss of markets for these products.

Thus, the agricultural sector is gradually reorienting towards increasing production and sales cheaper food.

The spread of the COVID-19 pandemic and the introduction of quarantine measures have led to a decrease in employment in agriculture, although not on the same scale as in other sectors of the national economy. In particular, as of October 1, 2020 (for 9 months of this year), 33032 people were registered as unemployed in the State Employment Service. It is 23.4% higher than the same period in 2019. The rise in unemployment has occurred in almost all regions of the country. The need for enterprises in a crisis situation to look for ways to reduce their own costs, has led to a decrease in demand for labor. In particular, in agriculture for 9 months of 2020 the number of vacancies due to the seasonal workers dismiss in the country as a whole decreased by 39.6%. In some regions, the demand for labor has decreased more significantly – by more than 50% in Kyiv, Lviv, Ternopil, Donetsk, Zakarpattya and Kherson regions (Table 4.6).

In this crisis situation the factors, that have a positive impact on the activities of agricultural producers, are the following:

– *Savings in paying land tax and rent.*

Table 4.6

Data on the number of registered unemployed and the number of registered vacancies in Ukraine's agriculture, *January-September 2019 and 2020*

Regions	Number of registered unemployed, persons			Number of vacancies, units		
	2019	2020	2020 in % to 2019	2019 р.	2020 р.	2020 in % to 2019
Ukraine	**26758**	**33032**	**123,4**	**5103**	**3083**	**60,4**
Vinnytsya	2397	3137	130,9	236	380	161,0
Volyn	422	754	178,7	178	89	50,0
Dnipropetrovsk	1185	1344	113,4	354	288	81,4
Donetsk	430	639	148,6	116	57	49,1
Zhytomyr	1485	1905	128,3	157	197	125,5
Zakarpattya	346	369	106,6	54	26	48,1
Zaporizhya	1072	1041	97,1	119	95	79,8
Ivano-Frankivsk	566	612	108,1	48	37	77,1
Kyiv	836	1120	134,0	1406	223	15,9
Kirovohrad	1314	1719	130,8	*205*	*124*	60,5
Luhansk	515	484	94,0	53	51	96,2
Lviv	453	785	173,3	176	64	36,4
Mykolayiv	1568	1772	113,0	109	114	104,6
Odesa	903	1 986	219,9	196	157	80,1
Poltava	2577	2444	94,8	191	164	85,9
Rivne	778	968	124,4	134	72	53,7
Sumy	1516	1560	102,9	144	157	109,0
Ternopil	678	672	99,1	91	25	27,5
Kharkiv	1663	1918	115,3	378	275	72,8
Kherson	732	1 155	157,8	277	135	48,7
Khmelnytskiy	1082	1572	145,3	173	93	53,8
Cherkasy	2095	2636	125,8	101	102	101,0
Chernivtsi	713	725	101,7	35	19	54,3
Chernihiv	1381	1596	115,6	171	132	77,2

Source: calculated by the author referring to the data of the State Employment Service of Ukraine [3]

The Law of Ukraine “On Amendments to the Tax Code of Ukraine and other laws of Ukraine regarding the support of taxpayers for the period of implementation of measures aimed at preventing the emergence and spread of coronavirus disease (COVID-19)” No. 533-IX dated March 17, 2020 [4] provides an exemption of agricultural producers from payment for land in the period from March 1 to April 30, 2020 (land tax and rent for land plots of state and municipal property) for land plots owned or used, including on a lease basis, by individuals or legal entities, and are used by them in economic activities. According to the Ministry for Development of Economy, Trade and Agriculture of Ukraine, in 2020, revenues from the payment of land tax for state-owned agricultural land are expected at the level of UAH 1.16 billion and receipts from the annual rent for state-owned agricultural land are expected at UAH 1.75 billion. Due to this Law, agricultural producers will be able to save funds in the amount of UAH 485.0 million through the use of state-owned agricultural land without a corresponding fee.

– *Savings when paying a single social payment.*

According to the Law of Ukraine [4] for the periods from March 1 to March 31 and from April 1 to April 30, 2020, members of farms are temporarily exempted from the accrual, calculation and payment of a single payment to the obligatory state social insurance, if they do not belong to persons who are subject to insurance on other grounds. And this is a saving in the amount of UAH 2,078.12 for each member of the farm.

– *Reduction of fertilizer prices.*

The World Bank fertilizer price Index fell 4.5% in the first quarter of 2020. The main elements of this decline were the fall in prices for potash and nitrogen fertilizers due to lower demand. In contrast, phosphate fertilizer prices rose as the outbreak of the COVID-19 pandemic in China severely slowed production and disrupted supply chains. In 2020, the Index is forecast to fall 9.9% as global fertilizer supply remains strong. This World Bank forecast includes the risks of prolonged supply disruptions, as well as slower-than-expected recovery in demand. Considering that Ukraine annually imports 3.4-4.6 million tons of mineral fertilizers, of which, in particular, 1.3-1.7 million tons of nitrogen, 0.09-0.18 million tons of potash fertilizers, 1.7-2.7 million tons of complex fertilizers, as well as 0.03-0.15 million tons of phosphate fertilizers, then a decrease in prices for them will help to save costs for

agricultural producers and, as a result, to reduce the cost of domestic products, in the cultivation of which fertilizers are used. The savings, according to our calculations, could amount to USD 10-12 million.

In order to minimize the negative impact of the spread of the COVID-19 pandemic and related restrictive measures on agricultural production, in our opinion, it is necessary:

– to consider marketing measures to increase sales of products, and thus maintain existing production volumes and income levels;

– if possible, redesign production for the actual needs of the population;

– consolidation, cooperation and integration of commodity producers in the export-oriented segment, especially when growing and selling organic products, vegetables, fruits, berries, niche products;

– producers have to make the most of the benefits provided by the state and state support.

The government must also create conditions to minimize the risks of the COVID-19 pandemic, in particular:

– to introduce insurance for agricultural producers with state support, including from the effects of climate change;

– to ensure the passage of all logistics chains, so as not to endanger agricultural production activities;

– to provide assistance for the purchase of fertilizers, plant protection products, etc. to small and medium-sized producers;

– introduction of tax-exempt for the duration of restrictive measures.

Thus, the state policy to ensure sustainable development of the Ukraine's agricultural sector in the context of the COVID-19 pandemic spread and to minimize the negative impact of the associated restrictive quarantine measures should be implemented on an integrated basis at various hierarchical levels of managerial decision-making (state, regional, sectoral). This will make it possible to optimally combine economic, organizational, legal, institutional, sectoral, investment and innovation, entrepreneurial and other measures of government impact on the development of the industry and help to preserve it as an effective, competitive sector of the economy in the domestic and foreign markets.

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THE IMPACT OF THE COVID-19 PANDEMIC ON SOCIO-ECONOMIC PROCESSES

In 2020, one of the main factors influencing socio-economic processes was the spread of the Covid-19 pandemic.

The Covid-19 pandemic affected all spheres of public life and caused crises in society related to quarantine, self-isolation, temperature control, cancellation of mass events, closure of educational and cultural and entertainment facilities, limited access to certain services; restrictions on departure / entry to countries and movement within countries have been established; the role of public administration in

emergency conditions has been strengthened; established restrictions on employment; new distance forms of work and education were introduced. In such conditions, these functions are performed in a limited space, with limited financial and time resources and cause socio-economic losses, which significantly exacerbates the role of social safety.

The key problems that significantly limit the growth of the competitiveness of the social protection system in Ukraine are gaps in state regulation and imperfections and infrastructure of the social sphere, which determines the objective need to strengthen the social functions of the state. The Covid-19 pandemic has led to a social crisis around the world. In some aspects of social security, conditions today are equivalent to the levels of deprivation last seen in the mid-1980s, as all components of social development have been negatively affected: income (due to an unprecedented reduction in economic activity), health (significant daily deaths and potential morbidity and mortality from related causes) and education. As early as 1961, the United Nations developed recommendations on components and indicators of living standards, including health, nutrition, education, employment and working conditions, social security and individual freedom. The International Labor Organization emphasizes that the social policy of each state should be aimed at achieving the well-being and development of the population, as well as encouraging its desire for social progress [4]. At the same time, the crisis caused by the rapid deterioration of the social situation of the majority of the population of Ukraine as a result of the introduction of quarantine restrictions, significantly affected the priority of goals and technologies of social policy. It includes not only the conditions and level of the development of the social sphere, but also the social protection of man. On the one hand, the solution of many tasks of state social protection policy is determined by economic resources that the state can direct to their implementation, on the other – state social protection policy can be considered as the most important factor of economic growth, because it is due to purposeful social policy growth and realization of innovative potential of labor resources of society.

The work of many researchers is devoted to the problems of the pandemic's impact on socio-economic development. O. Evans argues that in addition to the direct negative effects of the COVID-19 pandemic, which include primarily an increase in mortality, it is also necessary to take into account the indirect negative consequences of the

loss of productivity and comorbidities [9].

Polish scientists W. Stojkowski, Z. Utkowski, P. Jolakowski emphasize that the pandemic of coronavirus disease has a significant impact on social life and economic activity in almost every country of the world [11].

Academician-Secretary of the Department of Economics of the NAS of Ukraine, Academician of the NAS of Ukraine E. Libanova noted that a separate – and a very powerful – group of challenges is related to the consequences of the COVID-19 pandemic, in particular to the total global quarantine provoked by it and the global socio-economic crisis. At present, there is no clear idea of what and how will change in the nearest future, but almost all forecasts suggest the inevitability of the transformation of logistics processes, the formation of a fundamentally new system of organization of production and service, tectonic shifts in the labor market and labor relations. It seems that this global crisis will cause drastic changes in society as a whole – from the role of state institutions to intra-family relations [2].

The source for further research was a scientific article by I. Svydruk, which describes the problem of expectant inconsistency of employees, which is relevant in today's quarantine conditions, and suggests the use of a number of tools of socio-psychological self-regulation [7].

In Ukraine, state regulation of the social sphere is designed to ensure a decent standard of living [1]. The reforms of the social security system announced in recent years have largely focused on the neoliberal model, which includes a reduction in the share of social spending and the transition to targeted assistance. However, in the context of unsustainable socio-economic development inherent in Ukraine, the reduction of social services may lead to increased social dependence of citizens on crises and the emergence of new social challenges: the spread of poverty among workers, rising unemployment, economic insecurity of vulnerable groups and educational services, erosion of human capital. The problems of domestic social protection policy during the quarantine restrictions caused by the Covid-19 pandemic have become much more relevant. The systems of medical care, provision of educational services, public transport, and recreational facilities have experienced special problems. As a result, the quality of life of almost all categories of citizens, especially the elderly and low-income citizens, has significantly deteriorated. Funding for social programs to improve the population has been identified as a priority by state institutions. Let us analyze the value of indicators of state budget expenditures in

Ukraine in 2017-2019 and January-September 2020 (Table 4.7).

Table 4.7

Expenditures of the state budget of Ukraine in 2017-2019 and during January-September 2020 (UAH mln)

Indexes	2017	2018	2019	Growth rate, % 2019/2017	2020 January-September
Total	839243,7	985842	1072891,5	27,84	843253,2
National functions	142446,9	162949,9	168206,5	18,08	127877
including public debt service	110456,1	115431,2	119247,6	7,96	98381,3
Defense	74346,2	97024	106627,7	43,42	77186,8
Public order, security	87845	116875,6	140151,2	59,54	105211,3
Economic activity	47000,1	63600,7	72365,1	53,97	73632,3
Environmental protection	4739,9	5241,2	6316,2	33,26	3109,0
Utilities	16,9	296,9	108	539,05	24,7
Healthcare	16729,1	22617,9	38561,6	130,51	62624,3
Spiritual and physical development	7898,1	10107,1	9967	26,19	5882,9
Education	41140,2	44323,4	51657,6	25,56	36268,7
Social protection and social security	144478,3	163865,6	218628,6	51,32	234811,3
including social protection of pensioners	133458,6	150091	182270,1	36,57	152699,3
Intergovernmental transfers	272602,9	298939,7	260302	-4,51	116624,8
The share of social protection expenditures in total budget expenditures	17,22	16,62	20,38	-	27,85
The share of all social expenditures in total budget expenditures	25,62	25,0	30,31	-	40,64

Source: calculated according to data [6]

As you can see, during 2017-2019, the share of budget expenditures on social protection and social security ranged from 17-20%, while in a pandemic allocation of funds reached 27.85%.

Considering the share of all social expenditures (including expenditures on environmental protection, housing and communal services, health care, spiritual and physical development, education and social protection and social security itself), we can see a similar trend, i.e. fluctuations in 2017-2019 years in the range of 25-31%, while in January-September 2020, this figure reached 40.64%.

The conceptual ideology of the state policy of social protection is to strengthen statehood as the main principle of social protection in Ukraine and can be implemented through the creation and maintenance of a competitive environment in the social protection system, reducing corruption and the share of the shadow sector in providing social services and guarantees, debureaucratization system management, abandonment of state regulators and restrictions that do not follow from the objective needs of state regulation of social insurance. Thus, according to the human development indicator of the UN Development Program in 2018-2019, Ukraine ranked 88th out of 189 countries studied in terms of human development [10]. The Declaration on Social Progress and Development states that international peace and security, on the one hand, and social progress and economic development, on the other, are closely linked [8].

Understanding of the importance of the social sphere is noted in the package of control of Covid-19 in the draft budget-2021, which contains a set of medical services under the program of medical guarantees and is a measure to respond to the coronavirus epidemic. Its volume is 15.8 billion UAH. 2.6 billion UAH was planned in the expenditure part for vaccination against COVID-19. The priority is to allocate funds to counter COVID-19 in schools. In particular, it is about 1 billion UAH to equip teachers' workplaces with technical means for distance learning.

It should be noted that the draft budget-2021 for medicine provides not just significant resources, but the maximum possible in these difficult conditions [3]. In 2021 these expenditures will grow unprecedentedly for Ukraine – up to 4.2% of GDP. In total, this is over 190 billion UAH, or on 57.5 billion UAH more than expected in early 2020. At the same time, according to the medium-term forecast, by 2023 the government plans to increase health care funding to 5% of GDP. Of course, taking into account the expected growth of the revenue side of the state budget.

We hope that the funds provided in the 2021 budget will be enough to maintain the health care system and ensure the development of the industry in many important parameters, namely: the growth of doctors' salaries, the purchase of equipment for support hospitals and ambulances.

Given the need to overcome the pandemic, it should be noted, however, that the deteriorating social situation of many citizens has been ignored by social protection programs.

The spread of coronavirus infection has negatively affected the life of every Ukrainian. Due to Covid-19, the population is forced to isolate itself, to stop face-to-face communication with relatives and friends, many have lost their jobs and, accordingly, lost their income. Of course, the labor market also changed because of the pandemic. Due to the introduction of quarantine restrictions, the social rights of employees have deteriorated significantly in most areas of the economy, most notably in the areas of transport services, tourism, hospitality and restaurants. To improve the situation, the Government has developed recommendations for employers on compliance with current labor legislation for employees who work remotely or are on unpaid leave.

It should be noted that the possibility of remote work has allowed many companies to avoid a reduction in production (and staff), but in many cases has led to a deterioration in the mental well-being of employees. In addition, the virtually unlimited period of unpaid leave for the period of quarantine can be considered hidden unemployment (Table 4.8), during which formally employed but temporarily unemployed citizens do not receive benefits provided in case of unemployment.

According to statistics, in 2017-2019 the unemployment rate decreased by 3.03%, and in the first half of 2020 increased by 7.87%, leading to economic losses and social tensions. But especially negative is the trend of its rapid growth.

Despite the exemption of entrepreneurs and self-employed citizens from paying the Single Social Contribution during quarantine restrictions, this category of the population was also not provided with material support measures in the absence of income due to temporary inability to do business. Unemployment has also risen significantly due to the return of more than 100,000 migrant workers who do not have jobs within the country [5]. Such an unplanned return will exacerbate the large-scale socio-economic impact of the pandemic at the level of households, local and national economies. As a result, Covid-19 and its

associated travel restrictions threaten households whose main source of income is remittances. Reducing remittances can have significant side effects for local economies and communities in general, leading to reduced productive investment, consumer spending and access to education and health services.

Table 4.8

Unemployment rate in Ukraine in 2017-2019 and the first half of 2020

(thousands of people)

Indexes	2017	2018	2019	Growth rate, 2019/2017	2020		
					I-st quarter of the year	II-nd quarter of the year	Growth rate, IIquat./Iquat.
Total population	42386,4	42153,2	41902,4	-1,14	41830,6	41762,1	-0,16
Economically active population	17193,2	17296,2	17381,8	1,10	17329,9	16992,1	-1,95
Employed population	15495,9	15718,6	15894,9	2,57	15781,3	15362,0	-2,66
Unemployed population	1697,3	1577,6	1486,9	-12,4	1548,6	1630,1	5,26
Unemployment rate, %	9,9	9,1	9,6	-3,03	8,9	9,6	7,87
Registered unemployed	352,5	341,7	338,2	-4,06	349,4	517,7	48,17

Source: calculated according to data [6]

Restoring economic growth after a pandemic crisis will require social dialogue between government, employers and workers to ensure decent working conditions and comprehensive social assistance for those who have lost their jobs as a result of the crisis. Support measures need to be developed for the most vulnerable groups: the elderly, migrants, young people entering the labor market and self-employed citizens. It is also expedient to regulate flexible formats of employment at the state level, to provide them with full-fledged labor and social guarantees. Assessing the challenges to the social sphere in Ukraine caused by pandemic constraints, we should focus on social problems in education. Quarantine for Ukrainian pupils and students was announced in March 2020, later educational institutions introduced distance

learning and in the first semester of 2020/2021 academic year introduced blended learning as a form of study that combines direct and indirect forms of interaction. Blended learning to some extent ensures the continuity of the educational process, giving schoolchildren and students the opportunity to get acquainted with the educational material. However, due to significant social inequalities in the access of different segments of the population to high-quality Internet and other modern technologies, the risk of deepening inequalities in access to education is growing. The significant social backlash in social networks indicates the inability of most Ukrainian educational institutions to organize online classes with video communication. In small towns and rural areas, distance learning was mostly limited to self-mastery of educational materials and the implementation of tasks received from teachers.

Under such conditions, the reduction of expenditures on the financing of the Ukrainian school, the curtailment of reforms in the field of education may lead to a deterioration in the quality of education, and in the long run – to a decrease in the quality of human resources. Thus, there is an urgent need for institutional reduction of digital inequality, equipping rural schools with modern technology and high-speed Internet.

Rationalization of social expenditures in the budget structure can be a catalyst for economic growth, as they are investments in human capital. Therefore, in our opinion, it is necessary to:

- ✓ increase the efficiency of public administration;
- ✓ enlarge funding for health care activities;
- ✓ implement insurance medicine;
- ✓ improve the management system in medical institutions;
- ✓ intensify the process of transition to the implementation of activities on the basis of commercial calculation;
- ✓ work out state standards of minimum norm for free medical care in accordance with the world standards;
- ✓ develop packages of anti-crisis measures introduced for the purpose of social support of the population; business support; social support of the most vulnerable groups of the population and their further social involvement;
- ✓ expand the volume of funding for education by: financial support for basic research; development and implementation of a mechanism for providing educational loans; optimize budget expenditures on social protection and social security to finance social guarantees at the level of world standards.

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COMPETENCE-ORIENTED APPROACH TO THE INTELLECTUALIZATION OF HUMAN CAPITAL IN THE CONTEXT OF GLOBAL ECONOMIC TRANSFORMATIONS

Modern trends in the world economy are characterized by dynamism and cyclicality, which is determined by the multifactorial systemic process of globalization, the development and strengthening of which is carried out under the influence of various factors. The world has become not only interdependent but also vulnerable. Proofs of this are the results of the crises in the world economy which appear from time to time. Although the vulnerability becomes quite pronounced, the level of influence of certain processes on each country differs.

Globalization processes have been an integral attribute of civilization since the formation of interstate, intercontinental trade. However, the main unresolved problem is the inadequacy, inconsistency of forms and mechanisms of practical implementation of the unbridled desire of various human communities for planetary communications. These processes became especially acute between the center of the world economy and its periphery, between economically developed and

underdeveloped parts of the world.

The globalization has immanent economic components (Figure 4.1), which are embodied in increasing and diversifying the structure of international trade, increasing the role of knowledge, technology, management, marketing, created in developed countries and used in economic systems converted into global processes, global labor migration, international investment. Simultaneously with the processes of global integration of the world, powerful processes of socio-economic disintegration continue, resource and environmental problems are exacerbated.

The danger of widening the gap and stratification of countries in terms of economic development lies not only in its social consequences, which appear in the confrontation of developed and developing countries: for economic globalization, which easily overcomes national barriers, there is a problem of the most dangerous economic barrier – incomparability of markets and, most importantly, the narrowing of the consumer demand market due to low incomes and technological backwardness.

However, according to J. Soros, the benefits of globalization outweigh the costs it generates, because the additional wealth allows to cover all the consequences of inequality and correct other negative aspects (which include the financial crisis) caused by globalization [1]. The objective changes of recent decades in the fields of production, communications, trade, foreign investment and finance have transformed the world economy into a holistic global mechanism, combined with large-scale, sometimes global production and marketing structures, the global financial system and the planetary information network. The world economic space has become the only field for interaction of big business, when the geography of productive forces, the sectoral structure of investment, production and sales are determined by these economic actors, taking into account the global situation, but economic ups and downs have become global.

Global economic downturns are caused by both economic and non-economic factors. Among them, the most influential were the 2001 terrorist attacks in the United States, the acute respiratory syndrome of 2003, better known as SARS, which began to spread among countries, the global financial and economic crisis of 2008-2009, which showed the rapid decline of the economies of the world's leading countries, which was followed by the crisis in the euro area and the current COVID-19 pandemic (Figure 4.2).

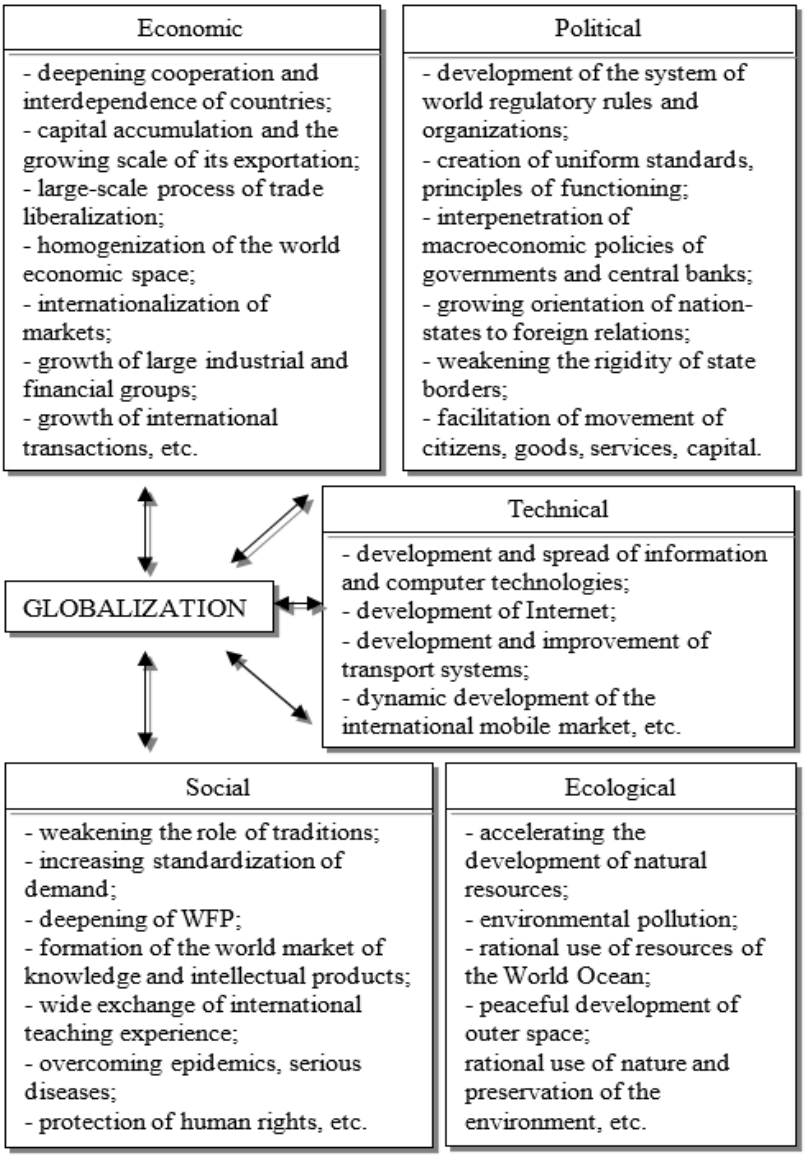

Figure 4.1 Components of globalization

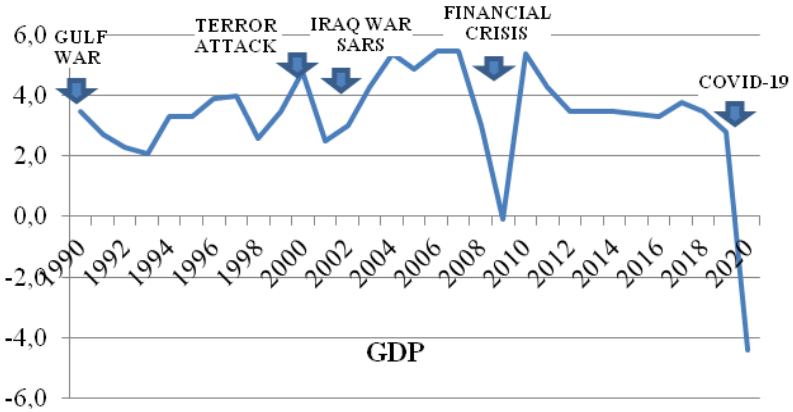

Figure 4.2 World GDP growth

All this sequence of crisis phenomena – atypical for the world economy of the period after the Second World War – indicates the onset of a qualitatively new and, apparently, quite long period of immanent global instability, during which crises will most likely be the norm rather than temporary.

In addition, the financial and economic crisis has exhausted the possibilities of the world economy to combat shocks. The frequency and severity of risks to the global economy have increased, while the capacity of global regulatory systems to combat these risks has not increased.

In 2011 in the study "Global Risks of the Future" OECD experts concluded that common causes of global crises, such as war, famine or traditional disease epidemics, would take a back seat, while factors such as pandemics of new strains of infectious diseases and cyber-attacks aimed at infrastructure, financial crises, socio-economic protests and geomagnetic storms would come to the fore.

The authors of the study cited the example of the outbreak of "SARS" in 2002, which quickly had spread around the world from Hong Kong through travelers. In addition, the effect of globalization and the spread of disease through business and tourism travel would increase with the growth of megacities, especially in Asia. Moreover, OECD experts have called on governments to reconsider their domestic and foreign policies in the light of new challenges, including investing more

in natural disaster prevention systems or in drugs that would add diseases that are resistant to traditional antibiotics [2]. But the answer wasn't efficient as the coronavirus crisis has been occurred.

The economic consequences of the Coronavirus Crisis have hit developing countries particularly hard. Commodity prices have collapsed, and with them, the countries' main export revenues. Widespread mass unemployment means remittances from migrant workers have declined. Tourism is mostly a thing of the past. Large amounts of capital have flowed faster out of developing countries since the corona crisis began than during the global financial crisis of 2008. In March alone, some USD 100bn exited those countries.

Developing countries need massive financing efforts, both for coping with the Pandemic and for dealing with its economic consequences. While rich countries are putting together huge rescue packages to counteract the crisis, low-income countries cannot make use of traditional policy options. Already heavily indebted and unable to levy additional taxes, their scope for maneuver is limited. The central banks of wealthy countries with strong currencies have introduced expansive monetary policies they liken to 'firing a bazooka'. In developing countries, however, similar programs would devalue their currencies and hike the cost of imports and foreign-debt servicing [3].

So, the COVID-19 Pandemic has cause a number of new challenges on economic activity at all levels, pushing for the mass development and usage of information and communication technologies. Highly developed countries have quickly adapted to the new realities of doing business with a high level of human capital development, which is not the case with developing countries. It should be noted that the company itself cannot create knowledge and accumulate competencies that are necessary for the intellectualization of human capital. The source and carrier of knowledge and competencies is a person, his/her human capital, which he/she owns, as well as his/her ability to spread their knowledge within a group or company.

The interaction of knowledge carriers provides the transformation of personal knowledge into the knowledge of the company, which can then be either formalized (described), or remain informal. After transformation, it becomes an asset of the company, sector of economy, state, as well as part of the final product. Therefore, the processes of such interaction, transfer and exchange of knowledge are a promising area of research, as evidenced by the presence of a number of works aimed at studying these aspects of the human capital intellectualization.

Because today in many high-tech industries the life cycle of an idea from its inception to implementation is quite short, often “each other is replaced not just by individual technologies, but by the whole family of technologies” [4], radically different system of not just education, but new principles and models for defining, forming and using competencies acquired and accumulated by the employee throughout life is needed [5]. Thus, the practical implementation of a competency-based approach to the intellectualization of human capital in developed countries is through the creation of competence clusters as a basis for further economic development and innovation of all spheres of state activity. Today we can distinguish several organizational forms of knowledge concentration for economic and innovative development: “thought factories” (Think Tanks), “centers of excellence” and “centers of competence”, which in the future are the basis for the formation of innovation clusters.

The term “thought factory” appeared in the middle of the last century, but still has not received an unambiguous interpretation. As indicated by L.D. Gitelman and M.V. Kozhevnikov “thought factories” (knowledge factories or Think Tanks) initially had very broad tasks, they were practically seen as structures for generating innovations and provided interaction between science, business and the state. However, the commercialization of research results of such structures was not high enough [6]. The authors point out that thought factories are the “predecessors” of competence centers, a more common concept in modern business practice. Today, the term “thought factory” is increasingly gaining a political tone. Thus, at the end of the last century, the American Researcher E. Rich noted that “thought factories” should be understood as independent, non-profit organizations engaged in the work of examination and creation of provisions designed to influence the formation of political decisions [7].

According to a study published at the University of Pennsylvania entitled “2019 Global Go to Think Tank Index Report” [8], the leaders in the number of thought factories are countries in Europe, North America and Asia. The countries of South & Central America lag far behind them, and the smallest numbers of thought factories are located in the Sub-Saharan countries of Africa and the Middle East & North countries of Africa (Table 4.9).

As we can see, there are 2058 think tanks in North America (Mexico, Canada and the United States) of which 1872 are in the United States. There are 2219 think tanks in Europe. Over 51 percent of all think tanks

are in North America and Europe, a decrease from 2018. The number of think tanks in the United States has more than doubled since 1980. Most of the think tanks that have come into existence in the United States since the 1970s are specialized for a particular regional or functional area. About one quarter of US-based think tanks is located in Washington. The rate of establishment of think tanks has declined over the last 12 years in the United States and Europe [8].

Table 4.9

Global Distribution of Think Tanks by Regions, 2019

No.	Region	Number of Think Tanks
1	Europe	2219
2	North America	2058
3	Asia	1829
4	South & Central America	1023
5	Sub-Saharan Africa	612
6	Middle East & North Africa	507
	Total	8248

Among Central and Eastern Europe countries, Russia ranks first by the number of think tanks in 2019, ahead of Poland, Romania, Hungary and Bulgaria (Figure 4.3).

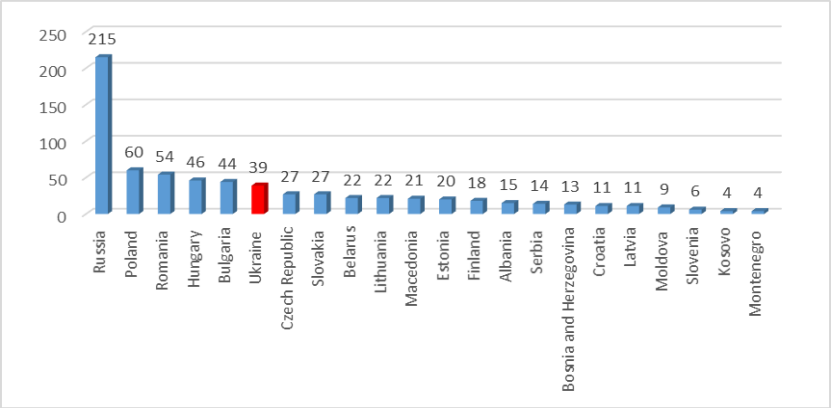

Figure 4.3 Ranking of the Central and Eastern Europe countries by number of Think Tanks, 2019

Ukraine ranked sixth with 39 Think Tanks, ahead of the Czech Republic, Slovakia, Belarus and Lithuania. In particular, Ukrainian Razumkov Centre ranked on 32 position in the 2019 Top Think Tanks Worldwide (Non-US), on 44 position in the 2019 Top Think Tanks Worldwide (US and non-US) and on the 1 position in the 2019 Top Think Tanks in Central and Eastern Europe. Also in the 2019 Top Think Tanks in Central and Eastern Europe not the last positions are occupied by International Centre for Policy Studies (ICPS) (35 position), Kyiv National Economic University (KNEU) (38 position), Democratic Initiatives Foundation (DIF) (52 position), Dniprovskyi Center for Social Research (DCSR) (53 position), Institute of World Policy (IWP) (67 position), Institute for Economic Research and Policy Consulting (86 position), Institute of Analysis and Advocacy (IAA) (90 position) and International Center for Policy Studies (ICPS) (94 position).

As for Ukrainian educational Think Tanks, they were also quite highly rated in this ranking. So in the 2019 Top Education Policy Think Tanks Ukrainian Center for Educational Policy (CEP) occupies 17 position, Educational Studies Center – 37 position and International Centre for Policy Studies (ICPS) – 49 position among 74 worldwide educational Think Tanks.

Centers of excellence also influence the implementation of a competency-based approach. There are a number of definitions of this organizational form of concentration of knowledge, which makes it somewhat difficult to standardize the understanding of this concept, but it is possible to identify a number of common features that unite existing approaches. Centers of excellence are an organizational structure consisting of a number of laboratories (organizations), united on the basis of involvement in research activities. At the same time, the Centers of excellence are focused on breakthrough areas of research that are at the forefront of scientific thought. Such centers must have a unique logistical, intellectual and human resources potential that will allow them to achieve high performance and receive a quality scientific product. By definition, the centers of excellence should be leaders at least in the national and at most in the world market of scientific achievements and be “a link in the transfer of knowledge from the cutting edge of research to national companies and laboratories” [9].

In Europe by the Horizon 2020 programm until 2018 was funded nine Centers of excellence in the different areas of knowledge: NOMAD, MaX, E-CAM, BioExcel, CoeGSS, CompBioMed, EoCoE, ESiWACE and PoP. For example, The Novel Materials Discovery

(NOMAD) Laboratory develops a Materials Encyclopedia and Big-Data Analytics and Advanced Graphics Tools for materials science and engineering. Eight complementary computational materials science groups and four high-performance computing centers form the synergetic core of this Centre of Excellence.

Competence centers are aimed at expanding the interaction between the company's specialists to create favorable conditions for obtaining the necessary information. Such centers, as well as Centers of excellence, are aimed at ensuring the competitiveness of individual structures, but, as a rule, it is competitiveness at the company's level. Today, both researchers and practitioners are actively involved in the analysis of the functioning of competence centers [10].

Competence centers, as a rule, operate at the level of an individual company, and in contrast to the Centers of excellence, aimed at collecting and adapting knowledge and information coming from outside, to implement the functions of this company. Competence centers usually have a sectoral specialization and provide services [11]. Sectoral specialization can be traced both between individual companies with centers of certain competencies and between centers of competence that exist within one company. Competence centers can also be built on the territorial principle of interaction between participants.

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PROBLEMS IMPLEMENTATION OF CONSTITUTIONAL PRINCIPLE OF JUSTICE IN THE ECONOMY IN CONDITION OF THE COVID-19 PANDEMIC

The COVID-19 coronavirus pandemic has caused a difficult economic situation in the world especially in underdeveloped countries. Ukraine also found itself in difficult conditions, as the country's economy was not ready for such a problem. At present in practice we often witness the violation of the principle of justice in Ukraine which

further exacerbates the socio-economic crisis.

Therefore, the study of the problems of implementation of the principle of justice in the economy during the coronavirus pandemic COVID-19 is a topical issue today. We believe that in order to ensure a way out of the crisis it is necessary to investigate what exactly are violations of the principle of justice in Ukraine and provide appropriate proposals to overcome this difficult situation.

Currently, there are no studies of Ukrainian legal scholars on this issue, so the author considers it necessary to identify problematic issues in the implementation of the principle of justice in the economy, as the critical situation in Ukraine is further complicated by the coronavirus pandemic.

In accordance with the Constitution of Ukraine our state is sovereign, independent, democratic, social, and legal. As a welfare state, Ukraine must ensure compliance with the principle of justice in the process of economic management.

The principle of justice is a fundamental principle in law, the effective implementation of which depends on the equality of all before the law, respect for human and civil rights and freedoms. Currently, the situation is completely different. As Pope Francis stated: "The small virus has declared the great inequality that prevails in the world: inequality in opportunities, access to goods, health care, technology, education." [1]

In Ukraine a problematic issue is also the developing of normative-legal acts that violate the principle of justice. The legislator must always remember that justice arose rather than law and all laws must conform to this principle. Justice is above all how it is implemented by the legislator in normative-legal acts, and officials in practice depend on the welfare and health of the population during quarantine.

As rightly noted in the monograph "Legal support for the principle of justice in economic management" edited by V. Ustymenko: "… one of the conditions for the establishment of the principle of justice in the economic-legal system of Ukraine should be recognized a change in approaches to lawmaking and methodology of preparation in normative-legal acts. First of all, the developing of a law or by-law should take place through the prism of the principle of fairness with the mandatory conduct of scientific-legal examination of projects of such acts (as, for example, carried out anti-corruption examination)." [2, p.16]

We fully agree with the opinions of the authors who published this monograph and, in our opinion, such examinations are extremely

necessary for positive changes in the economic-legal system of Ukraine.

In his second report “Justice for all during the COVID-19 pandemic: impact on the economy,” David Steven, Maaike de Langen, Sam Muller, Mark Weston noted the following: “The COVID-19 coronavirus pandemic creates a similar request for innovation in the field of justice to protect livelihoods, prevent cascade damage to the economy and creation the foundation for economic recovery based on justice.

The consequences of the pandemic can be traced to three main problems:

the public health crisis, which will continue until a vaccine is developed and distributed, or until enough people are infected that are sufficient to form collective immunity;

economic crisis that will take years to fully unfold and is likely to last for most of this decade;

more broader political, social and cultural changes that are transforming society. The pandemic exposes significant inequalities and puts at risk our ability to work together to solve current and future problems.” [3, p. 5]

It should be noted that Ukraine was in an economic crisis before the COVID-19 pandemic. Currently, our country is in an even deeper crisis during quarantine. This state of affairs is catastrophic, as neither medicine, nor the economy, nor education were ready for such a challenge. The problematic issue is the loss of jobs and the bankruptcy of enterprises.

About justice in Ukraine to talk it is difficult. In addition to coronavirus infection the problem is further complicated by the fact that corruption has permeated all spheres of life of Ukrainians, and officials very often misuse budget funds. Among the population prevails of legal nihilism.

This economic crisis is leading to growing inequality. Not all schoolchildren have equal access to education. Children from low-income families do not have the opportunities to study (namely, computers, touch mobile phones, the Internet) compared to schoolchildren from wealthy families. Therefore, the pandemic, in addition to the economic crisis, has given rise to growing inequality in society. We believe that the necessary step is the support of such families by the state.

Another violation of the principle of justice is that during a pandemic, large shopping malls are open and small shops are closed. In such conditions, it turns out that the rich get richer and the poor get

poorer. A necessary step on the part of the state should be to reduce tax and administrative pressure on small and medium-sized businesses.

The UNDP Office in Ukraine noted the following: “The growing crisis caused by the Covid-19 coronavirus disease could hit developing countries much harder, as it is not just a short-term health crisis, but a serious socio-economic crisis, the consequences of which will be felt for months, if not years. This was reported to UNN by the UNDP Office in Ukraine.

According to preliminary UNDP estimates, the loss of profits in developing countries could exceed 220 billion dollars USA. African countries could lose almost half of their jobs.

As an estimated 55% of the world’s population does not have access to social protection, these losses will be very significant in many communities and will have a negative impact on education and human rights, and in the most critical cases, will jeopardize food security.

The situation may become more complicated due to the sharp increase in cases of infection, as 75% of the populations of the least developed countries often do not have access to such basic things as soap and clean water.” [4]

It should be noted that the COVID-19 pandemic has led to even higher unemployment in the world. Ukraine, where social injustice prevails, is no exception. In search of a better life, Ukrainians are migrating to European Union member states to earn a decent wage. If you analyze the salary of a Supreme Court judge and a teacher, the difference is huge. If in developed European countries such a difference can be a maximum of three times more, then in Ukraine there is a paradoxical situation. Then what kind of justice can we talk about? This issue should be settled by the state, because in the near future due to low wages, due to significant stratification in the state, Ukraine will lose highly professional doctors, teachers, scientists and so on.

As V. Opryshko notes: “High salaries are often a kind of bribe from those in power to those to whom they assign a high salary. Thus, the state does not seem to trust the employee, as if knowingly suspecting him that he is already prone to bribery and other corrupt practices. And this is a certain “immorality” of the state’s position, not to mention social justice and its legal security.

To occupy a high position in the state first of all is a question of honor and dignity of the person who is the true citizen and the patriot of the country and the state, possesses high professional and moral qualities, a high level of legal culture. Such a person should, of course,

receive a decent salary according to the position held, the complexity of professional activities and responsibilities. At the same time, high salaries of individual figures against the background of further impoverishment of society can cause exacerbation of contradictions and social conflicts. In the conditions in which our state and society are, this is unacceptable." [5]

Ukrainian pensioners, who receive meager pensions that are socially unjust, are no exception. Pensions of ex-officials, lifelong salary of judges are many times higher than the pension of the average Ukrainian. In pandemic conditions, the situation is complicated by the need to buy more drugs, antiseptics, masks, etc.

The subsistence level in Ukraine and the Member States of the European Union differs significantly. V. Chirkin, researching the indicators of the principle of social justice, notes: "The indicator of the subsistence level of a person (part of it – the consumer basket) is sometimes named in general form in the constitutions (in Russia – no), specifically in numbers – in the laws. Part of the subsistence level is the consumer basket (usually for a month, in the Great Britain for a week). Other goods are determined for a longer period (for example, terms for replacement of coats or dresses – years). In Russia, the subsistence level as a whole includes 156 types of goods and services, in Germany – 475, Great Britain – 700. Sometimes the subsistence level reflects the mentality of the people. In France, this includes wine and restaurant visits, in Germany – beer, in the Great Britain – the cost of playing golf (in Russia, of course, no vodka). The subsistence level in developed countries (USA) is 40-50% of the average wage. There is no such income – the state (in Russia as well) pays a subsidy to this indicator." [6]

In Ukraine the population has low incomes and it is difficult to provide normal living conditions. This leads to the search for a better life and justice in other states.

The COVID-19 coronavirus pandemic is tightening quarantine restrictions in European Union member-states and is hitting Ukrainian workers and their families hard. After all, every year Ukrainian ostarbeiters transferred billions of dollars to Ukraine, which exceeded the State Budget of Ukraine for the corresponding year. Therefore, quarantine restrictions lead to inequality between those who work for high wages during the pandemic and the unemployed for the period of the pandemic workers.

The economic crisis in the world is causing some sectors of the

economy to decline, for example, due to quarantine restrictions, the flower industry in the Netherlands is suffering great losses. As a rule, women who remained unemployed worked in this field.

For example, in Ukraine, namely in the Zakarpattia region, as the editorial team of MIZEZ notes: “Due to the closure of markets and quarantine measures, greenhouses in Zakarpattia are forced to throw thousands of flowers on the humus. Floriculture is one of the most common industries in the region, and many greenhouses are working on growing flowers. And now, due to the lack of wholesale procurement, farmers are forced to either sell them at very low prices, or destroy what could not be sold.

Last year, Zakarpattia gardeners have already experienced a crisis, when many greenhouses were destroyed during the flood. After that, some farms did not work because their owners did not want to recover and went abroad to earn money. And this year the second blow is the closure of food markets and national quarantine.

The flower industry of the region is suffering huge losses. The first is the inability to sell the product. Flowers need to be sold quickly so that they do not lose their marketable appearance. But now it is impossible, so you have to destroy the crop by plowing it on humus. Secondly, the farm itself also needs regular care. Farmers invest a lot of money and effort in each plant, so greenhouses need to be constantly heated and, in addition, to pay employees.” [7]

In the world, a similar situation leads to numerous job cuts, many people lose their jobs and even in the context of the spread of coronavirus infection. Therefore, in addition to restrictive measures, states must ensure the proper standard of living of persons released on various grounds, provide them with appropriate assistance and protection.

Currently, Ukraine is in difficult conditions. Quarantine restrictions worsen the economic situation in the country. Without international creditors it will be difficult to improve the economic situation after the end of the COVID-19 pandemic. Ukraine’s economy is also experiencing difficult times due to declining investment.

At the World Economic Form in Davos the President of Ukraine stated: “We will provide a separate contract with the state to each investor of a large company that will bring more than 100 million dollars USA to Ukraine. It is the state that will protect you. You will have a manager – investment nanny, who speaks five languages, and 24/7 this manager will work with you – any question, any problem will

be solved in contact with this manager, and there will be no problem" (cited by: Ministry of Finance). [8]

As M. Klyuchkovsky and M. Soldatenko rightly point out: "Investment agreements also require a fair and equal attitude of the state to foreign investments. Prohibitions that are disproportionate to the aim pursued, discriminatory and arbitrary are also prohibited. Therefore, it cannot be ruled out that quarantine measures that unduly interfere with or discriminate against foreign business compared to domestic business may create potential grounds for foreign investors to sue.

To date, all the restrictive measures taken by the Ukrainian authorities, as well as the steps taken to support business in difficult conditions, do not diversify between Ukrainian and international business and apply equally to all.

But if, for example, the government decides to compensate for losses or provide other state aid to national businesses to overcome the negative effects of the pandemic, investment agreements may require similar support to foreign investors.

Otherwise, investors will have a chance to demand appropriate compensation through arbitration.

This will also apply to those situations when the government will allow the activities of Ukrainian enterprises, while continuing the ban on foreign business" [9].

In order to improve the investment climate in Ukraine it is necessary to implement the constitutional principle of justice in all spheres of public life, so that a foreign investor has appropriate guarantees for the implementation of its activities. The situation is completely different now. A fair trial is needed to protect the rights of the investor. Therefore, it would be appropriate to establish a Supreme Court for foreign investment. However, also a problem in practice is unsatisfactory state of implementation of European Court of Human Rights decisions. Then what is the meaning of justice if court decisions are not executed in Ukraine or are executed improperly. This is an obstacle to Ukraine's accession to the European Union.

Therefore, effective reforms are needed to improve the situation in the country, as it is estimated that about 9 million people will find themselves in poverty.

Ukrainian business is also going through difficult times. The right step is to create an appropriate fund to support small and medium-sized businesses. It is a violation of the principle of fairness that some shopping centers and restaurants, the owners of which are close to the

authorities, do not comply with quarantine restrictions and do not stop making profits. Instead other entrepreneurs who have no contact with the government suffer significant losses due to the pandemic. This state of affairs leads to dissatisfaction of citizens, contempt for the law, because, in their opinion, there is no justice in Ukraine. Everyone should have equal opportunities in the economy. There should not be a group of privileged persons and ordinary entrepreneurs who are subject to all quarantine restrictions.

Based on the above, we see that the pandemic has caused an economic crisis. The demand for a just society is currently growing.

As A. Strelets notes: "In the sphere of market economy the justice is established as follows: the incomes of all owners of factors of production are formed on the basis of the laws of supply and demand, as well as the marginal efficiency of these factors. However, it should be noted that in any society there are people who, first, do not have the factors of production – the poor and unable to work (children, pensioners, disabled); secondly, they cannot apply their work (unemployed); third, they do not want to work because of their beliefs or other reasons. As a result some earn very little or nothing, while others earn very high. As a result, it can be argued that the market mechanism can not provide a guaranteed level of welfare, so we are now seeing a significant stratification of society." [10]

Therefore, in the conditions of quarantine restrictions benefits are needed for such a segment of the population to pay for utilities.

Based on the above, we draw the following conclusions. The corona crisis has caused high unemployment and, as a result, quarantine restrictions have left families with children without Internet access and gadgets for online learning. This is a violation of the principle of justice, because there is no equal access of students to learning. It is necessary for the state to promote the removal of such families from difficult life circumstances.

In addition, in our opinion, the exorbitant salaries of judges of the Constitutional Court and the Supreme Court, which are hundreds of times higher than the salaries of doctors fighting the pandemic, are unfair.

The lack of a normal income leads to the fact that Ukrainians do not really have the funds for treatment in case of COVID-19. Ukrainian pensioners are in the same condition. Unlike VIP pensioners an ordinary Ukrainian pensioner has a penny pension. Therefore, the legislator must take into account the principle of fairness in the adoption of pension

legislation. In the European Union states-member there is no such difference between the maximum and minimum pension. The situation is the same with the exorbitant salaries of judges of the Constitutional Court and the Supreme Court and the minimum wage.

After the pandemic important it is to create new jobs so that Ukrainians do not go to work, there is an economic recovery and there is no shortage of workers in the economy. A necessary step is to eliminate the great stratification among Ukrainians, to overcome poverty due to economic growth. It is necessary to create normal conditions for the development of small and medium-sized businesses taking into account the principle of fairness. There can be no "caste of the privileged." We believe that the pandemic of the coronavirus COVID-19 has a certain positive. After all, it showed more deeply all the problems that exist in the state and that need urgent solution.

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SETUP OF LEARNING PROCESS MANAGEMENT TOOLS ORCHESTRATION FOR SUSTAINABLE OPERATION DURING COVID-19 PANDEMIC

Introduction. Pandemic of COVID-19 severely affected the way we looked at the learning technologies and possibilities. Before 2019 most of the universities treated online learning systems as a supportive tool that has to be combined with offline learning, or used as an option for self-learning for part-time students [1]. March 2020 become to be the threshold that changed things drastically.

Education quality departments, online learning departments and studying management departments encountered the situation when online learning tools became the core element of learning process. Moreover, in spring 2020 we thought on online learning as a temporarily solution for few months before the pandemic ends. The closer we've been getting to summer and the end of studying year, we saw that universities need something permanent to operate in this cases, as the online learning in synchronous and asynchronous modes became the common thing in lives of university teachers and students [2].

In addition, in summer 2020 permanent lockdown for the Ukrainian universities was changed to so-called "adaptive quaratine" [3], which meant that any of Ukrainian cities, towns or districts could be locked down for two weeks by Ministry of Health, depending on pandemic situation in specific area. So the switching process from offline learning to online and vice versa needs to be done in very short time.

Learning management tools of IFNTUOG. Ivano-Frankivsk national technical university of oil and gas is not the exceptional case, and has typical number of solutions for supplying the learning management process and interaction between departments and students. These include:

– Learning management system “Dekanat Plus” to work with learning plans, timetable, marks monitoring, lessons monitoring and exam results monitoring;

– Unified State Database of Education (EDBO) to store students’ and teachers’ personal data, information about life-long learning and careers, admission and graduation process, etc;

– Google Suite for Education – for corporate mailing, data storage and inner document management process;

– Moodle LMS [4] – online learning platform to store learning resources, providing examination process, midterm testing, etc.

Rest of the work was usually managed “on paper” or using live communication between the participants of learning process. Overall the Diagram of learning management system before the pandemic is shown on Figure 4.4.

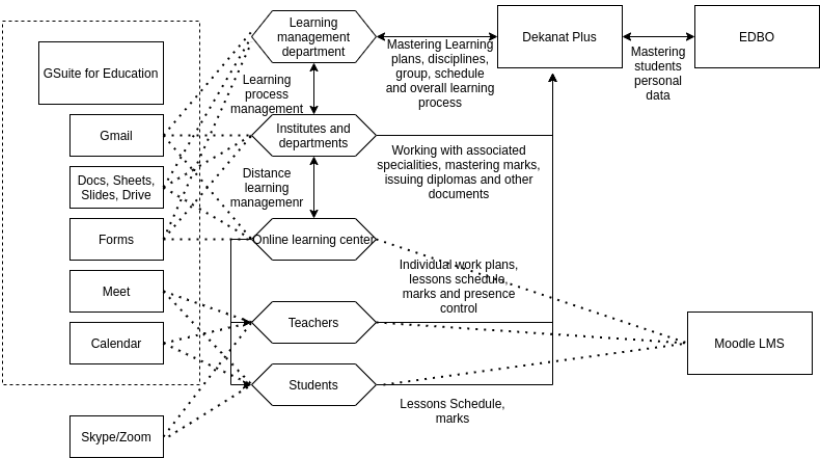

Figure 4.4 Overall diagram of learning management process in IFNTUOG before COVID lockdown

Connections that are set between the nodes on the diagram mean permanent usage of the tool. For sure, a lot of teachers use corporate mail and Google Drive possibilities of corporate accounts, but these were separate cases.

Worth to notice, that EDBO and GSuite are served in form of third-party “Software as a service” with the subscription to it, Dekanat Plus is third-party service that is hosted on university servers and is supported

by subscription, and Moodle installation is absolutely standalone which is supported by local information center. Also, for all of these services unique password is required.

Entities of learning process. The key entities of the learning process are:

– students;
– student groups;
– learning plans;
– specialities;
– courses;
– education levels;
– departments;
– institutes;
– teachers.

Key objectives to solve using online tools are:

– communication;
– synchronous learning and audio/videomeetings;
– course content delivery;
– reduction of human factor while transferring data from one service to another using online tools;
– unified log in to most of the services.

Solving the communication issues. The key problem to solve, as it can be seen from the Fig.1 was automation of different software interconnections. Both Moodle and GSuite have good integration tools to automate some of the processes. [2] Developers of Dekanat Plus were staying connected as well in order to provide proper integration with their software.

First of all, daily communication between students and teachers, student and institute management, teachers and institute management, inner department connections, institutes and university management etc. had to be organized. The Figure 4.5 presents the following diagram of communication.

Communication is organized using popular messengers (mostly, Telegram and Viber). Chats allow to solve routine problems and one-way channels help to display news and make sure they won't dissapear in whole amount of chat "flood" messages.

Solving the data transferring issues. Next thing was core integration of GSuite for Education, Moodle installation and Dekanat Plus software. Integration process is shown on Figure 4.6.

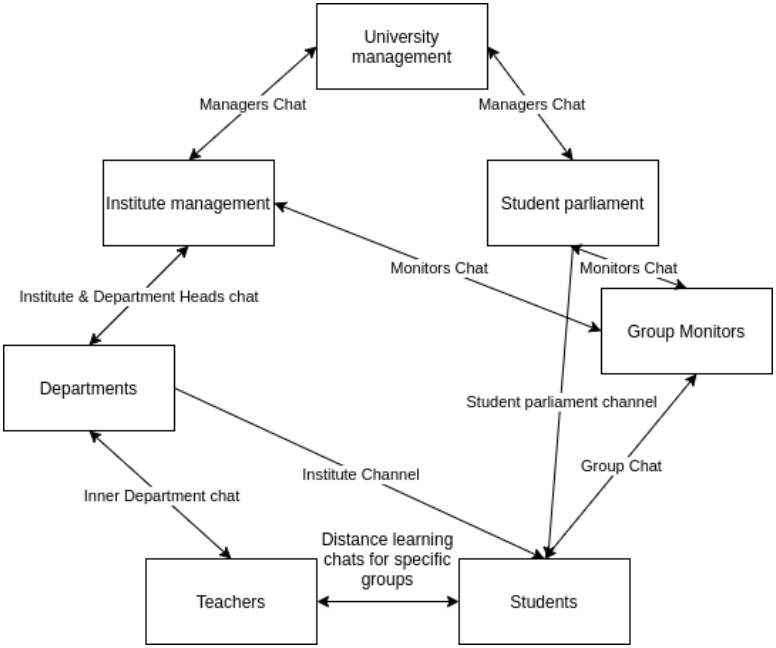

Figure 4.5 Communication organization between learning process participants during COVID lockdown

After student gets accepted to university, his data is imported from government database to Dekanat Plus. There, groups are formed and student is assigned to specific learning plan that contains a sequence of courses during the learning time. After groups are created, lists of students are passed to GSuite for Education and information center creates corporate accounts for all of them. All the accounts are imported to Moodle and associated with specific group (called cohort in Moodle LMS). Thus, we have all teachers and students in Moodle bounded to their departments and groups respectively.

On other side, studying management department creates the export file with data about learning plans and courses that can be imported in Moodle categories tree. This automates the course creation. Moreover, student cohorts can me enrolled in course categories instead the specific courses and this simplifies the work on enrolling students to courses.

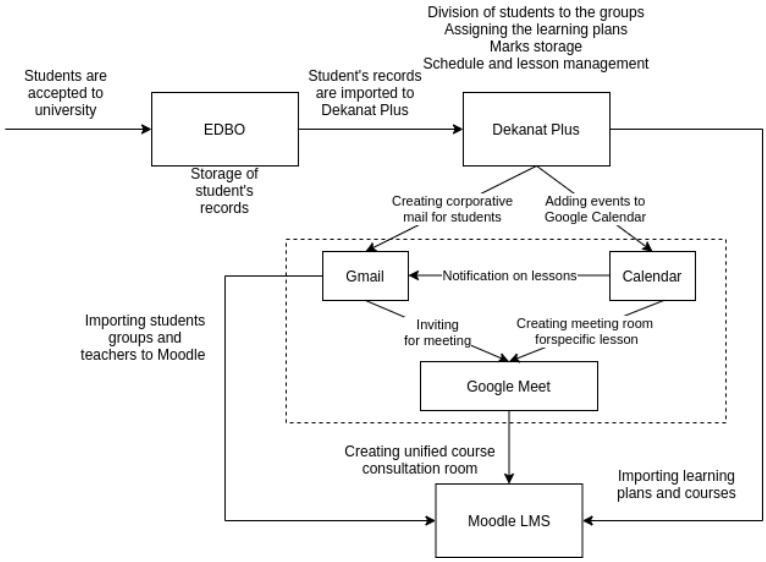

Figure 4.6 Creating data transferring process between tools involved into online learning

Considering the operation management, schedule that is generated in Dekanat Plus is exported to Google Calendar, and meeting room for each lesson can be created using Google Meet. Students can be invited for meeting, or, moreover, static link for one course can be created so students will visit single meeting room throughout the course.

Worth to notice that both Moodle and Dekanat Plus have OAuth2 authorization implemented, which made possible the unified login to all the resources of learning process for students and teachers using GSuite corporate account.

Solving the course organization and automation inside Moodle. As IFNTUOG teachers hold more than 1000 courses for each semester, providing those to more than 5000 students, the large issue in the previous operation was to sync groups, students, courses and teachers for each semester in Moodle LMS. Usually, this was done by distance learning center, using the algorithm shown on Figure 4.7.

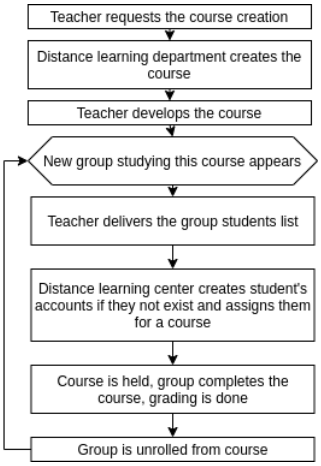

Figure 4.7 Moodle LMS operating before the lockdown

This approach was satisfactory when only some groups were involved in online learning process using Moodle LMS. But when we are talking on mandatory usage of Moodle installation as the core element of online learning during quarantine, this approach is not appropriate.

First of all, it demands a lot of work from distance learning department – creating all the courses, course categories, students' accounts, merging them into cohorts, assigning teachers to the courses, etc. All of that was done almost "by hand".

Second big issue is the course lifecycle. When teacher develops an online learning course, the group is enrolled to this course instance, and thus, teacher is unable to do some updates and improvements (like addition of new control elements or changing the grading policy) until semester ends and group can be unenrolled from course. So the only time when teacher can do course update usually matches with vacations time. Moreover, after group is unenrolled from the course, their marks and assignments dissapear, so this data must be exported and stored as a backup or just be noted on paper. This doesn't allow to store all students assignments, achievements and grades during his university studying.

Third problem is that many courses of general engineering disciplines (like calculus or physics) are mostly identical except one or two topics to be covered differently (i.e., civil engineers need advanced

mechanics while computer engineers need some additional modules on semiconductors). So teacher in Physics needs to create two separate courses for them, and if the similar topics are somehow changed, one needs to update both of the courses.

So we decided to revisit this pattern to simplify and clearify this process. First of all, the concept of the "course template" was presented. Course template is the online course developed in Moodle LMS by teacher, and is used to make the clone instances for each course iteration for new group. Thus, the way we operate with the courses, comparing to the Figure 4.7, is shown on Figure 4.8.

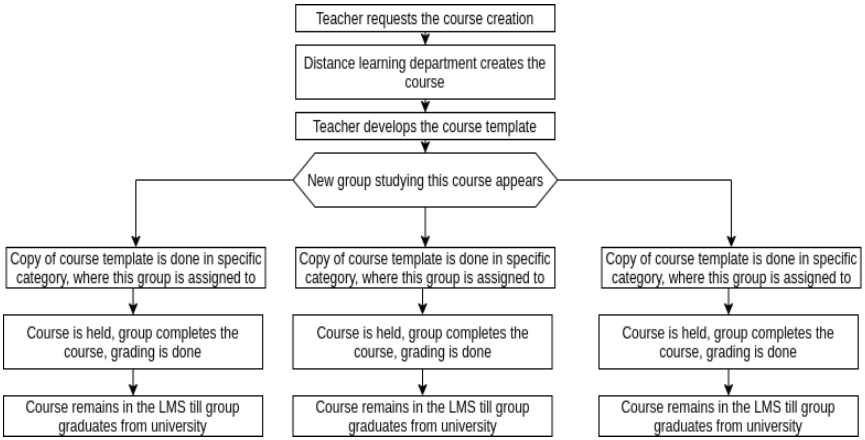

Figure 4.8 New approach for creating the courses using course templates

This completely solves the second problem, described before – all the grades and assignments of specific groups are stored inside the separate course copies until group graduates from university. The problem with updating the course is solved as well – teacher can edit his course template whenever he wants, delivering updated course for new groups. Also, this way allows to solve third problem, as teacher can develop all-in-one template course for all the specialities, and then just copy the topics he needs for specific course held, for example, for computer engineers or civil engineers group.

The contra for this approach is one and really challenging – going from single course to a lot of it's copies from one template will increase

the amount of the courses (at least for mentioned before 1500 courses per semester). So, to organize the courses clearly for the students and teachers, the graduation year based approach was proposed. Categories tree is shown on Figure 4.9.

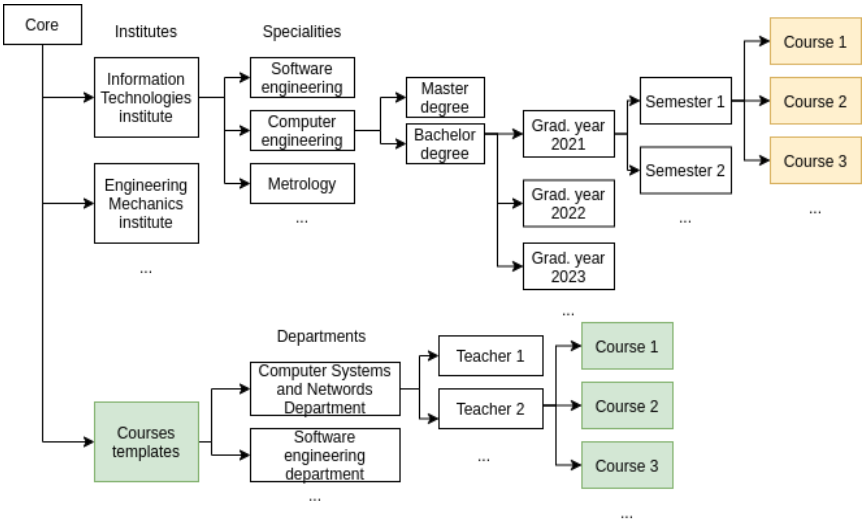

Figure 4.9 Course categories tree

The proposed tree approach allows to maintain distributive management on courses using the Moodle feature called “category manager”.

But firstly, let’s look at the first problem described in this section. Its solution was created in combination of GSuite and Dekanat Plus export features.

Students are formed into groups during the corporate mail accounts generation. Then, groups are exported with their names and codes and imported in Moodle as “cohorts” entity using CSV format in Moodle cohort upload tool. After that, we import student accounts with binding to Moodle cohort using Moodle user bulk upload tool. Thus, we have our students imported with their groups. Key thing is that after changing Moodle settings for categories, we can enroll cohorts to specific course category. So, for example, the group of future bachelors in Computer engineering that will graduate in 2021 can be put to the specific category with path “Core/Informational Technology Institute/Computer Engineering/Bachelor/ Grad. Year 2021”, and it will be enrolled to any

of the courses in the category.

The course list can be imported as well, with category binding providing the possibility of creation all the courses from bulk upload for each semester. Another way to approach it, without filtering the courses that somehow aren't studied this semester, is to assign one person from department that is responsible for speciality graduation, permissions of category manager. Creating, filtering, bulk uploading and supervising of 35 courses done by 40 persons is much better in terms of management than the same work for 1500 courses done by 1 person, because chatting and consulting inside the department usually is less time-consuming than doing the same work by one small department for the whole university.

The last but not least is special category "Courses templates" where for each teacher the category is created, and this teacher is assigned as manager of this category. That allows the teacher to create and develop any course one wants without any actions from distance learning center. This category is considered as sandbox for experiments and place to store courses. Each time when person is assigned to empty course with specific students group, one can import activities and resources from course template and start teaching using this course.

Personnel training. IFNTUOG studying management department in collaboration with Institute of Informational Technologies developed online courses for teachers to get familiar with tools of GSuite for Education and Moodle LMS in order to be able to organize and provide quality teaching during the lockdown. For the first iteration of the course, we've got 120 teachers to sign up as students, 70 of them are about to complete their study and receive 2 ECTS credits certificate of competing this course. All the lectures were recorded and shared with university teachers.

In nearly future, the concept presentation will be made and after testing this approach in Fall'2020 semester, this approach will go live for the entire university next semester.

Future steps. In future we plan to organize the back connection from Moodle to Dekanat Plus in order to organize the grades export into system that deals with study results and graduation process. Also, the tools for direct transferring instead of CSV downloading and uploading are now under discussion.

Outcomes. COVID-19 pandemic became the true catalyst of evolving the online learning from the supportive tool and way of informal education to the core component of studying process. There's a

lot more to over think and change the approach, but that's the human nature – adapt and overcome to find the problem solution.

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Chapter 5

USE OF MODERN INFORMATION TECHNOLOGIES AND DIGITALIZATION OF BUSINESS PROCESSES IN PANDEMIC CONDITIONS

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DIGITALIZATION OF ADMINISTRATIVE SERVICES FOR UKRAINIAN BUSINESSES BASED ON THE IMPLEMENTATION OF THE EXPERIENCE OF EUROPEAN COUNTRIES AND USA

At the end of 2019, at the International IT Forum in Zaporizhia, the Minister of Digital Transformation of Ukraine Mykhailo Fedorov announced the bold plans of the Ministry of Finance for the next 4 years. In particular, the Ministry aims to transform Ukraine into a smart state by making absolutely all public services available to citizens and businesses online, as well as to achieve an increase in the share of the IT sector in Ukraine's GDP to 10% [1].

In this context, it is not surprising that the neologism "digitalization" was chosen as the word of 2019 in Ukraine. By the way, in previous years the terms "tomos" (2018), "visa-free" (2017), "corruption" (2016), "cyborgs" (2014) fell on the pedestal of "word of the year" and "Euromaidan" (2013). Undoubtedly, all the above words for various reasons are extremely important for Ukrainian society [2].

Traditional management methods in the provision of administrative services for businesses, inherent in the planned economy, which is a consequence of Ukraine's long stay in the Soviet Union, are now not only ineffective but also outdated. Their presence in the practice of public administration and local self-government is a threatening factor due to the fact that it directly hinders business development, causes

distrust and dissatisaction with the government among the public, is a sign of conservatism and bureaucratization, creates a gap between the domestic economy and advanced countries of the world [3].

The institute of administrative services in developed countries of Europe and the United States is a clearly transparent, well-functioning mechanism that reflects democracy in the provision of administrative services and is designed to effectively and efficiently address the problems of citizens, thereby improving their quality of life.

Organizational and economic principles of such a mechanism are based on impartiality, financial inclusion and transparency through the introduction of electronic systems of public services and digitalization of government services based on the digitalization of business processes in the economy and public administration.

Today, digitalization is one of the most complex, complex and little-studied processes of global economic transformation. The active use of digital technologies since the invention of transistors in 1947 (W. Brattain, J. Bardin) for processing, storage and transmission of information, contributes to the digitalization of business operations, the spread of international e-commerce, the creation of electronic government structures, the digitalization of the world market labor [3].

The phenomenon of digitalization affects not only digital devices, but also the work of people actively involved in the interaction with digital technologies. The issue of implementation of the experience of European countries and USA in the field of digitalization of administrative services for Ukrainian businesses, taking into account the needs of the national economy, the specifics of government in society and the needs of citizens in the right to receive quality administrative service that fully realizes the right to unimpeded carrying out business activities.

McKinsey Global Institute, based on the results of its own research, namely the Industry Digitization Index, provides an opportunity to analyze the experience of digitalization through the prism of comparing the indicators of “digitalization costs” and the amount of “digital capital” from it. The index includes three sub-indices:

1) costs of digital assets (costs of hardware, costs of software and IT services, costs of telecommunications equipment);

2) the cost of digital assets per employee (the cost of hardware per employee, the cost of software and IT services per employee, the cost of telecommunications equipment per employee);

3) increase of digital capital (total amount of hardware per employee,

total amount of software per employee) [4].

The results at the sector level are weighed against the economic size of the sector and compared with the benchmark, which, according to the McKinsey Global Institute, is the information and communication technology sector in the United States (Table 5.1).

Table 5.1

The level of digitalization of the USA and EU economies according to the McKinsey Global Institute, 2019

The level of digitalization	Industries of the USA economy	Sectors of the EU economy
High	information and communication technologies; mass media; financial and insurance services sector	information and communication technologies; mass media; financial services sector
Average	high-tech industry; wholesale; retail	mining industry; real estate sector; educational services sector
Low	health sector; construction; hotel and restaurant services sector	hotel and restaurant services sector; construction; agriculture

Source: based on [4]

At the same time, a number of McKinsey Global Institute studies are devoted to the formation of the digital sector of the EU economy. The digitalization of the economy is assessed by three groups of countries (Table 5.2).

Table 5.2

Formation of the digital sector of the EU economy according to the data McKinsey Global Institute, 2016–2019

Indicator	Digital contenders	Digital leaders	The Big Five EU countries
Share of the digital sector of the economy, % of GDP	6.70	7.50	7.10
Growth of the digital sector of the economy, 2016-2019, %	6.40	6.00	3.40
Growth of the non-digital sector of the economy, 2016-2019, %	2.40	2.30	1.30

Source: based on [4]

The first group is represented by ten countries of Central and Eastern Europe (Bulgaria, Croatia, the Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia). This group is called “digital contenders” because these countries show great potential for the development of the digital technology industry.

The second group, the so-called “digital leaders”, consists of relatively small countries with high digitalization rates: Belgium, Denmark, Estonia, Finland, Ireland, Luxembourg, the Netherlands, Norway and Sweden.

The third group, called the “Big Five EU”, includes France, Germany, Italy, Spain and the United Kingdom. In these five countries, digitalization rates are relatively high, but lower compared to “digital leaders” [4].

According to a study by the European Commission “Digital Economy and Society Index (DESI) 2020” [5], EU member states and 17 other countries in 2016 had the same level of digitalization. EU member states have a high level of digitalization due to the expansion of broadband infrastructure and efficient use of the Internet by the local population. While non-EU countries ensure the formation of the digital economy through the development of digital skills in the population (indicator “Human capital – digital skills” – 0.60) and the digitalization of public services and the formation of e-government (indicator “Digital public services”) – 0.67 [5].

Effective e-government can provide more efficiency and savings for governments, businesses and citizens. Therefore, a successful exit strategy for the current pandemic may benefit from robust digital public services, including e-health (e.g. telemedicine, electronic prescriptions and medical data exchange) and the use of advanced technologies to improve public services (e.g. use of big data and AI). The DESI monitors the demand and supply of e-government services as well as open data policies and implementation; these are all summarised in the score for the Digital public services dimension. Estonia, Spain and Denmark lead in this domain of the DESI, while Romania, Greece and Slovakia have the lowest scores in the EU (Figure 5.1).

The forthcoming chapters will present the key trends in the five dimensions of the DESI, as well as in emerging technologies, cyber security and the ICT sector. The information is based on data gathered prior to the COVID crisis.

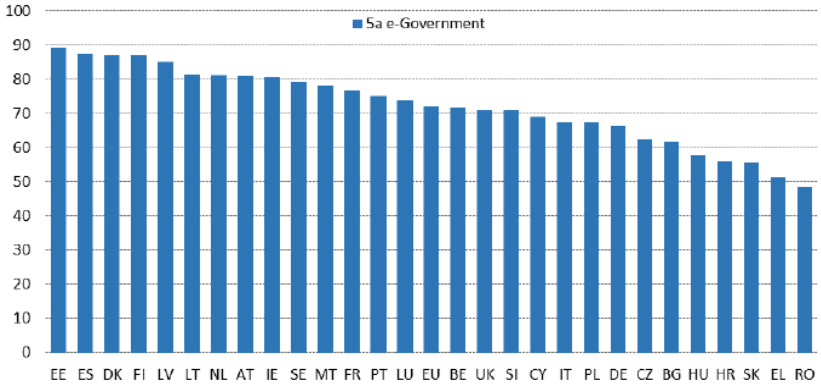

Figure 5.1 Digital Economy and Society Index (DESI), 2020
Source: based on [5]

The connectivity dimension of the Digital Economy and Society Index (DESI) looks at both the demand and the supply side of fixed and mobile broadband. Under fixed broadband, it assesses the take-up of overall and ultrafast broadband (at least 100 Mbps), the availability of fast broadband (next generation access (NGA) providing at least 30 Mbps) and of fixed very high capacity networks (VHCNs), and also considers the prices of retail offers. Mobile broadband includes 4G coverage, the take-up of mobile broadband (3G and 4G) and the indicator on 5G readiness [5]. Digital connectivity is considered a social right in the EU (Figure 5.2).

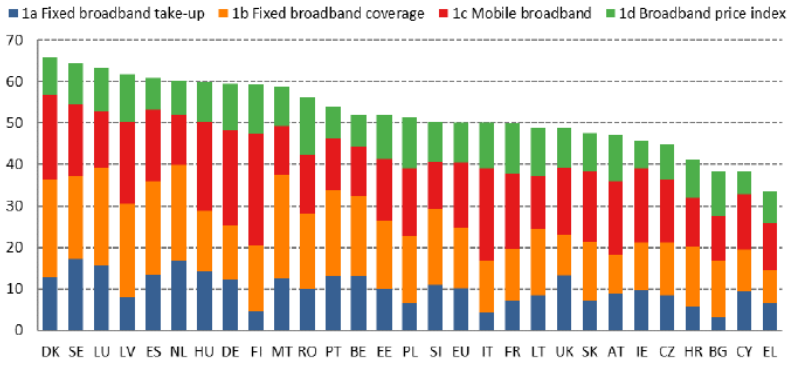

Figure 5.2 Digital Economy and Society Index 2020, Connectivity
Source: based on [5]

Speaking about the digital transformation of Ukraine in the subject area, we can not ignore the project “Digital State”, which is overseen by the Ministry of Digital Transformation of Ukraine. Aiming to eradicate unnecessary bureaucracy by merging all government agencies into a single online system, within the framework of this project, the Ministry of Culture launched the Portal “Diya”, which should be called the «face» of digitalization of Ukraine [2].

Portal “Diya” is an online service that is an information and telecommunications system, which organizationally and functionally consists of a register of administrative services, e-cabinet, mobile application, as well as other subsystems and software modules.

The main issues of operation of the portal “Diya”, in particular, the functionality and subjects of the Portal, the content of information on it and the procedure for its introduction are defined by the Regulations on the Unified State Web Portal of electronic services, approved by the Cabinet of Ministers of Ukraine.

From the content of this Regulation it is seen that the portal “Diya” is designed to exercise the right of everyone to access electronic administrative and other public services, access to government agencies, enterprises, institutions and organizations, obtain information from national electronic information resources, as well as monitoring and service quality assessments.

Currently, the portal “Diya” is, first of all, a mobile application with digital documents, as well as a portal that allows users to receive some public services in electronic format through a citizen’s office. In addition, within the framework of “Diya” there is a portal of digital education and a portal to help small and medium-sized businesses [2].

The electronic cabinet is available to any citizen of Ukraine provided he has an electronic digital signature. After a short identification procedure, the user of the office gets access to information from national electronic information resources (ie registers, cadastres, classifiers), as well as a number of administrative services in online format.

As of mid-May 2020, the functionality and information presented in Table 5.3 are available for users of the citizen’s e-office on the portal “Diya”.

The key tasks of the portal “Diya” include the following:

- providing public services online using information from national electronic information resources (i.e. registers, cadastres, classifiers);

Table 5.3

Descriptive description of the functionality of the portal "Diya» as of 31.10.2020

No.	Functional	Access to information
1	View consolidated information from government business registers	information from the Unified State Register of Legal Entities, Individual Entrepreneurs and Public Associations; information from the State Register of Real Rights to Immovable Property on objects owned by a person, as well as available encumbrances; on movable property – information on vehicles, types of encumbrances and available fines
2	State registration of an individual entrepreneur	conducting state registration of natural persons-entrepreneurs, making changes to the information about them, as well as carrying out registration Diyas to terminate business activities by step-by-step filling in the appropriate forms of applications for state registration.
3	Registration of unemployed status	the possibility of submitting an application for unemployment benefits in online format and further communication with employees of employment centers remotely.
4	Signing and verification of documents signed with the help of EDS.	allows you to put your own electronic digital signature on any document, as well as verify it.

Source: based on [7]

- creation and functioning of the user's electronic cabinet and providing access to information from national electronic information resources;
- formation of digital images of documents that a person can present (provide) on a smartphone through the mobile application "Diya";
- conducting surveys on initiatives, projects in various spheres of public life; submission of electronic appeals through the web portal;
- ensuring the consideration of citizens' appeals and administrative cases (cases considered by subjects of power for the purpose of making decisions of individual action aimed at acquiring, changing, terminating

or exercising the rights and obligations of a person, as well as protecting his rights);

- payment of administrative fees for the provision of administrative services, fines for administrative offenses, state duties, other payments; settlements for other public, in particular housing and communal services;
- providing users with information on the course and results of service provision, consideration of appeals and administrative cases in real time;
- receipt by users of the results of providing electronic services, consideration of appeals and administrative cases;
- submission of complaints by users based on the results of the provision of services, consideration of appeals and administrative cases, provision of the appellant with information on the course and results of consideration of the complaint in real time, as well as receipt of these results;
- protection of data (including personal) of the portal "Diya" from unauthorized access, destruction, modification.

At the same time, the development of the portal "Diya" is quite rapid in development. Present progress in the implementation of e-government. Implemented a number of national projects that should cover all types of e-inter action between the state (executive authorities, state e-information resources), citizens (State system of citizens' appeals) and business (automated system "Single window of e-reporting", "Single state portal of administrative services"). Legal entities and individuals are increasingly using e-digital signatures to submit e-reports to Pension Fund, Statistics, STA, customs authorities; to exchange e-documents between litigants within the E-Court project; for submission of e-appeals by citizens of Ukraine. Departmental and regional systems and registers significantly contribute to the development of e-government in the country [2].

It is worth noting that for four days the application "Diya" remained in the first positions of downloads of the Ukrainian App Store and Play Market [top-free], ahead of Tik Tok, Telegram, YouTube, Viber, Instagram, Facebook and WhatsApp. As of February 10, 2020, there are the following statistics of downloads of the "Diya" application:

- 1,047,403 unique users (those who downloaded the "Diya" without authorization);
- 870,094 authorized users (those who have logged in through

banks).

Among the unique: 646,141 Android users; 398,160 IOS users; 869,964 requests for rights; 463,552 issued rights; 869,396 requests for a technical passport; 378 339 issued technical passports [8].

At the same time, the main problems of implementation of the state policy of Ukraine in the field of stimulating the development of digitalization such as fragmentation, lack of system, consistency, completeness, consistency between the adoption of regulations and further development of mechanisms for their implementation.

Thus, the set of laws and regulations in the field of digitalization has many uncertainties and inconsistencies. Too many regulations and institutions, administrative and tax pressure on businesses. Therefore, the ability of the state to effectively cope with the assumed powers is low.

At the same time, the present requires a transition to a qualitatively higher level of use of information computer technologies and digital services, improvement of public administration in this process.

To solve these and other problems – given the current state and potential of digitalization of Ukraine – it is necessary to agree on the main strategic goals, mechanisms and regulatory support for the development of information society in Ukraine in the near future by creating a single information and communication platform.

Measures to stimulate the spread of e-education, e-medicine, e-democracy, e-commerce, e-payments, transport, security and law and order require the state to focus more on achieving a specific result. Public-private partnership mechanisms need to be more widely used in these processes.

In order to increase the effectiveness of the formation and implementation of state policy for information society, informatization, e-government, it is necessary to develop and implement a mechanism of public administration in this area, which would eliminate duplication and competition of existing mechanisms and government agencies in this area, their mutual contradictions and efforts on priority areas and strategic objectives. It is necessary to increase the complexity and coordination of the components of the policy of stimulating development in the field of digitalization of administrative services for business entities in Ukraine.

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ORGANIZATIONAL ASPECTS OF JUDICIAL PROCESSES DIGITALIZATION UNDER THE PANDEMIC CRISIS

The digitalization of judicial processes is based on a set of theoretical and methodological provisions covering the organizational aspects of ensuring the right to a fair trial. Unlike the digitalization of other processes, the introduction of the latest information and communication technologies in the organization of the work of courts requires an appropriate regulatory framework, which must be formed taking into account the European integration determinants.

The need to improve theoretical and practical methods of ensuring the right to a fair trial as a fundamental vector of approximation of domestic justice to European standards of justice in the context of European integration is a holistic methodological concept based on judicial law and international obligations of Ukraine in the judiciary. Therefore, in order to continue and achieve high efficiency in carrying out the tasks of the current stage of judicial reform on the way to European integration in the outlined direction, it is necessary to normatively enshrine the Concept of development of theoretical and organizational support of the right to a fair trial.

The study of the prospects of digitalization of the judicial process in view of the prospects of ensuring the right to a fair trial in a pandemic crisis requires an in-depth study of the organizational aspects of justice, which determine the directions and methods of information technology. One such aspect is the achievement of access to justice.

In this context, attention should be paid to the importance of simplifying procedures as a condition for achieving access to justice in

the context of the digitalization of judicial processes in a pandemic crisis.

O. Tkachuk (2016, p. 20) analyzing the results of the survey of the trust of the population of Ukraine in the court notes that more than 80% of respondents express distrust in the court, while more than 90% of respondents say that the judge adhered to ethical requirements. Thus, the high level of distrust in the court, the scientist attributes to the complexity of court proceedings. Yu. L. Lopanchuk (2011, p. 1) notes that one of the trends in the development of criminal justice at the present stage is the simplification of the trial procedure. It is reflected, in particular, in Recommendation R 6 R (87) 18 of the Committee of Ministers of the Council of Europe of the Member States of 17 September 1987 on the simplification of criminal justice. Subparagraph 7 of paragraph A (Judicial investigation before and during the hearing) of this document recommends that States apply the procedure of a "plea agreement" or similar. In such cases, the court should be able to waive the trial in whole or in part. A number of European states follow the path of simplification of court proceedings, in one form or another, the scientist notes.

H. P. Vlasova (2013, p. 96-97) notes that quite often in the legal science of other countries there is a question of reducing the procedure of criminal proceedings. In particular, one of the forms of simplified proceedings is the conclusion of plea agreements. I. I. Slyvych (2015, p. 98) argues that one of the most important problems of the criminal process is related to the effectiveness of the criminal procedural form. The practical significance of this problem has greatly increased in our time. This is due to the fact that in recent years there has been a significant increase in the workload of the courts, which is due to the increasing role of both the bodies of protection of violated rights and the growing number of crimes committed. On the other hand, the question of efficiency arises when it comes to solving the problem of the impossibility of prosecuting persons hiding abroad or in the occupied Crimea, in the ATO zone, which is temporarily not under the control of the Ukrainian authorities. Ordinary, standard procedural forms cannot provide a quick solution to the problems of criminal proceedings. Accordingly, there is a problem of ensuring the optimal term of criminal proceedings, which is facilitated by the use of accelerated forms of criminal proceedings.

V. Bobryk (2015, p. 4) emphasizes that when a court considers a particular case and administers justice in general, the goal of justice

should be achieved with minimization of time, effort and money, because the heterogeneity of court cases (both in nature and by complexity) determines the possibility of different ways to achieve the goals of justice, and hence the differentiation of judicial procedures. According to V. Bobryk, the legislative consolidation of simplified types of proceedings is carried out in order to ensure greater accessibility of proceedings in certain simple categories of cases by reducing court costs, shortening court proceedings and simplifying procedural requirements for actions of participants and court activities. At the same time, effective simplified proceedings can significantly facilitate the achievement of judicial tasks.

Along with simplifying court procedures, reducing court costs is important to ensure access to justice. According to L.A. Kondratieva and A.L. Prokopiuk (2011, p. 74), during the formation of the rule of law, the problem of the institution of court costs in civil proceedings is quite relevant, as issues related to the development of this institution directly affect the ability to exercise the right to go to court and receive judicial protection, and hence, the need for their further scientific understanding not only remained but also significantly increased.

The Convention for the Protection of Human Rights and Fundamental Freedoms, the Recommendation on Measures to Facilitate Access to Justice № R (81) 7, adopted by the Committee of Ministers of the Council of Europe on 14 May 1981, and the case-law of the European Court of Human Rights do not recognize the need payment of court costs by restricting the right of access to a court. However, given the provisions of paragraph 1 of Article 6 of the Convention and the case-law of the European Court of Human Rights (in particular, the judgment of Kreuz v. Poland (European Court of Human Rights, 2001), the payment of court costs should not impede access to the court; in such a way and to such an extent as to harm the very essence of this right, and must pursue a legitimate aim. L.A. Kondratieva and A.L. Prokopiuk (2011, p. 74) argue that court costs affect a person's ability to exercise the right to go to court and receive judicial protection and can be seen as a statutory restriction on access to justice. The optimal amount of court costs is cut off by an unfounded appeal to the court. At the same time, according to Recommendation No. R (81) 7 of the ECHR, if court costs are a clear obstacle to access to justice, they should be reduced or eliminated as far as possible.

According to T. S. Kovalenko (2013, pp. 202-203), court costs should be understood as the costs of persons involved in the case, and in case of their exemption from court costs – the costs of the state for the administration of justice. Court costs perform preventive and punitive functions, as their collection to some extent has negative consequences for the offender (parties, whose actions or omissions caused the need for judicial protection of rights and interests). The social function is that court costs must ensure the actual availability of justice. At the same time, the scholar notes that when reforming the institution of court costs, on the one hand, it is important to avoid the excessive cost of the process for those involved in the trial, and on the other – to ensure quality and fair justice, which requires considerable costs.

Thus, in the framework of improving access to justice, we should talk about optimizing court costs, and not just finding ways to reduce them, which should become one of the principles of digitalization of justice in a pandemic crisis.

Along with the optimization of court costs, attention should be paid to reducing the workload of judges, which can also be achieved by digitalizing the judicial process. R. Kuzmin (2006, p. 14), notes that the overburdening of courts of general and special jurisdiction in resolving civil and commercial cases creates such problems in society as judicial bureaucracy, lack of legality, and low quality of decisions, which ultimately leads to growing distrust to the judges. L. Galkin and N. Bogatyrev (2000, p. 41), examining the violation of procedural deadlines by courts, emphasize that some judges knowingly violate the rules of procedural law, citing the workload.

It should be noted that the workload of judges has a negative impact on ensuring the right to a fair trial, not only because of the difficulty of access to justice but also in such a component as the consideration of the case within a reasonable time. Thus, according to a study by the Razumkov Center (Alieksieiev ed., 2014, p. 63), the first place among the factors that prevent judges from considering cases within a reasonable time is the workload (71.9% of respondents), and the second place is the insufficient number of courtrooms sessions (35.6%), at the third – insufficient staff of judges (29.4%).

N.M. Kushnir (2010, p. 78), analyzing the causes and conditions of judicial errors, notes that one of the influential conditions is the workload of judges: “Overload leads to fatigue and stress, which affects the quality of law enforcement. In addition, due to the heavy

workload, a person does not have enough time to read special literature, and hence to carefully prepare a specific decision, to improve his professional level in general. Negative psychological impact on the judge may be from the uneven loading".

I.V. Demianenko (2016, p. 23) details the problem of judges' workload in the perspective of improving the judicial system, noting: "Both in absolute terms on the total number of cases and materials considered, and on the level of the average monthly workload of judges work, bear the main burden of the judicial system of Ukraine. This allows us to define them as the main, basic link of the judiciary of our state. Balancing the workload of judges from different parts of the judiciary, bringing the number of judges in the courts, as well as judges' remuneration in line with the workload of judges will help increase the efficiency of Ukraine's judicial system".

The main ways to relieve judges are the introduction of simplified procedures and electronic litigation. A similar progressive position is taken by R.O. Arsirii (2012, p. 480), emphasizing: "The judicial system has been reformed several times, resulting in positive steps: increasing the number of judges, the introduction of appellate instance and specialization of courts, improvement of court logistics, the introduction of additional positions in the court (assistant judge, court administrator, etc.). However, these steps are not enough, as further mandatory systemic regulation requires problems with imperfect legislation, low level of qualification of judges, insufficient level of logistics of courts, the large and uneven workload on judges. For all these reasons, in my opinion, the issue of overloading the court and the workload of judges is the most important". We should also agree with V. O. Yeltsov (2010, p. 364), who emphasizes that the computerization of courts today is a strategic direction to increase the efficiency of the judiciary due to the growing burden on the judiciary is growing every year. In the absence of modern computer technology in most courts of the first instance, the jurisprudence is characterized by serious violations of the procedural deadlines for consideration of cases and applications.

It should be noted that informatization to ensure the right to a fair trial in the direction of improving access to justice does not always have positive consequences. An illustrative example is the analysis of the system of automated distribution of court cases between judges carried out by T. Nechytailo (2016).

In our opinion, informatization and automation of the work of a judge in the context of digitalization of judicial processes in a pandemic crisis should take place systematically. In this aspect, the proposal of R. O. Arsirii (2012, p. 483) deserves attention. Arguing that one of the main problems in the development of the judicial system today is the workload of courts and the overload of judges working in them, the scientist argues that one of the means to solve this problem may be the use of information technology based on a systematic approach to their implementation. This will provide an opportunity to balance the various levels of the judiciary, to focus the main forces directly on improving the work of judges.

A systematic approach is observed in the following considerations V. O. Yeltsov (2010, p. 368): "The experience of court informatization shows that the latter are implemented inconsistently, in the absence of a single state project and adequate funding. Insufficient computer technology and a large proportion of obsolete computers make it difficult to implement the latest information technologies. Insufficient attention is paid to the development of organizational, legal, and methodological support, the formation of a single system of classification and coding, and a unified system of document management… Despite modern scientific and technical achievements, from the whole chain of a certain technological process, modern science does not allow to automate decision-making processes and the formation of managerial influence, because they largely depend on human will. And this is not only a technical problem but also a legal one because the decisions made involve legal liability that cannot be transferred to a computer".

O. V. Shamrai (2014, pp. 178-179) emphasizes that the priority and most important tasks facing the judiciary of Ukraine to improve the quality of justice and the productivity of courts, in particular through the development and unified use of innovative technologies, are as follows:

– identify performance indicators of the court and reflect them in statistical reports, as well as analyze the procedures carried out in the clerical services in order to describe all record-keeping processes and the procedure for working with documents and, if necessary, improve them;

– ensure compliance of the software used in the judicial system with the latest, improved work procedures;

– develop and implement a Court Informatization Plan. This document should define both the principles, standards and timeframes for implementation and financial calculations necessary to ensure the functioning of a single judicial information system;

– not only to improve the software/information support of the automated system of office work of courts of Ukraine but also to carry out systematic control over its functioning.

According to the results of the study, it is established that the conceptual principles of reforming the judicial system of Ukraine in a pandemic crisis should be determined in view of the current processes of digitalization of the judiciary. The proposed recommendations for the digitalization of judicial processes in a pandemic crisis are based on the methodological unity of provisions for achieving the European level of ensuring the right to a fair trial based on a systematic approach to the development of judicial law in Ukraine. Taking into account domestic experience and European experience of ensuring the right to a fair trial, among the main principles of reforming the judicial system of Ukraine in a pandemic crisis should pay attention to ensuring access to justice, improving the quality of professional judges, optimizing and achieving financial, logistical and personnel efficiency of courts.

It was stressed that the main areas of improving access to justice in a pandemic crisis are providing legal assistance, simplifying procedures and reducing the cost of litigation, reducing the workload of judges, using alternative dispute resolution, and introducing new information technologies. The analysis of each of the presented directions from the methodological point of view of the development of judicial law testified to their systemic unity and complementarity. Based on the study of the content of each of them as an element of access to justice, the importance of achieving a synergistic effect in ensuring the right to a fair trial in the digitalization of the judiciary in a pandemic crisis.

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PRIORITY DIRECTIONS FOR DEVELOPMENT OF DIGITAL MARKETING IN THE CONDITIONS OF GLOBALIZATION

Marketing is one of the areas whose development is significantly influenced by digital transformation. Marketing services have mastered new practices in the context of business digitalization. In this regard, the development of digital marketing is being actualized based on the formation of digital channels for product promotion and the emergence of new requirements for the organization of marketing activities [1-7]. This is confirmed by the results of the survey: 70% of customers want to use digital marketing tools, but they completely do not understand what it is.

Based on the generalization of the specialized literature on marketing [8-18], it has been established that there are many definitions of digital marketing. However, a number of scientific schools identify this concept with Internet marketing. However, as a result of the analysis of scientific literature [19-23] and our own research, it was revealed that digital marketing includes Internet marketing (SEO-website promotion, context, webinars, that is, all channels available to the user only on the Internet), as well as advertising and promotion on any digital media outside the network. That is, digital marketing differs from Internet marketing in such characteristics as the target audience, the sphere of influence on the target audience, distribution channels, and methods of communication with the audience (Table 5.4).

Digital (interactive, digital) marketing is considered as a type of marketing activity that involves the use of various forms of digital

channels to interact with consumers and other counterparties in the market. The main advantages of digital marketing are interactivity, the absence of territorial restrictions, easy access to resources, and attraction of the target audience.

Table 5.4

Differences between Internet Marketing and Digital Marketing

Feature	Internet marketing	Digital marketing
The target audience	Internet users	Internet users and offline audience in the online market
Scope of influence on the target audience	Online scope	Online and offline sphere
Distribution channels	Internet channels	All kinds of digital channels
Ways to communicate with the audience	E-mail mailings, landing pages, sites, advertising (search, banner, targeted, contextual)	E-mail mailings, landing pages, websites, digital TV, advertising (search, banner, targeted, contextual, in online games, mobile applications), instant messengers, POS terminals, local networks

Source: compiled on the basis [19-23]

Digital marketing in terms of marketing communications involves the use of all possible forms of digital channels to promote a brand. Digital marketing is one of the important areas of the modern information society, as well as a general term for the marketing of goods and services, which uses digital channels to attract and retain customers.

Digital marketing is a type of marketing activity that through digital channels, using digital methods, makes it possible to interact with target market segments in a virtual and real environment. This is the whole range of marketing actions, that is, modern marketing, which is inherent in duality due to its hybrid nature: some of the functions are implemented online, and some in the offline environment.

Thus, scientists understand digital marketing as: a communication tool; type of marketing activity, which is carried out using digital product promotion channels; digital communication that occurs both online and offline; complex promotion, which includes many channels; using all possible forms of digital channels for brand promotion; a way to promote a business using digital technologies; an integrated approach

to promoting products in a digital environment; brand promotion and customer acquisition using all possible digital channels (social networks, the Internet, e-mail newsletter, contextual advertising, content marketing); integrated promotion of a product or service using different types of marketing; integration of a large number of different technologies (social, mobile, web, CRM systems) with sales and customer service; a set of different marketing tools to attract customers from both online and offline environments; multichannel business promotion in the information space; marketing, which provides interaction with customers and business partners using digital information and communication technologies and electronic devices; implementation of marketing activities using digital information and communication technologies.

Distinctive features of digital marketing are: interactivity; targeting; the ability to conduct web analytics. The main goal of digital marketing is to attract and retain customers, increase business profitability. The goal is achieved exclusively by attracting visitors to the Internet resource and transforming them into potential and then loyal customers. The tasks of digital marketing include collecting contact information of interested users; increasing reach and brand awareness; formation of a positive image; increasing consumer loyalty; collection of data for marketing research; informing the target audience; formation of a base of regular customers. It performs a full range of marketing tasks, but uses the Internet as its primary channel of interaction with the audience.

Digital marketing channels are: content marketing (SEO, SERM, SMM, content PR, E-mail marketing, ORM); digital advertising (contextual, targeted, display advertising); multichannel promotion; web analytics (Table 5.5).

Digital marketing does not include product promotion using traditional channels such as newspaper ads, TV ads, billboards (except for those with a QR code that can be used to go to the site). The modern reality is the transformation of media, distribution processes, consumers with new expectations and requirements. That is, digital channels require the development of a fundamentally new communication strategy with consumers.

The benefits of digital marketing include measurability, speed, versatility, and large reach. The main advantage of all digital promotion channels is that their effectiveness is easy to track. Banner clicks, link clicks, viewing time and depth, number of views and many other information about the performance of various tools is collected

Table 5.5

Features of digital product promotion channels

Channels	Characteristic
SEO	due to complex optimization, an increase in the site's position in the search results is achieved
SERM (Search Engine Reputation Management)	managing customer brand reputation in search results
SMM	brand promotion on social networks, regular content updates on Social media. Interaction with users
PR content	creation and placement of native advertising, press releases, image articles about the company on the most visited sites, in online media and social media
E-mail-marketing	formation of a mailing base for the target audience, selection of specialized content development specialists for regular mailing
ORM (Online Reputation Management)	brand reputation management on the Internet, promotion of non-brand reputation queries to form a separate channel for new sales
Contextual advertising	it is one of the most effective tools for attracting interested visitors to the site. Advertisements are shown only to those users who are currently searching for a product on the Internet or have recently searched
Targeted advertising	this type of advertising is most popular on social networks, where it is possible to identify a suitable target audience for the sale of products or services
Display advertising	a set of text, graphic and sound information on the Internet and offline space, motivating potential buyers to pay attention to advertising materials about products / services
Multichannel promotion	this product integrates all digital promotion channels. Based on the results of the test period, the cost of one call / application is determined and all subsequent applications are paid at a fixed cost upon their receipt
Web analytics	analysis of quantitative data and qualitative indicators of the resource and sites of competitors, development of strategies to increase the behavioural indicators of users and improve the conversion of the site for potential customers

Source: compiled on the basis [24]

automatically and provided in a form that is convenient for evaluation and analysis. Thanks to the capabilities of digital tools, there is the ability to instantly reach thousands of users around the world with one ad impression, collect and analyze huge amounts of data on their reactions, and make adjustments to the campaign. This takes digital marketing to a new level of development. Customization flexibility, for example, advertising targeting, allows you to set up a campaign to work only with a target group of Internet users, excluding irrelevant impressions, which helps to reduce costs. The benefits of digital marketing include measurability, speed, versatility, and large reach. The main advantage of all digital promotion channels is that their effectiveness is easy to track. Banner clicks, link clicks, viewing time and depth, number of views and many other information about the performance of various tools is collected automatically and provided in a form that is convenient for evaluation and analysis. Thanks to the capabilities of digital tools, there is the ability to instantly reach thousands of users around the world with one ad impression, collect and analyze huge amounts of data on their reactions, and make adjustments to the campaign. This takes digital marketing to a new level of development. Customization flexibility, for example, advertising targeting, allows you to set up a campaign to work only with a target group of Internet users, excluding irrelevant impressions, which helps to reduce costs.

The digital marketing industry is dynamic and constantly changing [25; 26]. In this regard, it is necessary to constantly monitor analytical materials and track development trends. Among them:

93 % of all online interactions start with a search engine. This shows how important it is to invest in SEO techniques. Increasing the ranking of a company or business website in search engines may be the best form of advertising a product or service;

72 % of internet marketers consider creating high quality content as the most effective SEO tactic;

53 % of marketers see blogging as their top priority in content marketing;

70 % of marketers don’t have a consistent or integrated content strategy the most successful marketers spend 40 % of their total marketing budget on content marketing;

the average indicator for all respondents is 26 %;

89 % of marketers prioritize improving their ability to measure and analyze marketing impact content marketing revenue in 2020 is

approximately 300 billion dollars USA;

70 % of Internet users want to learn about products through content rather than traditional advertising;

about 58 % of marketers say they often manage to achieve their marketing goals;

five main B2B content marketing tactics: social media content 92 %; e-newsletters 83 %; articles on the site 81%; blogs 80%; personal meetings 77 %;

57 % of content downloads attract leads with the highest conversion rates;

nearly 90 % of marketers say their social marketing efforts have increased the visibility of their business, and 75 % say they've increased traffic;

video accounts for 80 % of consumer online traffic;

by 2022, the number of emails may increase to 347 billion. This proves that email is still one of the best ways to reach your target audience;

98 % of sales reps reach their quotas through social media. Sales methods must evolve to match the ever-changing consumer behavior. For example, sales agents can use social media to connect and interact with potential customers;

according to a HubSpot study, at least 71 % of customers who have a good brand experience through social media are likely to recommend it;

more than 74 % of 400 UK and US companies surveyed already have a website personalization program;

in 2020, retention (58 %) overtook conversion (55 %) and acquisition (45 %) as a key goal of website personalization;

only 54 % use AI prediction segments; barriers to scaling personalization strategies include: lack of experience (37 %), limited functionality (36 %), and lack of time (35 %);

over 40 % of online transactions were completed on mobile devices within 4 months;

51 % of consumers use mobile devices to identify new brands and products on the market;

88 % of consumers don't return to a site due to bad experiences.

According to Statista, global digital ad spending is on the rise every year. So, in 2021, their volume will increase by 58.3 % compared to 2017 and by 83.1 % in 2024 (Figure 5.3).

As analysts at Gartner note [27], marketing is transformed under the influence of such main factors: changes in consumer behavior; stricter

data use legislation; organizational changes (more and more data scientists are involved in marketing); automation, which is becoming one of the key elements of marketing technology. Driven by these factors, by 2022, the main strategic goal of marketing activities will be profitability instead of improving customer experience (CX).

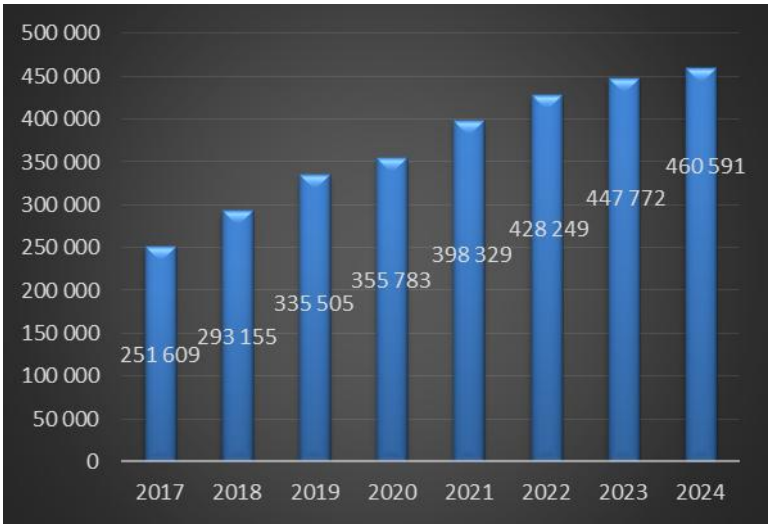

Figure 5.3 Global digital ad spend in the world from 2017 to 2024, USD million

Source: built according [28]

There are 3 phases of digital marketing development:

working with data, training employees and expertise – first, you need information about the behavior of buyers, their actions about purchases and basic indicators of online marketing (clicks on the site and steps to conversion);

building connections – the company must integrate analytics across all channels and create cross-functional teams, where related departments are collected. It is also important to combine internal and external sources of online audience data. It helps to better understand users, automate marketing messages and develop, test and customize ads faster;

from integration to multi-factor marketing – at this stage, technologies are integrated into the entire structure of the company. The

organization monitors the performance of each channel, analyzes every purchase step, increases sales through personalized marketing, and reduces costs through automation.

The key trends in the development of digital marketing in the global information space are:

the emergence in companies of positions such as director of customer service, director of experience, director of digital technology and director of marketing data, who will establish and manage human and machine or system connections in the company. This role will create processes, policies and procedures to ensure that data is collected and integrated into the customer data platform. 61 % of CEOs surveyed by MemSQL indicated that machine learning and artificial intelligence will be the most significant company initiatives in 2019;

enhancing the role of the digital brand manager, who promotes the products produced by the company, by transforming traditional methods of brand management, marketing and information into digital interaction with consumers;

the emergence of a tech-savvy martechnologist – marketer 4.0;

Artificial intelligence and machine learning are making hyperpersonalization a reality – 94 % of companies agree that personalization is critical to their success. The main barriers to personalization include IT obstacles (47 % of respondents) and outdated technology (46 %);

transformation of digital marketing agencies into consulting agencies – with a combined revenue of 13.2 billion dollars USA, the marketing divisions of Accenture, PwC, IBM, Deloitte are below WPP, Omnicom, Publicis Group, Interpublic, Dentsu. Consulting and services provided are often combined with a deep focus on technology services;

the GDPR (General Data Protection Regulation) helps marketers improve data hygiene, resulting in better targeting and better experiences. An IBM study found that nearly 60 % of organizations surveyed see GDPR as an opportunity to improve privacy, security, data governance and as a catalyst for new business models;

Agile Marketing Implementation – a report from AgileSherpas noted that about 36.7% of marketing teams practice agile marketing to quickly set marketing priorities, get better work done, and increase productivity;

merger of MarTech and ReklamoTech – corporate brands use on average more than 90 marketing tools. The ability to connect to data and use it in artificial intelligence to understand customers in real time and optimize advertising costs is helping to create a flexible MarTech +

Advertising ecosystem. This will allow markets to continually examine the impact of their spending on media and the profit margins achieved. By 2020, advertisers in the US will spend about 69 billion dollars USA on digital advertising, representing 86 % of total digital advertising;

customer focus will drive continuous transformation – IDC FutureScape research predicts that by 2022, 35 % of customer experience organizations will be adopting commercial business models everywhere and generating 50 % of revenue from contextual discovery.

The priority directions for the development of digital marketing in the context of globalization include:

– personalization;
– influencer marketing;
– user-generated content;
– chat bots;
– augmented reality;
– content as the basis of marketing;
– video creation;
– posts with the option to purchase;
– data visualization;
– multichannel marketing;
– search by images;
– communication through instant messengers.

Thus, digital marketing is an effective type of product promotion activity using a set of digital channels. To develop digital marketing, it is necessary to introduce such modern tools as short videos; chat bots; voice search; video marketing; content; bidding in real time, providing for the purchase and sale of advertising displays at auctions; Artificial Intelligence; native advertising; audio content for more coverage; internet television; prompt response to mentions; microinfluencers; strategic planning and omnichannel; end-to-end analytics as the most effective way to optimize advertising budgets and make management decisions.

The prospect for further research is the development of proposals for transforming the marketing activities of enterprises using digital technologies.

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PRIORITY DIRECTIONS OF DEVELOPMENT OF RETAIL ENTERPRISES OF UKRAINE IN THE CONDITIONS OF A PANDEMIC

In modern conditions, the conduct of economic activity by trade enterprises is complicated by the increasing negative impact of environmental factors. The global pandemic COVID-19 disrupted the normal way of life of ordinary citizens around the world and made

adjustments to the conditions of doing business. One of the ways to maintain a competitive position in the market, ensuring a steady increase in sales is the use of modern information technology trade. The use of forms, tools and methods of e-commerce by trade enterprises helps to increase their efficiency and effectiveness.

To date, a number of scientific papers have been devoted to the study of problems and trends in the development of retail trade in Ukraine.

Thus, the substantiation of theoretical and applied principles of functioning and dynamics of domestic trade of Ukraine, regulation of domestic trade in the modern period of development of the national economy in the context of globalization is considered in the work of A. Mazaraki,V. Lagutina, A. Gerasimenko and others [1].

Determining the theoretical foundations of business networks in Ukraine, the main directions for improving state policy and the mechanism of state regulation of business networks in Ukraine, the study of retail and wholesale trade in Ukraine, the prerequisites for business networks and their impact on the efficiency of trade. devoted the work [2].

The monograph is devoted to the study of characteristic tendencies of innovative development of trade enterprises of Ukraine, features of their innovation strategy, innovative mechanism of innovative development of trade enterprises [3].

Problems of trade entrepreneurship development in Ukraine are revealed in scientific works [4].

The article [5] examines the negative manifestations and consequences of the impact of global instability of the world, caused by COVID-19, on the domestic sphere of retail trade and the functioning of its individual operators. On the basis of the analysis of the most effective practices of adaptation of retail to new crisis conditions, behavior and inquiries of consumers the directions of changes of business model of retailers are offered.

Factors such as increasing the production of consumer goods, expanding their range, developing transport infrastructure, creating a modern logistics infrastructure, and developing modern information systems and technologies contributed to the rapid development of retail trade in Ukraine.

At the present stage of development of retail trade in Ukraine there is a particularly rapid development of retail chains. At the same time, the development of trade networks is especially active at the present stage of development of retail trade in Ukraine.

The trade network is a set of similar trade business units located in a certain area for the sale of goods (services) and customer service, and which have a single control center, a single business technology, common external and internal characteristics and parameters of the trade process, as well a system of combining organizational, economic, financial, technological ties, efforts and resources for the effective implementation of the socio-economic function of trade [5].

Retail chains have a number of advantages over traditional trading formats. Among the advantages of retail chains are the following. When interacting with suppliers, retail chains use the opportunity to reduce the purchase price due to large volumes of purchases, have the opportunity to reduce transportation costs per unit of goods. Thanks to the large number of stores, retail chains have the opportunity to balance profits and losses. It is the retail chains that diversify their activities through the introduction of their own production, production of goods under its own brand. The use of modern information systems allows you to manage material flows, providing cost optimization.

For example, the ATB trade network has the assortment of stores is over 3500 items including more than 800 items of ATB private labels goods. By minimizing the cost of logistics and advertising the price of private label goods is lower than average but the quality meets well-known brands. ATB discounters offer customers their private label products which are represented in most product categories and cover more than 600 commodity units [6].

Retail chains are the leaders in the introduction of advanced technologies, including building an interactive integration of information processes with partners (exchange of sales data, synchronization of sales and procurement processes, flexible pricing, implementation of loyalty programs, discount offers for consumers, etc.); providing automation of logistics of all stages of management of commodity stocks and assortment. This solution allows retailers, suppliers, manufacturers, and logistics companies to save significantly on costs associated with the synchronization of information about the needs of goods, timing and control of delivery, shipment, allows you to track each individual product from the manufacturer to the store shelf, fully automates the replenishment of inventories of a particular outlet and the company as a whole, placing orders for the required products, taking into account current stocks, sales, losses, deliveries, sales plans, seasonality and other factors. Purchases of large consignments of goods allow you to get better prices and payment terms, which, in turn, has a

positive effect on prices in stores [3, p. 168].

Leaders among national trading companies are: ATB-Market LLC (ATB supermarkets), Fozzi holding (Silpo supermarkets, Fora home-based stores).

According to the Ukrainian Association of Retailers (Table 5.6), the largest amount of sales revenue was received by such retail chains as: “ATB”, “Silpo”, “Epicenter” [8].

According to the Ukrainian Association of Retailers [8], the largest amount of sales revenue in 2018-2019 was received by the retail chains “ATB”, “Silpo” and “Epicenter” (Table 5.7).

Table 5.6

TOP-5 retailers in terms of revenue growth

Company	Revenue in 2019, billion UAH	Revenue in 2018, billion UAH	Absolute increase, billion UAH
ATB-Market	104,91	85,73	19,18
“Silpo”	65,45	57,02	8,43
“Epicenter K”	45,69	41,46	4,23
“ROZETKA”	12,19	8,52	3,67
“EVA”	12,86	10,07	2,79

Source: [8]

ATB took the first place among domestic trade networks in terms of income. ATB’s revenue in 2019 increased compared to 2018 by 19,18 billion UAH and amounted to 104,91 billion UAH [8].

ATB-Market (part of Corporation ATB) is the largest, fastest growing network in Ukraine.

In 2000 ATB network was the first that introduced a new self-service system in discounter format in Ukraine. Discounters are the stores with a wide variety of goods at wholesale prices. Considering convenient location and high-quality products this format corresponds the best to Ukrainian consumers.

So today millions of people have appreciated the advantages of ATB discounter chain. According to market research it is the largest retail network in Ukraine with more than 750 stores in more than 202 cities in 16 regions of Ukraine. During 21 year ATB has been known as stores where you can buy qualitative goods and also save the family budget [6].

In second place in the list of TOP-5 retailers in terms of income is the network “Silpo”, whose revenue in 2019 amounted to 65,45 billion UAH (Table 5.6).

According to the official website of the FOZZY group of companies, “Silpo” is the leading supermarket chain in Fozzy Group’s sales structure. Today, the chain consists of 241 supermarkets in 60 cities of Ukraine. One of the largest national chains of food supermarkets. “Silpo” supermarkets are self-service stores with product ranges consisting of up to 20,000 items of food and related products, depending on the sales area of each store [9].

According to the results of 2019, Epicenter trade network ranks third among national trade networks in terms of revenue, with a revenue of 41,46 billion UAH (Table 5.6).

Epicenter K is a leader in the Ukrainian retail market of the segment of goods for construction and repair with all-domestic investments, which has 59 operating shopping centers in different regions of Ukraine. In the shopping centers of the network, the total retail area of which exceeds 1.5 million square meters, represented more than 550,000 items from more than 5,500 suppliers.

The biggest negative impact on the network’s activities this year was the implementation of quarantine measures in connection with the coronavirus pandemic. According to Volodymyr Honcharov, Director of Retail of the Epicenter Shopping Center Network [10], the following changes were made to adapt to these measures. Quarantine has significantly accelerated the introduction of various online services. For example, Epicenter is now actively working to expand different types of digital technologies to improve the shopping experience.

We are talking, for example, about buying online such goods and services as toning paints, wallpapers and shutters to order, cutting goods (eels, film, linoleum, pipes, etc.), auto parts.

In addition to a broad commodity offer, it is equally important to provide logistics. During the quarantine, online sales with delivery increased by 224 %, and with pickup – by 262 %. That is why we are actively working on increasing our own capacities – the construction of logistics complexes, which will serve not only shopping centers, but also online trade.

We open in a new format the centers of order issuance (BCWC) of the online store epicentrk.ua with the address storage system, automation of all processes, a comfortable waiting area with a children's corner, as well as online storefronts, with which you can find the necessary goods, compare different models, view reviews and order goods that are not in the store.

The largest increase in profit in 2019 is shown by the ATB network, whose profit increased to 4405,44 million UAH (Table 5.7).

After several years of losses, the Ukrainian division of the German group Metro showed a profit for the first time. If, according to the reporting, if in 2018 the net profit amounted to 467 million UAH, then in 2019 the net profit will increase by 867,32 million UAH (Table 5.7).

General Director of Metro Cash & Carry Ukraine Tino Tsaiske notes that: "Coronavirus has led to the development of digitalization of our industry. For example, in five months of quarantine, the share of online sales increased from 3 % to 5 %. In some stores of our network, it has more than doubled compared to the pre-quarantine period.

Table 5.7

TOP-5 retailers of Ukraine in terms of profit growth

Company	Profit / loss for 2019, million UAH	Profit / loss for 2018, million UAH	Absolute increase, million UAH
ATB-Market	4405,44	2723,0	1682,44
Metro Cash&Carry Ukraine	1334,32	467,0	867,32
"Epicenter K"	3720,41	3025,0	695,41
McDonalds, Ukraine	945,77	657,0	288,77
Fora	38,98	-170,0	208,98

Source: [8]

We are currently developing this area. Metro drive service was also introduced. Consumers choose the product on the site and pick it up already packed in the store. This service demonstrates explosive growth. In large cities, demand for it has already doubled. No one wants to stand in line: consumers want less contact with the store, but the requirements for delivery of goods remain high" [11].

The stimulus for the development of domestic trade networks is fierce competition in the industry. In recent years, large foreign companies have entered the Ukrainian market, including Metro Cash & Carry (Germany), Billa (Austria), Auchan (France), Novus (Lithuania) and others. The advantages of the development of large foreign companies are not only access to advanced technologies, but also access to investment, in particular access to cheap credit resources of foreign banks. Due to the advantages of cooperation with foreign partners and

successful logistics solutions, they offer consumers goods at lower prices and thus gain their commitment. For example, the French company Auchan is expanding the range of food products and increasing the number of staff in stores to provide high quality customer service, offering products at lower prices compared to the average market.

According to the information provided in the report “Global Retail Sector in 2018” by Deloitte, the following trends in retail development are outlined:

– Creating high quality digital capabilities. Retailers around the world are rapidly adapting to the fact that for the consumer, shopping is not just about shopping in a physical or online store or choosing a particular sales channel. Instead, consumers combine different channels of shopping.

– Creating a unique and attractive shopping experience in stores. Physical retail stores will not disappear. 90 % of retail sales worldwide are still in physical stores. But to be able to compete with the convenience and endless range that online stores offer, the unique customer experience and brand engagement is extremely important.

– New opportunities for the retail sector with the help of the latest technologies. The Internet of Things, artificial intelligence, augmented and virtual reality and work – these are the things that every retailer should pay attention to. Retailers must adequately and holistically plan, develop strategies and implement them in all channels, regardless of whether the final sale takes place in a store or online. And this is the key reason why companies around the world are actively investing in online and digital. More than ever, the retail industry is replete with examples of companies creating, purchasing or partnering to achieve synergies between e-commerce and offline, and delivering purchased goods to a physical store or directly to a customer's home. Innovation, collaboration, consolidation, integration and automation are likely to be needed to strengthen business, which will significantly affect how retailers will do business today and in the future [12].

The main factors that have a negative impact on retail activities are: high inflation, declining real incomes, the coronavirus pandemic and related quarantine restrictions. Quarantine restrictions have seriously affected the economic activity of trade enterprises. The government has imposed restrictions on the operation of trade establishments. Therefore, in order to work in such conditions, the trading business began to switch to online sales. Online sales have increased during quarantine

restrictions, and for many companies, e-commerce has remained the only source of revenue.

Thus, the main direction of trade business development is the use of e-commerce.

According to Euromonitor International, developments such as 5G, artificial intelligence (AI) and increased sales through social platforms such as Instagram are likely to dominate the market. Although innovation is key, it is necessary to take into account such consequences as the loss of brand control over relations with consumers [13].

The main factors that have a negative impact on retail activity in Ukraine today are: high inflation, declining real incomes, the COVID-19 pandemic and related quarantine restrictions. It is the latter that have had a significant impact on the economic activity of domestic trade enterprises. Since March, the Government has imposed a number of restrictions on the operation of trade establishments. Therefore, in order to work in such conditions, the trading business began to switch to online sales. Online sales have grown significantly during quarantine restrictions, and for many companies, e-commerce remains the only source of income today.

Thus, the main direction of further development of trade business in the world and in Ukraine, in particular, is the use of e-commerce.

Modern retail enterprises, especially large formats, are actively implementing innovative business technologies. More and more retail chains in Ukraine are paying attention to e-commerce. Thus, such quite successful enterprises in the Ukrainian market as declare positive changes in this direction [14]:

1. Watsons which have a male audience thanks to the online store.

2. Comfy, having transferred a significant part of the range to the Internet has increased sales, and today is a leader in one of the most competitive segments of retail, with the number of stores almost twice less than competitors, makes more sales.

3. METRO Cash & Carry Ukraine, since the launch of e-commerce in 2017, the average monthly number of online purchases of end customers has increased by 13 %, the average monthly amount of purchases – by 25 %, and the average check – by 22 %.

Studying the situation in the international partnership COVID-19 in the domestic trade today, the development of trade business in Ukraine contributes to the focus on the active use of innovative technologies that offer e-commerce tools. Introduction of e-commerce tools, digital technology and development of omnipotent business models into

widespread activities to help increase losses in sales of goods, improve economic and financial performance and provide opportunities for further economic growth for domestic trade enterprises.

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Chapter 6

FORMATION OF STRATEGIES AND MODELS FOR OVERCOMING CRISIS PHENOMENA IN CERTAIN SECTORS OF THE ECONOMY

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FINANCIAL MECHANISM OF ACTIVITY CREDIT UNIONS

The current state of our country's economy and financial market increasingly requires coherence and direction of funds' the movement from savings entities to borrowers, where non-bank credit institutions play an important role. Among such institutions credit unions are especially significant, which are an effective institution in the accumulation of funds and meet socio-economic necessities.

Playing an essential role in the financial and credit system of Ukraine, they are reliable means of financial support and increase and improve the economic well-being of the country.

The main legal document that determines the organizational and legal basis for the establishment and operation of credit unions, their associations, rights and responsibilities of members – is the Law of Ukraine "On Credit Unions" [1], according to which a credit union is a non-profit organization founded by individuals on a cooperative basis in order to meet the needs of its members in mutual lending and financial services through joint cash contributions of the credit union's members. This and other regulations form a legal regulation system of credit unions of Ukraine, the list of which is presented in Table 6.1.

Table 6.1

Regulatory framework for regulating the activities of credit unions of Ukraine

Document title and source	Scope
On credit unions: Law of Ukraine [1]	The organizational, legal and economic bases of credit unions' creation and activity, their associations, the rights and duties of credit unions' members and their associations are defined.
On financial services and state regulation of financial services markets: Law of Ukraine [2]	General legal bases in the field of financial services, implementation of regulatory and supervisory functions in the provision of financial services have been established.
About the state register of financial institutions: Regulations of Natskomfinposlug [3]	The necessity and procedure for entering non-bank financial institutions in the state register have been determined.
Licensing conditions for credit unions to provide financial services: Resolution of the Cabinet of Ministers of Ukraine [4]	The organization and procedure for issuing a license to operate to credit unions have been approved. Procedure for issuing licenses to credit unions and validity.
List of internal regulations and procedures of the credit union: Order of Natskomfinposlug [5]	A standard list of internal regulations and procedures of a credit union is given, as well as requirements for the organization of work with them.
Requirements for software and special technical equipment of credit unions related to the provision of financial services: Order of Natskomfinposlug [6]	Requirements for software and special technical equipment of credit unions related to the provision of financial services have been established.

With the help of this system of regulations the state controls and supervises the activities of credit unions, establishes the conditions for the creation, fulfillment of obligations and liability for non-compliance of obligations to members, highlights the main features of financial activities. In addition to those listed in Table 6.1 legislative acts, conditions of activity of credit unions are regulated by the Tax Code of Ukraine [7].

It defines the status of credit unions as non-profit organizations and

sets the main requirements for the taxation of these institutions. Lending to its members within the organizational and economic mechanism of credit unions in the financial services market is the dominant function of their activities.

The financial mechanism of credit unions is shown in Figure 6.1.

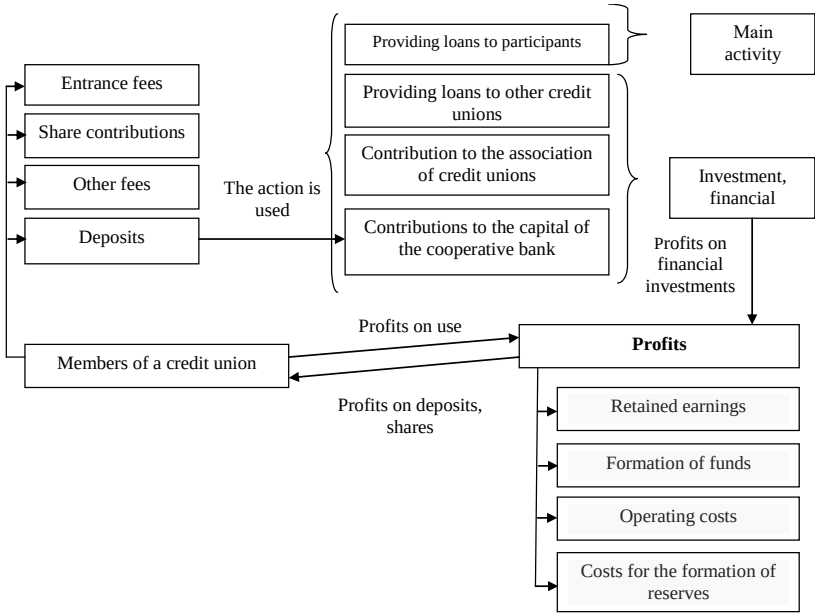

Figure 6.1 Financial mechanism of credit unions

Credit unions, given their cooperative economic nature in the financial services market, are an environment for reconciling the interests of members and the credit union itself. In the case of such financial mechanism functioning, the credit union on the one hand accumulates financial resources, and on the other – uses them to provide loans to its members. Such activities can be described as self-sufficiency or self-financing, which has a social nature of orientation and is characterized by a high level of responsibility of the union to its members.

The features of financial instruments of attracting financial resources of credit unions considered by us affect the methods of the financial mechanism of the credit cooperation system, among which we will highlight financial planning, financial management, financial regulation,

financial security and financial control (Table 6.2).

Table 6.2

Features of methods of the financial mechanism of activity of credit unions

Type of financial method	Content of the financial method	Feature of the financial method
1	2	3
Financial planning	─ Determining the potentially necessary amount of financial resources for a credit union; ─ determining the type of source of financial resources from the list of possible and available; ─ determining the scope of active operations from the list of possible; ─ determining the cost of financial services.	Development of a financial plan (budget) in compliance with the conditions for ensuring the financial stability of credit unions and accessibility for the population to their financial services, taking into account both the financial standards established by law and the existing demand and supply of financial resources of credit unions.
Financial management	─ Formation and use of funds of financial resources; ─ determining the directions of financial flows in accordance with the objectives of credit cooperation.	The need to balance the interests of borrowers and depositors: setting affordable interest rates on loans and market-friendly – on deposits
Financial regulation	─ Maintaining financial stability; ─ payment of insurance payments to depositors.	─ The need to comply with financial standards, taking into account ensuring the availability and attractiveness of financial services for members of credit unions (depositors and borrowers); ─ ensuring the optimal ratio in the structure of liabilities and assets of credit unions.

Table 6.2 (continued)

1	2	3
Financial security	─ obtaining the greatest benefit by members from the financial activities of a credit union by reducing costs or increasing income; ─ creation of mechanisms for financial recovery of credit cooperatives and guarantee payments on deposits.	─ The main financial resource of credit cooperatives, the source of their reserves are membership fees; ─ self-financing and lending are the core of financial security, as credit unions operate on the basis of mutual credit: the accumulation of their members' funds and redistribution of these funds through lending, as well as redistribution of mobilized funds between credit unions of different levels through lending.
Financial control	─ Ensuring compliance by credit unions with financial standards, rules of financial activities, use of financial resources solely in the interests of members of credit unions.	─ Control is exercised by the members of credit cooperatives themselves, who are consumers of financial services of the latter; ─ implementation of financial control by a public organization in the form of an association (association, league) of credit cooperatives; ─ control by the state regulator over the observance by credit cooperatives of the established prudential standards; ─ the presence of a mandatory independent audit.

Summarizing the characteristics of financial methods listed in Table 6.2, it can be noted that their features are manifested in the formation and use of credit unions of funds of financial resources, financing of own costs, investing temporarily free funds.

Effective use of the specified in Table 6.2 financial methods ensures the timeliness of creation and use of funds of financial resources in the maximum possible amount, resulting in ensuring the financial stability of the credit cooperation system, sustainable financial functioning and growth of institutions of the system.

Supporting the financial activities of credit unions involves not only the direct provision of their financial resources, but also indirect financial support by creating favorable conditions for the operation of credit unions through the provision of training, methodological, consulting, auditing, information, investment, insurance services, etc. organizational forms other than cooperatives, but which are under their control and fit into the system of credit cooperation. Such organizational forms include arbitration courts, credit bureaus, training centers, auditing, consulting, insurance, collection companies and others that make up the service infrastructure of the credit union, as well as associations, leagues of credit unions – organizational infrastructure. In addition, with the help of service institutions, in particular, investment, mortgage companies, credit unions receive additional sources of financial resources, the diversification of their operations.

Based on the above, in our opinion, the financial mechanism of credit unions can be defined as a set of types, forms and methods of financial relations for the creation and use of funds of financial resources of system institutions to ensure stable operation of credit unions.

Features of the credit unions' financial mechanism are manifested in the methods, levers, tools of the financial mechanism in the process of attracting and using financial resources.

Proper understanding of the financial mechanism and financial methods will contribute to the stable operation of credit unions, and comprehensive and consistent implementation of all components of the financial mechanism in the financial activities of credit unions is the key to increasing the capitalization of the latter, minimizing risks, ensuring balance and quality of assets and liabilities.

Study of the concept and components of the credit unions' financial mechanism allow to deepen the understanding of the structure and state of its both internal and external financial relations. At the level of credit

unions, the financial mechanism should be aimed at increasing the capitalization of unions, including through financial support of union members. At the system level, determining the place and role of each link in the system of credit cooperation in the financial support of credit unions contributes to the financial strengthening of the latter.

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HOUSEHOLD INDEBTEDNESS AND MEASURES FOR DEFERRING PAYMENTS OF LOANS GRANTED TO CONSUMERS

Pandemic economic crisis has pointed out several ongoing problems in financial sector. One of these problems is a household indebtedness increasing in connection with lack of appropriate savings. Národná banka Slovenska as the macroprudential authority in Slovakia (Národná banka Slovenska is the central bank of the Slovak Republic) is monitoring the development of household indebtedness in connection with the stability of financial sector. Household indebtedness in Slovakia has doubled since 2010. In 2015 a sharp rise in household debt occurred caused by falling interest rates. The pace of debt growth measured by the increase in loans themselves, or by the ratio of loans to disposable income, was the highest in Central and Eastern Europe and the second-highest in the European Union (ref. 6, p. 6). One of the main problems of increase in household indebtedness is the low amount of their financial assets. Imbalances between household indebtedness and amount of their saving increase sensibility of household to potential future risk as increase in interest rates, income reduction, changes in mortgage market, increase in unemployment. The growth in household loans can contribute to a build-up of imbalances in financial sector. In order to prevent an undesirable rise in household indebtedness the National Council of the Slovak Republic has adopted several amendments to the Act No 129/2010 on consumer credits and on other credits and loans for consumers and in 2016 the Act No 90/2016 Coll. on housing loans was adopted. These legislative changes were aimed, among other things, at specifying the assessment of borrowers' ability to repay consumer credits or housing loans. In order to stabilise household indebtedness in correlation with household savings Národná banka Slovenska (hereinafter "NBS") has adopted the Decree of NBS No 10/2016 laying down detailed provisions on the assessment of borrowers'

ability to repay housing loans and the Decree of NBS No 10/2017 laying down detailed provisions on the assessment of borrowers' ability to repay consumer loans. Issuing of decrees is part of legislative competences of NBS. The authority of NBS to issue generally binding legislation is based on Article 56(2) of the Constitution of the Slovak Republic, according to which NBS may issue such legislation where authorised by statutory law to do so. Pertinent decrees laid down specifications concerning methods of calculating the indicator of a borrower's ability to repay a housing loan or a consumer loans. Decrees include

– obligation of creditor to take into account a potential increase in the interest rate on a housing loan/ consumer loan, specification what is meant by significantly increasing the total amount of a loan and by significantly exceeding the sum of existing loans' outstanding amounts;

– requirements for submitting evidence of a borrower's income and for the verification of information on a borrower's income;

– the maximum term of a housing/consumer loan;

– the maximum limit on the loan-to-value ratio for a housing loan;

– conditions for the valuation of residential immovable property collateral in case of housing loan.

The method of calculating the indicator of a borrower's ability to repay a housing/consumer loan is based on average of the borrower's net real income and the borrower's expenditure on basic necessities with financial reserve required by legislation. Indicators of the borrower's ability to repay a housing/consumer loan as well as other issues regulated by pertinent acts and decrees were amended several times in order to set up striker conditions for granting loans. One of the reasons for the tougher legislation was to force households to have financial buffers for difficult times as according to data from the 2017 wave of the Household Finance and Consumption Survey (HFCS),as many as 10 % of Slovak households did not have any financial buffers for difficult times (ref. 4, p. 21). All these legislative steps helped to slowly decrease the growth of household indebtedness (ref. 5).

MEASURES FOR DEFERRING PAYMENTS OF LOANS GRANTED TO CONSUMERS

Undoubtedly, the economic repercussions of the coronavirus pandemic had a serious impact on the household sector. The

legislation steps concerning tougher conditions for granting loan caused that loan growth has stopped decelerating but it remains excessive. After almost a decade as the highest in the EU, Slovakia's annual growth in loans to households was down to fourth highest by August 2019, with a historically low rate of 8%. In September 2019, however, the rate was no longer decelerating. (ref. 7, p. 25). The annual growth rate of total loans to households maintained a pace of just under 8 % from mid-2019 to March 2020. On this metric, Slovakia ranked fourth among EU countries from August 2019. Housing loans and consumer loans showed somewhat different trends (ref. 8, p. 31). Remaining problem of the Slovak financial sector is low saving ratio across much of the household sector, especially the most vulnerable households. Many households were already in a tight financial situation with low savings when the crisis erupted. In a survey conducted in late March 2020, as many as one-fifth of the respondents faced or expected to face serious financial difficulties. The number of households who, as a result of the pandemic, could struggle to meet even their basic living costs could increase by between 35 thousand and 48 thousand (i.e. by between 1.9 % and 2.6 %) (ref. 8, p. 8). In order to help households to build-up their financial buffers as much as they can, Slovakia implemented a wide moratorium on debt repayments to financial institutions.

Form of a loan instalments deferral is one of the most widespread measures to support businesses and households. According to the policy tracker provided by the International Monetary Fund, around two thirds of countries have introduced such a deferral. 44% of countries implemented this deferral into national legislation. The most frequently used span for the payment moratorium is 3, 6 or 9 months (ref. 2, p. 2).

Measures for deferring payments of loans granted to consumers were enacted by adoption of Act No 67/2020 on certain exceptional financial measures concerning the spread of the dangerous contagious human disease COVID-19. This Act enables households to deferrer loan repayments. The measures pursuant to this Act shall apply during the period from 12 March 2020, when the Government of the Slovak Republic declared an emergency concerning a Level II threat to public from the COVID-19 disease caused by the SARS-CoV-2 corona virus in the territory of the Slovak Republic, until the end of the calendar month in which the Government revokes the emergency situation (hereinafter 'the pandemic period') and until the expiry of the time

limit as specified in this Act, if later.

Measures for deferring payment of loans granted to consumer can be applied on both consumer loans and housing loans. In order to set up rules for deferring payments the Act operates with concept of debtor and creditor. Debtor means any consumer under the Slovak legislation against whom the creditor has a claim from a consumer agreement. It is important to notice that under the Act as a debtor is also considered a consumer against whom the creditor has a claim from a guaranty in respect of consumer agreement. Creditor means any person offering and providing loans to consumers under the Act No 129/2010 on consumer credits and on other credits and loans for consumers (hereinafter "Act No 129/2010") and the Act No 90/2016 Coll. on housing loans (hereinafter Act No 90/2016). It means that also leasing companies and non-banking financial institution or other creditors under the Act No 129/2010 are obliged to follow this Act. The fact whether a creditor is a bank or other creditor under the Act No 129/2010 determines length of the payment moratorium. The length of the payment moratorium is set up according the period stipulated in the deferral request. If a creditor is a bank or a foreign bank branch shall, at the request of a debtor, authorise the deferral of payments for the period, which shall not exceed nine months from the date of the next outstanding loan payment due after the date of submission of the deferral request. If a creditor is a subject offering and providing loans to consumers under the Act No 129/2010 shall, at the request of a debtor, authorise the deferral of payments for the period, which shall not exceed three months from the date of the next outstanding loan payment due after the date of submission of the deferral request. The Act enables a creditor to authorise the deferral of payments for a further period of up to three months if a debtor notifies a creditor of their interest in a further deferral of payments at the latest before the expiry of the initial deferral period. In case a creditor is a bank a debtor may request the deferral of payments of the same loan only once during the pandemic period.

Creditors are obliged to, at the request of a debtor, authorise the deferral of payments. The deferral request may be submitted in paper form or by means of distance communication. The deferral request shall include the elements as specified in the template set out in the Act. The Act also stipulates situations when creditor shall not authorise the deferral of payments. A creditor shall not authorise the deferral of payments if:

– the debtor is in arrears with the payment of loan for which the deferral is requested for more than 30 days prior to the date of submission of the deferral request;

– the debtor was in arrears with the payment of another loan granted by the same creditor amounting to at least € 100 for more than 30 days on 29 February 2020;

– the debtor was in default on the date of submission of the deferral request, pursuant to other legislation;

– the deferral request is not duly completed; or

– the deferral request does not include the elements as specified in the template.

If a creditor has not authorised a deferral of payments, a creditor is obliged to specify the reasons of denial.

From the legal point of view the authorisation of the deferral of payments shall be considered an amendment to the consumer agreement without the need to conclude an addendum to it. The deferral of payments means a deferral of payments of the loan principal and loan interest from a consumer agreement but it doesn't mean that the deferral period is an interest-free period. Between consequences of the deferral of payments belongs the obligation of a debtor to pay the interest for the deferral period. A creditor shall spread the unpaid interest for the deferral period over the remaining loan payments due at the end of the deferral period, unless otherwise agreed with a debtor. The total amount of the loan shall not be increased because of the deferral of payments.

It is important to outline that a creditor shall not:

– require additional credit guaranty;

– request payment of fees, reimbursement of costs or other remuneration in addition to the payment of interest for the deferral period;

– make deferral of payments subject to additional conditions.

A debtor may start repayment of the loan or its part also during the deferral period. The debtor submitting a deferral request shall notify the creditor of their intention to start repaying the loan or its part, whereupon the deferral of payments shall be terminated; in addition to the intention to start the repayment of the loan or its part during the deferral period.

By authorising the deferral of payments, the effects of the debtor's arrears shall not occur to the extent of the deferral. From practical and legal point of view it is important to mention effects of deferral of

payments on data in the electronic register of consumer credit data. The electronic register of consumer credit data is an effective tool in assessing the borrower's ability to repay the consumer or housing loan. Under the Slovak legislation creditors are obliged prior to the conclusion of the consumer credit agreement or its change consisting in increasing the loan, asses the borrower's ability to repay the loan, while taking into account particularly the period which the loan is provided for, amount of consumer/housing loan and borrower's income. Creditors may provide housing/consumer loans only to borrowers that comply with the borrower's debt service-to-income (DSTI) ratio. The DSTI ratio limit shall be calculated on the basis of the following factors:

– the borrower's income;

– the borrower's total expenditure on basic necessities;

– the amount of the pertinent loan instalments;

– the borrower's income-reducing financial obligations.

For calculating the amount of the borrower's income-reducing financial obligations are required relevant information on existing loan instalments. The accuracy and currency of information on existing loan instalments are verified against the information on the existing consumer and housing loans which is available in electronic register of consumer credit data at the time when the provision or topping-up of the consumer loan is being assessed. For the purpose of providing housing loans or consumer loans and assessing borrowers' ability to repay housing/consumer loans, creditors shall send information on housing loans to the electronic register of consumer credit data.

The register contains the following data (for example):

– the business name, registered office or place of business, and identification number of the creditor if assigned;

– the full name of the borrower, date of birth, personal identification number, permanent address;

– the date at which consumer credit was provided;

– the amount of consumer credit provided;

– the amount of each instalment and the frequency of instalments paid by the borrower under the consumer credit agreement.

The register also contains following information concerning borrower's ability to repay existing loan:

– the amount overdue and the number of instalments owed;

– the date at which the borrower's delay occurred;

– the date at which the borrower's delay ceased to exist;

– the length of delay, the number of days and months of borrower's delay;

– the number of instalments remaining and the amount due;

– the consumer credit maturity date;

– data on the collateral resulting from the consumer credit agreement;

– the date of terminating the borrower's obligations resulting from the consumer credit agreement;

– other data, if necessary to assess the borrower's ability to repay the consumer credit.

In light of aforesaid it is very important that a loan payment deferred shall not be considered as delay in payment of loan for the purposes of the electronic register of consumer credit data. Otherwise it would harm a borrower's credit history.

CONCLUSION

Slovakia belongs between countries with the fastest increase of household indebtedness for years preceding the crisis. Household indebtedness (in terms of debt-to-GDP) is among the highest compared to other Central and Eastern European countries (ref. 7, p. 31). One of the most outlined problems remains lack of financial buffers of households against unpredictable situations. Assuming a complete loss of income during the crisis and not taking into account government relief measures, 20 % of households have financial buffers sufficient for one month, and one half of households have financial buffers sufficient for six months at most (ref. 1, p. 1). Besides having low financial buffers for difficult times, many households went into the current crisis with a high debt-service-to-income ratio. Although the Decree of NBS set up new conditions for debt-service-to-income ratio, these legislative changes had not managed to have sufficient impact before the crisis came. Therefore, one of the most important policy measures from the financial stability perspective was the introduction of deferral of payments of loans granted to consumers. As of August 2020, 5.4 % of indebted households have opted for a postponement of their monthly instalments, representing more than 10% of the overall retail loan portfolio (ref. 2, p. 3). Negative aspect of payment moratorium is inability of NBS to receive appropriate information about the actual state of household credit risk. At the beginning of the crisis was a significant share of households strongly

hit by the crisis and the lockdown. The situation of most of those households has normalized over the summer. Mere 1% of indebted households does not expect an orderly repayment of their debt, representing also 1% of the retail loan portfolio (ref. 2, p. 15). The development of household indebtedness, however, will largely depend on the development of a pandemic economic crisis. The current situation has pointed out importance of the correct setting of legislation in the area of granting loans to households. In addition to legislative steps, one of the options for reducing household indebtedness is to support financial literacy and personal responsibility of households in drawing loans.

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COMPETITIVENESS OF THE MENA REGIONAL TOURIST MODEL, CURRENT CHALLENGES AND RESPONSE

Tourism is increasingly becoming one of the most important indicators of socio-economic development, both in certain regions and individual countries. At the same time, this type of activity is increasingly affecting certain key sectors of the economy, as its economic efficiency is impressive. However, the world is in a very difficult situation, the unpredictability of which threatens not only "weak" economies, but also fairly stable states. With the spread of Covid-19, the tourism industry is facing a crisis that may be the worst in the history of world economic development. The special tragedy of the situation is manifested in the fact that during the pandemic, tourism has already suffered the most. The reason for this is, in particular, restrictive measures imposed by states on the movement of citizens, quarantine, air travel bans, etc. According to UN WTO forecasts in 2020 the number of international tourists due to the coronavirus pandemic will be reduced by at least 20-30 %. This is catastrophic compared to 2019. According to preliminary forecasts of experts, the expected decline could lead to a decrease in revenues from international tourism by 300-450 billion dollars. This is almost a third of the 1.5 trillion dollars USA received in 2019. Given past market trends, this will mean a loss of 5 to 7 years of growth in the industry. At the same time, the UN WTO emphasizes the historical sustainability of tourism and the ability to create jobs after crises. The

importance of international cooperation and ensuring the search for optimal ways out of the crisis, which should be an important part of the recovery effort, is undeniable.

The experience of particularly “sustainable” tourist regions of the world and individual countries, demonstrating practical proposals for overcoming the crisis is particularly useful and necessary. The implementation of progressive strategies to respond to the challenges will reduce the negative impact of the pandemic on the economy of the tourism industry in the world.

As you know, within the framework of the World Economic Forum in the Swiss resort city of Davos, there is always a discussion of the most pressing issues of world development. Following the results of separate panels the report on competitiveness of the countries of the world, including, in the field of travel and tourism is issued. The economic situation in the past relatively favorable 2019 shows the trends developed by the world community. The proportions for the regional development of tourism and travel are confirmed by the strengthening of the positions of traditional tourist subregions, which are characterized by a consistently high level of competitiveness. That is why the top 10 TTCI member states remain unchanged. In particular, Spain is the best performer of the report for the third year in a row. At the same time, a slight decline in the United Kingdom’s competitiveness has led it to catch up with the United States. So, among the “dozens” of the best – from highest to lowest ranks: Spain, France, Germany, Japan, USA, UK, Australia, Italy, Canada and Switzerland. The regional results are extremely interesting. Thus, Europe and Eurasia remain the most competitive regions in the field of travel and tourism. The region is home to six of the top ten economies with consistently high scores. This is due to the formation of the best cultural resources in the world and leading infrastructure, especially – land, port. The region also has a stable favorable environment in the world and priorities in the field of specialized tourism. Despite its maturity, the region has also been the most developed since 2017. There has been a marked improvement in positions due to price competitiveness, air transport infrastructure and ICT readiness. Although Western, Southern and Northern Europe remain the region’s competitive core, the Balkans and Eastern Europe, Eurasia have shown the highest average growth in competitiveness scores.

Against the general world background, the priority development of the state – tourist destinations that have additional “growth points” for

tourism. These are countries that remain relatively safe in terms of tourist protection, have a uniquely comfortable infrastructure, and additional state reserves and support are derived from petrodollars.

This is primarily the MENA region, ie the Middle East and North Africa. They show the third significant improvement in the average TTCI since 2017. The United Arab Emirates (33rd place) is the only regional economy in the top 25 %, while Egypt is in 65th place. The more developed countries of the Arabian Gulf and Israel (57th place) have well stabilized the conditions for the creation of the environment and infrastructure projects. At the same time, North Africa is better able to cope with natural and cultural resources. In general, the region is very competitive in terms of prices, however, it has problems with security and terrorism, international openness. These are just some of the main reasons why the region has the lowest indicators under the "Natural and Cultural Resources" sub-index. However, the Middle East and North Africa (MENA) region has significantly improved its travel and tourism competitiveness since the last TTCI report. The region was able to slightly outpace the average global competitiveness growth. This is especially important given that travel and tourism in general account for a larger share of regional GDP. This is more than in any of the other four regions. The Middle East is also the only region where the cost of international visitors exceeds the cost of domestic visitors. However, despite improved competitiveness and significant dependence on the tourism industry, for overall economic growth, MENA continues to fall short of the lower overall average TTCI score [1]. MENA's below-average competitiveness is primarily the result of low scores on indicators: natural and cultural resources, as well as the level of international openness. The historical and religious heritage of the region, geographical features create the potential for significant natural and cultural tourism. Some individual countries are approaching, however, no country in the Middle East has the highest global level of natural resources. Only Egypt and Iran are rated higher in terms of cultural resource development. All this points to potential gaps in the marketing and perception of states by travelers. Eleven countries in the Middle East rank 40th among terrorist incidents, two of the world's 10 worst. In addition, the region suffers from geopolitical tensions, instability and conflict. Security issues also play an important role in why members of the region are among the most restrictive when it comes to international openness. Thus, in general, only Qatar, Oman and Morocco are making significant improvements. Thus,

travelers often face barriers when visiting the region, and the aviation and general technical assistance sectors are hampered by restrictions on bilateral aviation services and regional trade agreements (2). On the positive side, stability and security have begun to be restored throughout the region, somewhat reducing the fear of travel. Increasingly, the importance of travel and tourism has been recognized through broad regional improvements in their priorities. This applies to increased public funding. Marketing campaigns to attract or attract new visitors are more effective. Significantly increased environmental sustainability also has the potential to pay dividends on natural assets. In addition, prices have become more competitive among countries in the region, reinforcing MENA's greatest advantage over the global average. As one of the world's leading fossil fuel producers, the region includes the world's lowest fuel prices, with some governments offering subsidies. Moreover, many economies in the region offer visitors greater purchasing power. This is especially true of countries such as Egypt, Algeria, Iran and Tunisia. The experience gained in reducing taxes on tickets and airport fees, as well as lower hotel prices, mainly determine the competitiveness of the regions in recent years. Infrastructure has also improved significantly, with a particularly impressive increase in the number of airlines and capacity. Despite these successes, world-class infrastructure remains concentrated among the Arab states of the Persian Gulf. The Gulf countries have been able to use their wealth of natural resources, central geographical location and relative security to develop world-class infrastructure, defined by quality airports, ports, roads, tourism services and some of the world's leading airlines [3].

The Middle East subregion is currently the most competitive of the two subregions, nine points ahead of North Africa. Thanks to the Arab states of the Persian Gulf and Israel, the subregion is richer and more developed than the North African subregion. Thus, it is not surprising that the Middle East exceeds global and regional averages in terms of environmental and infrastructure characteristics, with a particularly high level of ICT and business readiness. Many Middle Eastern countries have relatively low scores on international openness and natural resources, which are the subregion's biggest shortcomings in global competition. One of the highest scores in the Middle East is price competitiveness, where some economies use their fossil fuel reserves to offer lower fuel prices. Compared to 2017, the subregion has improved on all parameters of tourism policy and provided

conditions, security, ICT readiness and most of the infrastructure, however, it has declined or stagnated in other important areas of development.

In 2019, eight of the eleven members of the subregion improved their performance compared to 2017. In particular, Oman showed the biggest improvement, rising eight places to 58th. The safest country has recorded the fastest improvement in the subregion in terms of its human resources and labor markets (103-65th place) and is one of the best in terms of international openness (116-97), environmental sustainability (109-57) and overall infrastructure (60th to 52nd). T&T's largest economy in the Middle East is Saudi Arabia (69th), which is higher than the subregion's average in most respects, but almost lower in terms of international openness (137th). Affected by ongoing conflicts and a protracted humanitarian crisis, Yemen (140th) ranks lower in the world index [1]. Saudi Arabia accounts for about one-fifth of the region's regional GDP, ranking eighth in the region and 69th in the world. The country is also the largest destination in the field of religious tourism. Many of the tourists were religious pilgrims. Saudi Arabia is based on the top of the tourist infrastructure (35th place), characterized by a significant improvement in hotel performance. The country's travel and tourism potential has also improved due to better air transport infrastructure (38-35), which ranks 3rd in the regions. However, there are several weaknesses in Saudi Arabia that hinder its ability to diversify and expand its industry. Chief among them is the country's lack of international openness (137th place), which includes some of the strictest visa requirements in the world (139th place). The reason is also in the high price competitiveness of the country (21st place), which is exacerbated by some of the world's lowest fuel prices (2nd place), hinders the growth of taxes on tickets and airport fees (from 26th to 52nd). This can potentially make flights more expensive [2, 4].

Tourism in the countries of South-West Asia and especially in the Middle East (Middle East and North Africa) is becoming a major factor in the diversification of their economies. The level of economic development of these countries (GDP per capita, the share of services in GDP); the state of the tourist environment and the demographic state of the population are the most important components, the indicators of which, according to the WEF, contribute to determining competitiveness in the field of tourism and travel. The state of the tourist environment, in turn, is determined by such characteristics as

the number of tourist arrivals, tourism revenues, indices of competitiveness of the regulatory framework, business environment and infrastructure, human, cultural and natural resources, the number of UNESCO monuments and more. An overview of the types of cluster destinations with the appropriate types of tourism strategies allows us to note the special place and role of rich oil-producing countries. Among them, the UAE and Kuwait differ in the intensity of tourist arrivals and income from tourism per 1,000 inhabitants. These are the countries with the most attractive places of both passive and active recreation in the world. In general, the indices of competitiveness in the development of tourism in the cluster of these states are high, as in the known island states. Consider in more detail the state of the competitive environment against the background of the global tourist space in the United Arab Emirates – a country that combines an Eastern fairy tale and the best standards and levels of European service. The UN estimates that the country's population is 9.157 million, almost half of whom are migrant workers from many Asian countries (India, Bangladesh, Pakistan). World-famous here are: the business center of the Middle East and one of the world's largest centers of international trade and tourism – Dubai; the richest emirate with high-class infrastructure, the city-park – Abu Dhabi; the cultural capital of the Arab world and the city of fairy tales Scheherazade with parks and gardens – Sharjah; the youngest emirate located on the coast of the Indian Ocean – Fujairah; provincial "Mecca" for divers – Khor Fakkah (Korfakan – the enclave of Sharjah in the Emirate of Fujairah); Ras Al Khaimah, the northernmost of the emirates, whose fame is enhanced by the picturesque beauty of the Hajar Mountains.

The UAE is one of the most economically developed countries in the Middle East and North Africa (MENA) region. Of the twelve countries in the UAE region is in second place after Qatar in terms of GDP per capita – 43.0 thousand dollars; GDP growth per capita, respectively, in fifth place – 6.6 %. In 2019 the country took a high place in the ranking of Ease of Doing Business: 11th place in the overall ranking among all countries (Ukraine – 71) and 1st place in the regional ranking, with a large gap. At the same time, as can be seen from the results of the WEF "The Travel and Tourism Competitiveness Report 2019", the country ranks 33rd among 140 countries in the world. The ranking of sub-indices includes, respectively: 13th place among the countries of the world in terms of infrastructure sub-index; at 17 positions on the sub-index of the state

of the environment; 73 positions in aspects of natural and cultural resources and tourism policy. Ratings for individual indicators (14) show that in the top "ten" countries of the world, the UAE is in particular in terms of: business environment – 9th place; security and protection system – 7th place; ICT readiness – 4th place; air transport infrastructure – 4th place. In other indicators, the state shows much more modest results: in terms of medical care and hygiene measures – in 66th place; in terms of human resources and working conditions – in 26th place; according to the level of international openness – 83rd place; by land and port infrastructure – in 31st place; in terms of environmental stability – in 41st place; on price competitiveness – by 64 m.; for the tourist infrastructure of the service – in 22nd place; for natural resources by 103 positions; by cultural resources and business travel – by 45 positions [1]. Thus, in view of the above, the state is characterized by a strong base for travel and tourism and claims the position of the world's leading tourist destination. Indicators of current statistics before the beginning of 2020 confirm the growing pace of the tourism industry in various emirates from 3 to 6.25 % annually. However, statistics in the UAE have some imperfections, as each emirate is responsible for counting visitors. Accordingly, the tourist can fly to Dubai airport and stay at the Abu Dhabi Hotel. In this case, it can be counted twice. However, available statistics in 2015 record the flow of tourists – 14.2 million visitors to the UAE. Already in 2019, the figure is growing significantly and amounts to 21.3 million revenues. The state is keeping pace, announcing by 2027 to increase the flow of tourists to 30 million visitors. Tourism has provided the UAE economy with more than 20 billion dollars in 2019 (about 72.6 billion dirhams). However, it should be noted that the main tourist destination is the Emirate of Dubai, whose GDP the tourism industry provides twice as much as oil revenues. Thus, of the total tourist flow of the UAE to Dubai accounts for about 73 %. In 2012, the flow of tourists to the Emirate amounted to 10 million people, in 2018 – 15.9 million people, and in 2019 – 16.7 million visitors. It is no coincidence that the emirate is the leader of the country's tourism, as it is the "shopping" capital of the world, which in 2018 surpassed the city of London in popularity. It was in Dubai that 334 global brands headed their stores.

The development of the emirate does not stop under any circumstances. For example, in 2019 the number of hotel rooms increased by 6 % compared to 2018 and is now 118,345 units; the

number of hotels increased by 2% and is 714 units. According to the Ministry of Tourism and Commercial Marketing of Dubai (Dubai Tourism), the emirate's ambitions were to bring the flow of tourists closer to 20 million visitors by 2020, but in today's reality this is not yet possible. The 2020 pandemic and quarantine conditions have also affected the UAE's successful tourism model. According to a study by Deep Knowledge Group, the United Arab Emirates was recognized as the safest country in the Arab region during the Covid-19 outbreak, however, the above prospects will not be fully realized, the economic results of the year will show how much it affected [4]. What experience does the state have and what can be borrowed from the methodology of actions to preserve the tourism industry and minimize real threats? Thus, at the beginning of the fight against the pandemic in the UAE, the National Sterility Program was promptly adopted. As early as March 17, the state will suspend the issuance of visas and cancel entry for citizens whose countries have concluded an agreement on visa-free regime. In three more days the decision on closing of borders is made; only "resident" visas remain active. Strict quarantine is imposed from March 22 and lasts until the end of April. Only on April 24, the day of the beginning of the celebration of Ramadan, the Supreme Committee for Crisis and Disaster Relief of the UAE announced the first stage of quarantine. By the end of May, the UAE had announced measures to gradually open its borders; On July 7, the country opened to foreign tourists. Necessary conditions have been introduced for travelers, including: passing a PCR test at Dubai Airport and entering personal data into a smartphone app, which is loaded upon arrival at the terminal. A number of initiatives have been launched to help hotels and cultural sites resume their work. The Department of Culture and Tourism has started cooperation with industry partners, as a result of which the Go Safe Certification Program has been developed. The goal of the program is to set hygiene standards in all hotels and tourist facilities, including shopping and entertainment centers, restaurants, museums, beaches, theme parks, etc. The UFC Fight Island tournament was held in Abu Dhabi from July 11 to 25, which was the first step towards the return of tourism to the UAE capital. The government, in turn, has offered to support the tourism business through various incentive schemes that provide 20 % rental benefits for restaurants, tourism and entertainment; also the suspension in 2020 of the payment of tourist and municipal fees for major tourist companies. The events of autumn 2020 confirm the

complication of the situation in the world and in the UAE, quarantine measures are intensifying again, however, the country remains accessible to foreign tourists. According to statistics, on 9.11.2020 the total number of infections reached 143,289 people, of whom 96.9 % recovered, which is a high figure. At the same time, mortality in the UAE is one of the lowest – 0.4 % (a total of 515 cases) [2]. According to information as of November 16, 2020, active vaccination is taking place in the country. The second wave of coronavirus, which occurred in the autumn, is gradually calming down, the situation is under control and improving every day. Dubai is currently active in tourism. At the same time, tourists on the eve of the trip must provide information about the state of health (fill out the form) and take out health insurance. Everyone who arrives in Dubai provides a certificate of PCR test for Covid-19 with a negative result and a period of not more than 96 hours. You also need to repeat the test at Dubai Airport. The cost of tours ranges from 640 dollars (8 days, for two) in November to 1600-2200 dollars for the New Year holidays. For example, Ramada Beach Hotel Ajman 4 *, Marjan Island Resort 5 *. Flights to Abu Dhabi are allowed from 14.10.2020, however, it makes no sense to fly, at least now, as upon arrival there is a 14-day quarantine (at your own expense and in a special hotel). From September 23, it is possible to fly to Sharjah via Istanbul on Pegasus Airlines flights. Airports are open in the rest of the emirates, but travel is currently impractical. The UAE's High Committee for Crisis and Disaster Management closely monitors the epidemiological situation, coordinating it with the government and business elites, creating a pragmatic basis for the development of further tourism policy of the state. This will help minimize the negative impact by responding in a timely manner to current challenges in the development of the tourism industry and the economy as a whole.

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UKRAINE'S PUBLIC FINANCE: DENERMINANTS, INSTITUTIONAL TRANSFROMATION AND DIRECTIONS IN DEVELOPMENT OF BUDGETARY REGULATION

A definition of the notion of "public finance" is absent in the Ukrainian legislation and there is no clear and established determination. However, as a rule, domestic scientists give such definition: "a sector of public finance covers transactions of government institutional units with financial objects. Public finance of Ukraine includes such institutional units: government units (ministries, establishments, legislative bodies, public special-purpose funds), public monetary credit institutions (National Bank of Ukraine and other depository institutions), public financial institutions (public insurance companies, investment companies, exchanges, other financial institutions), state-owned enterprises" [13].

However, in view of Ukraine's striving for European integration

[38], a practice of namely the European Union (EU) should be considered. Therefore, recently a notion of the "general government sector" (GGS) has spread in Ukraine [12]. In the European System of National and Regional Accounts (ESA 2010), the GG sector means a combination of such components: central government, state government, local government and social security funds [10, p. 44]. The International Monetary Fund also sets out, in the Government Finance Statistics Manual (GFSM 2014), the same components of the GG sector [17, p. 22].

However, despite European ambitions, there are no consolidated statements according to the guidelines of the EU and the International Monetary Fund (IMF) in Ukrainian practice and, as a consequence, there is no statistical database on the GG sector. However, there are statements, in an unexpended form, according to slightly obsolete methodology of the IMF's GFSM 1986 [35]. Its irrelevance is, of course, obvious.

Speaking of national and global development goals, it should be mentioned that in 2017, the "Sustainable Development Goals: Ukraine" National Report was developed in Ukraine by the Department of Economic Strategy and Macroeconomic Forecasting jointly with the United Nations [24]. One of the important goals in this report is Goal 8 "Decent Work and Economic Growth".

As considering public finance without reviewing a general macroeconomic situation in the country will be incomplete, we will dwell right on it. Therefore, the first and most important indicator in the mentioned goal is gross domestic product of the country (GDP) as well as inflation presented by a consumer price index (CPI) (Figure 6.2).

As seen in Figure 6.2, in the crisis periods for Ukraine such as the years 2008–2009 and 2014–2015, there has been observed a considerable growth in inflation and, a real decline in GDP, accordingly. So, in 2008–2009, inflation reached a level of 22.3 and 12.3 % [27], while GDP in 2015 declined by 15.1%. In crisis years 2014 and 2015, inflation was equal to 24.9 and 43.3 %, while a GDP real decline was 6.6 % in 2014 and 9.8 % in 2015 [37]. Currently, up to 2019, Ukraine shows a more or less stable trend towards GDP real growing at the level slightly higher than 3 %, and stable decline in the inflation level over the last four years – from 12.4 to 4.1 % [31].

After crisis years 2013–2015, the current status of the economy of Ukraine is characterized by moderate growth trends recovery, under which the average real growth of GGD varies at the level of nearly 3 %

of GDP per annum with inflation of 13.1 % [21]. Anticipated forecasted growth rates of GDP in Ukraine (on average for 2021–2024 +3.1% of GDP) will enable, already in 2022, to cover a giant amount of the GDP decline, which, in aggregate, reached in 16.3 % [2; 14]. Sustainable development of the economy in the forecasted periods will make it possible to lower the inflation level to a desired mark.

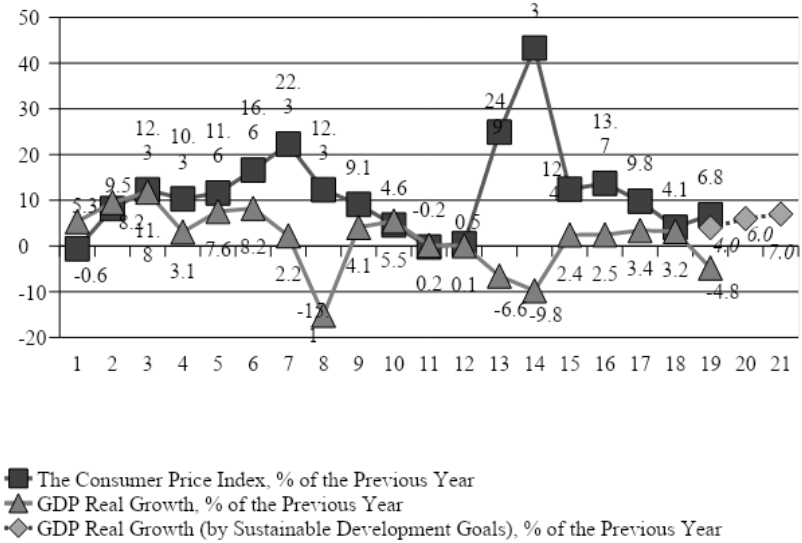

Figure 6.2 GDP and CPI Real Growth, % of Previous Year
Source: [5; 24; 32; 34]

However, updated forecasts show that in 2020, a GDP decline will be colossal, according to the IMF's data – up to -7.7 % [15–16], according to the government's date – up to -4.8 % [5]. This, in turn, shows that it is impossible to reach a 4.0 % real growth of GDP in 2020 according to SDGs [7; 24].

It is impossible to see acceleration of the growth rates of the economy without increasing in the level of employment and efficiency of labor of the population. Therefore, in developing the National SDGs Targets, labor productivity growth rate indicators were fixed (from 99.1 % in 2015 to 105.8 % in 2030) [20], an employment rate growth for the population aged 20–64 (from 64.4 % in 2015 to 70 % in 2030) and a reduction in the share of youth not in employment, education and professional training in the total number of those aged 15–24 (from 17.7

% in 2015 to 15.5 % in 2030) [24].

Now, an employment index (2018 data) remains at the level close to 2014–2015 (57.1 %), however, the productivity of labor as compared to crisis years 2014–2015 (when an average value was equal to 99.6 %) increased to 102.1 % in 2018, with the expected increase to the level of 103.7 % in 2021. [39].

Such a trend enables to expect that forecasted GDP growth rates in Ukraine will exceed GDP growth rates in EU member countries, where real growth rates are expected to slow down within 1.6 % of GDP in 2023 (compared with increasing by 2.2 % in 2018) [11]. The forecasted Ukraine's economy development is characteristic also for the European countries with the markets under formation where in 2019–2022, an average GPD growth is expected at the level of 2.5 % per annul with nearly 8% inflation [16].

In a forecasted period, acceleration of the rates of growth of public consumption expenses is expected in Ukraine's GDP due to decreasing in debt load and renewing support of the economy from the fiscal sector. An increase in the share of investments in GDP to the average level of 18.9 % of GDP in 2019–2022 (compared with 17.7 % of GDP in 2013–2018 [19]) has to do, first of all, with recovery of Luhansk and Donetsk regions as well as with improvement of business climate in Ukraine.

In the context of euro-integrational processes, it has been started to re-orient the country's export, which gradually refuses to export goods to the markets of the counties of the Commonwealth of Independent States (CIS) in favor of the EU member counties. In the period of adaptation of markets, an increase in the share of net export is expected to the level of -9.9 % of GDP in 2019–2022 (compared with an average actual indicator at the level of -7.7 % in 2016–2018).

Meanwhile, it should be understood that, in absolute terms, nominal GDP grows each year (Figure 6.3). As we see in Figure 6.3, a real decline in GDP in 2009 (-15.1 %) actually reduced its amount by nearly UAH 50 B. However, in 2015, declining by 9,8 % had, thus, no impact on a nominal growth. Of course, this is explained by respective inflation rates – 12.3 and 43.3 % (Figure 6.2), that is why it may be affirmed that the nominal GDP amount raised in 2015 due to inflation only.

Therefore, it makes sense to consider a macroeconomic situation in Ukraine from the viewpoint of real comparative data, namely, GDP at 2010 prices. As seen in Figure 6.2, the two crises of the GDP decline are clearly in evidence – in 2009 and 2015. It may also be noted that, in 2019, the economy actually reached the level of the 2009 crisis year

only. Against the background of today's global and national epidemiological problems (production drop, real GDP growth rates slowdown, unemployment rate growth etc.), a growth should be hardly expected in 2020.

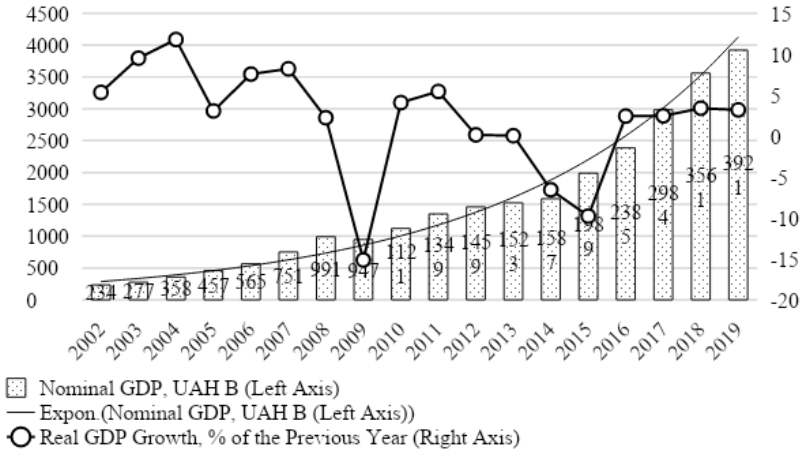

Figure 6.3 Nominal GDP Dynamics and Its Real Growth Rates
Source: [34]

Strategic planning is carried out in public finance in Ukraine: in 2017, the government adopted the Public Finance Management System Reform Strategy [4], which gained further development in the Strategic Action Plan for 2018–2021 [26]. It provides implementation of four strategic priorities: efficient budgeting; macroeconomic stability and fiscal risks reduction; support of economic growth; improvement of financial capacity of regions.

A remarkable risk to the balance of public finance has become increasing in nonproductive debt service expenditures: from nearly 1 % of GDP in 2005 to above 4 % of GDP in 2015–2016, with the concurrent reduction in the financing of investment and social expenditures. In a long-term period, it does not promote to improve the production (and, finally, fiscal) efficiency of the economy, and, in a short-term period it narrows the state's capacities to efficiently apply tax and budgetary policy as a tool of settlement of macroeconomic

imbalances and complicates the processes of consolidation of public finance (narrows room for a fiscal maneuver).

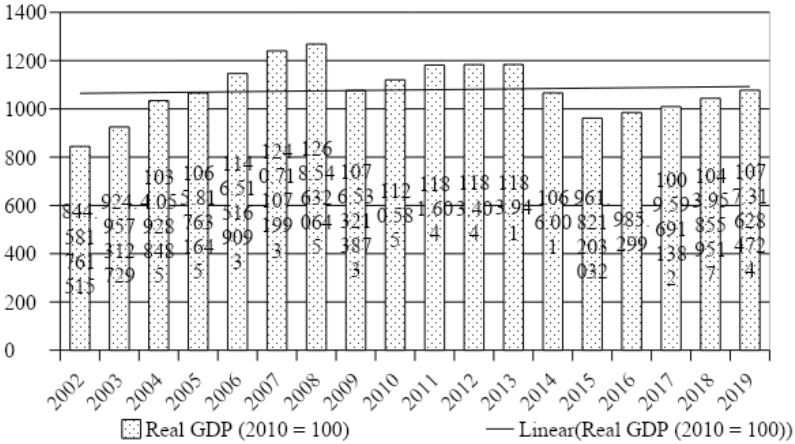

Figure 6.4 Real GDP Dynamics (2010 = 100)

Source: [34]

Tools to strengthen fiscal space are fiscal rules limiting the deficit, debt or individual transactions of the GG sector. A debt rule in Ukraine equals to 60 % of GDP (Figure 6.5), a deficit rule equals to 3 % of GDP, other types of rules as not applied in Ukraine.

The Treaty on the European Union, also known as the Treaty on Maastricht, was signed on 7 February 1992 between the members of the European Community and became effective on 1 November 1993 [6]. In 2007, after signing of the Treaty of Lisbon by the member states, the Treaty of the European Union was transformed into the Treaty on the Functioning of the European Union (TFEU).

Fiscal rules implemented in Ukraine comply with Protocol 12 [8] to the mentioned Treaty (TFEU) [9], in art. 126 of which is said that the member states shall avoid excessive government deficits. It is exactly this Protocol that specifies the reference values, which appear in art. 126, namely, 3 % of the ratio of the planned or actual budget deficit to GDP at market prices and 60 % of the ratio of the government debt to GDP at market prices [2].

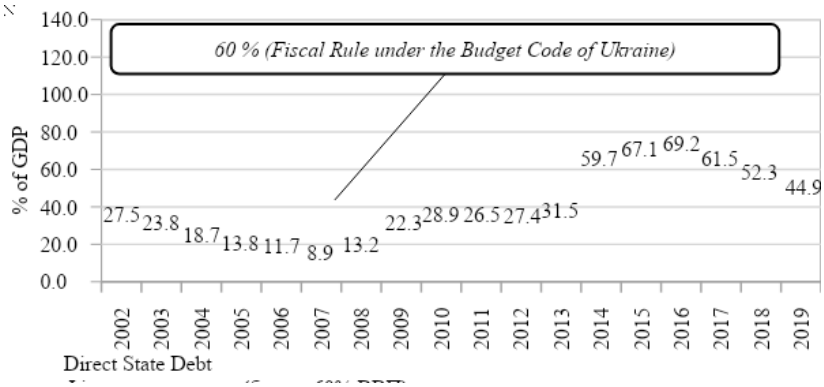

Figure 6.5 Ukraine's State Debt Level Dynamics

Source: [25]

The obligations gain rates in Ukraine exceeded both the GDP rates and budgetary revenues gain rates. In the period from 2006 to 2019, interest payments increased nearly 30-fold and in 2015 [22; 29], it has turned to be incapable to serve debt obligations to the full extent. As a consequence, 20 % of the government debt were restructured and 6 % were written off. A debt repayment load is actually extended to the period of 2021–2049 by the GDP warrant mechanism, which will force Ukraine to make additional payments to creditors to the extent that real GDP growth rates exceed 3 % per annum (if a real GDP growth in the relevant reporting years is higher than 3 % and lower than 4 %, then payments will equal to 15 % of the excess amount; if a real GDP growth will equal to 4 %, then the country must pay 40 % of the amount exceeding a 4-percent growth) [3; 18].

Stabilization of the economy in 2017–2018 in Ukraine made it possible to reduce a debt level to a limit mark of 60 % (in 2018, it reached 60.9 % of GDP [31; 39]. A similar Ukraine's debt level is characteristic of the EU countries such as Finland (58.9 % in 2018) [31; 39] or Germany (60.9 % in 2018) [31; 39], where a gradual reduction in the debt load is observed, starting with 2015.

The lowest debt level among the EU-28 countries was observed in 2018 in Estonia (8.4 %), while the largest amounts are characteristic of Portugal (nearly 122 %), Italy (132 %), and the absolute maximum is inherent to Greece (over 181 %) [1].

On the average, a characteristic feature for EU-28 in 2015–2018 has become economic recovery, which made it possible to slightly reduce a debt level to 80 % in 2018 (from the maximum value of 86.6 % in 2014).

According to data of the Ministry of Finance of Ukraine [25], the maximum level of the direct state debt of Ukraine is fixed in 2016 – 69.2 % of GDP (in 2013 – 31.5 % of GDP). Recently, a decline in this index is observed: to the level of 52.3 % of GDP at the end of 2018 and 49.6 % of GDP at the end of 2019. However, this reduction in the state debt is caused by real revaluation of the national currency only rather than by the improvement of its management efficiency or positive dynamics of the country's economic growth. Under the impact of receipt of funds from international investors, which were attracted by the ultra-high rates of domestic hryvnia government borrowings (at 18–20 % per annum), the rate of the national currency has temporarily stabilized (in the second half of 2019), provided that inflation generated by structural factors continues to grow, at least, by 10 % per annum. Due to said processes, the currency share of the Ukraine's state debt (nearly 64 % of the direct debt of the general total) translated into hryvnias, with each passing year, forms a lesser share of GDP, as nearly 90% of the growth of the latter falls on an inflation component and only 10 % – on a real growth (data for 2017–2018). So, a larger share of the country's debt is denominated in a foreign currency. Starting with 2015, the structure of the state direct debt remains stable [22]: the internal debt forms nearly 40 % of GDP, the external debt – 60 % of GDP, accordingly.

From 2010, almost the whole internal direct debt of Ukraine falls on public securities (IGBs), now available to the residents as well, and only a small share – on the loans. The external debt is represented predominantly by the internal government bonds (IGBs, above 30%) and loans from international financial organizations (nearly 20%). A share of loans from the governments of other states forms nearly 2.5 %, and commercial loans – 0–1 %.

So, the general status of debt security in Ukraine, at first sight, looks acceptable, since the level of the state debt is lower than 60 % of GDP and continues to decline. However, actually it is so: in addition to a mentioned risk associated with a currency component of the sovereign debt, there is another aspect – a share of Ukraine's public commitments is not accounted for as part of the state debt as according to international standards, they are not part of the components of the gross state debt.

Maintaining the amount of the state debt at the constant level or reducing its value to a safe level is an important criterion of the financial stability. The permanently growing state debt complicates, with time, raising new loans and results in an additional issue or default.

Now, proceeding from main trends of the country's economy, it is possible to analyze the most important link of public finance – the state budget (Figure 6.6).

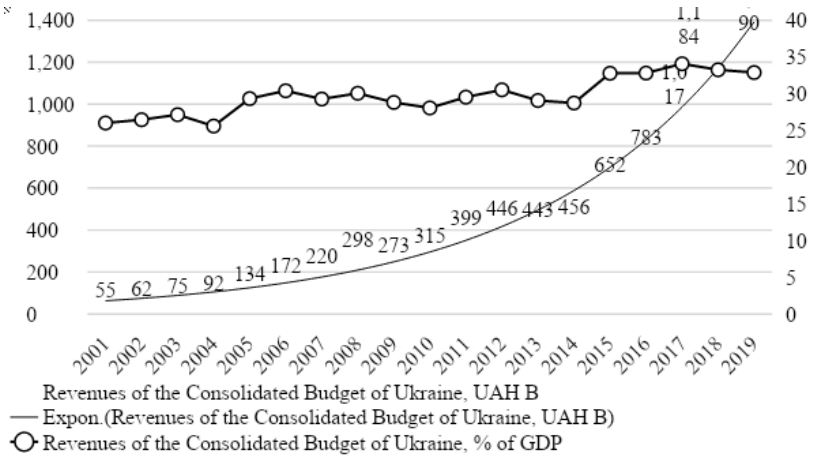

Figure 6.6 SBU's Revenues Trend

Source: [36]

As seen in Figure 6.6, the revenues of the consolidated budget of Ukraine (CBU) have a sustainable trend towards growing in absolute terms. However, in relative terms, the budget revenues vs the country's GDP stably do not exceed 25–35 % of nominal GDP. So, the lowest value of the revenues vs GDP was in 2004 – 25.6 %, and the highest value in 2017 – 34.1 %.

It should be noted that in the past (in 2004–2013), the revenues of the State Budget of Ukraine were considerably overstated [29] for the reason of incorrect classification of loans (borrowings), which were obtained, against Government's guarantees, by the State Agency of Automobile Roads of Ukraine (Urkavtodor) and reflected as part of "Own Receipts of Budgetary Institutions" instead of being qualified as part of transactions with financial assets/liabilities.

CBU's expenditures, just as revenues, have a clear trend towards growing in absolute terms (Figure 6.7), however, in the last years, a considerable growth in the expenditures has been observed (from 2015). However, although the CBU's expenditures slightly exceed the revenues in relative terms (i.e., there is a deficit), but also are in the range of 25–35 %. The lowest value at 25.8 % of GDP was observed in 2002, and in the last 4 years, there were the highest values – nearly 35% of GDP [23]. A nominal rate of expenditure growth during the last 5 years is similarly quite high, as the same of the revenues.

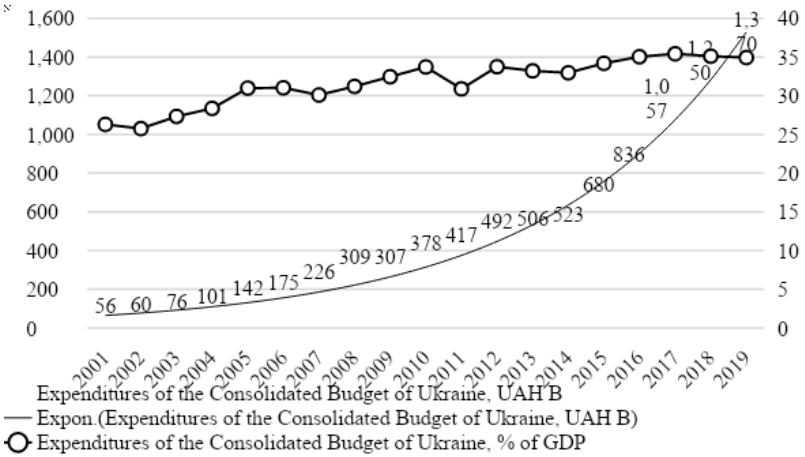

Figure 6.7 CBU's Expenditures Dynamics

Source: [36]

Besides, starting with 2009, public expenditures have not been directed for the investment purposes (95 % of expenditures were current) [27]. Until recently, a trend has lasted towards gaining in social expenditures, which, in 2013, reached 50 % of the current expenditures.

In the CBU, the lion's share usually refers to the revenues of the state budget (Figure 6.8).

Considering the said period, it may be affirmed that own revenues of local budgets decreased, from 2001 to 2019, in the structure of the SBU's revenues, from 32 to 23 %. Instead, a share of the revenues of the state budget increased from 68 to 77 %. Although, there remains a general 30:70 trend in the ratio of the revenues of local and state budgets.

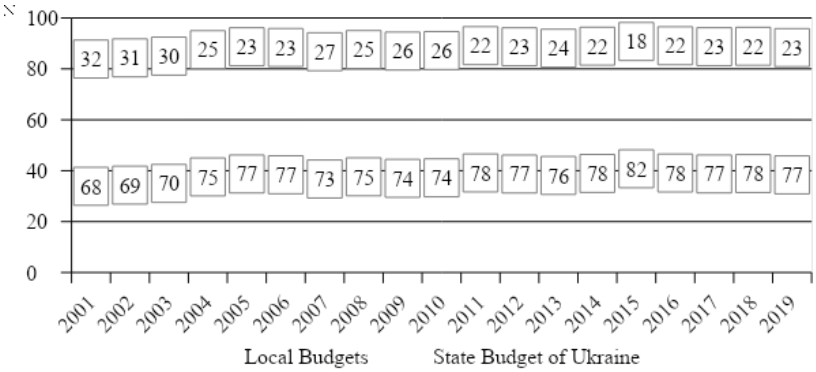

Figure 6.8 CBU's Revenues Structure Dynamics

Source: [36]

Let's consider the trends of changing in the revenues of the state budget in more detail (Figure 6.9). As with the CBU, the absolute value grows every year, and a considerable growth in 2015 is noticeable right in the state budget. However, in relative terms, vs GDP, the situation is slightly less stable than with the CBU's revenues, namely: a minor reduction in the revenues vs GDP has taken place in the last years, however, a general trend towards growing in the range of 20–25 % of GDP remains over the researched period. However, this is dictated by the growth of the revenues of the local budgets.

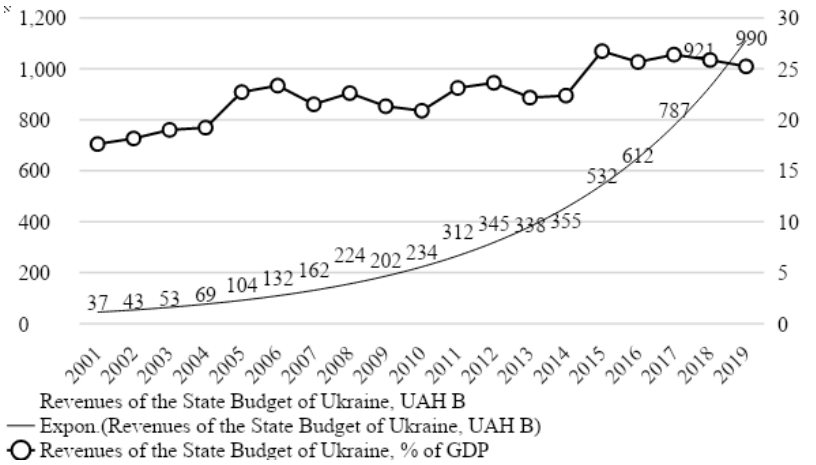

Figure 6.9 SBU's Revenues Dynamics

Source: [36]

Slightly different is the situation in the trend towards changing the expenditures of the state budget (Figure 6.10). Although, in absolute terms, the trends remain – over the whole researched period, a growth is observed from UAH 33 B in 2001 to UAH 813 B in 2019. In relative terms, over the whole researched period, the state budget expenditures were at the level of 15–20 % of GDP with a trend towards growing in the last years. The lowest value of 15.2 % of GDP was observed in 2002, the highest value (20.7 %) – in 2019.

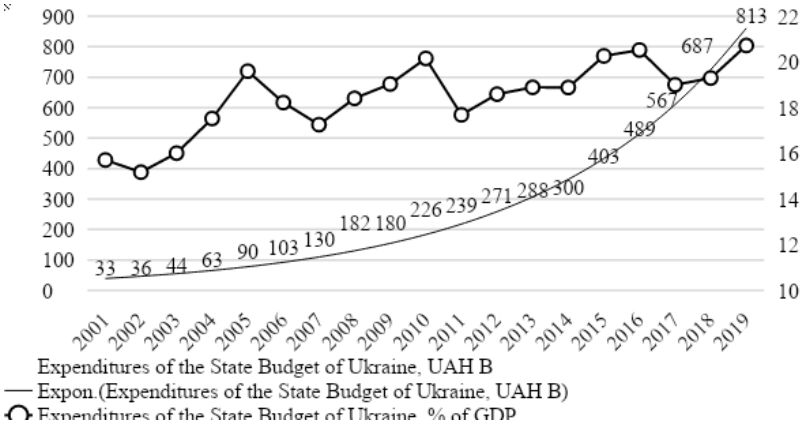

Figure 6.10 Dynamics of Expenditures of State Budget of Ukraine
Source: [36]

The total amount of the revenues of the local budges maintains a trend toward growing in absolute terms, while, in the percentage of GDP, it is stable (in the range of 13–15.5 %).

The main growth factor is increasing in the share of the official transfers in the revenues against the background of decreasing in the share of tax receipts of the local budgets (as a percentage of GDP).

However, for the last few years (2018–2019), a relative decline in the total revenues of the local budgets is observed (Figure 6.11).

It has to do with a general trend towards a slight growth in the revenues in 2018 and, especially, in 2019, against the background of moderate inflation as compared with the high nominal growth rates in the period of 2015–2017 and quite large inflation rates.

Own revenues of the local budgets (without transfers) (Figure 6.12) have, in the last years, a more stable trend towards growing than the total revenues of the local budgets.

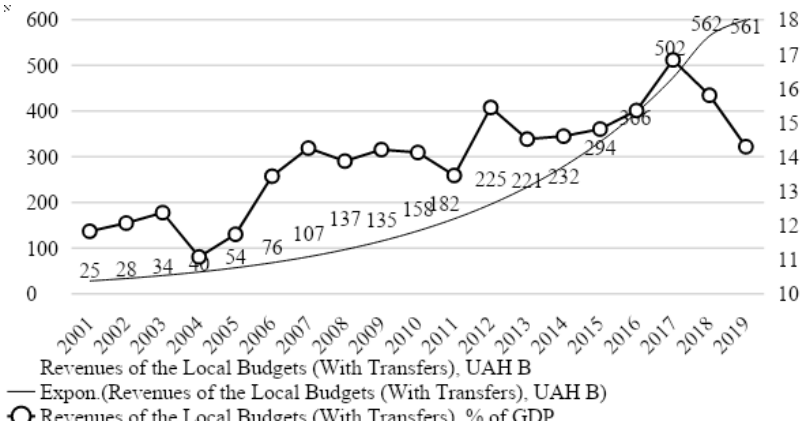

Figure 6.11 Local Budgets Revenues Dynamics (with Transfers)
Source: [36]

So, there was a slight decline in the total revenues, however, a growth in the revenues without transfers. This can be caused by the availability of the preliminary data on the 2019 results only. However, it is not worth to expect material changes.

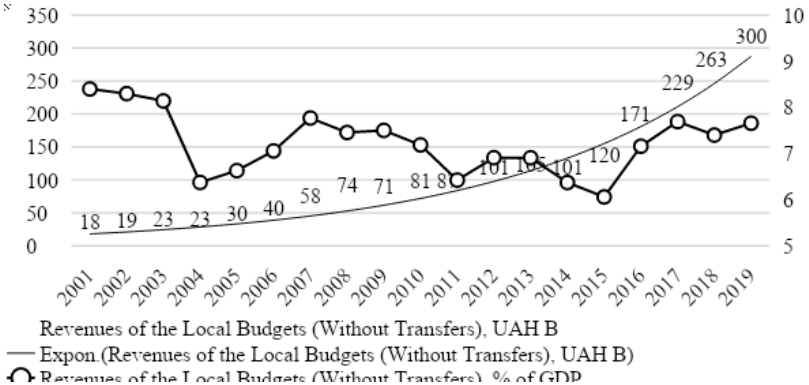

Figure 6.12 Local Budgets Transfers Dynamics (Without Transfers)
Source: [36]

The amount of the expenditures of the local budgets maintains a stable trend towards growing both in the absolute amount and vs GDP, however, such gain has to do with increasing in the amount of inter-budgetary transfers to the local budgets.

Although, in the last years (from 2018 to 2019), the same trend is observed as with the revenues – an inconsiderable decline in the absolute values and a stable drop in relative terms vs GDP from 16.4 to 14.2 % [20] from 2017 to 2019, accordingly. So, in 2017, the maximum value of the expenditures of the local budgets vs GDP (16.4 %) is fixed.

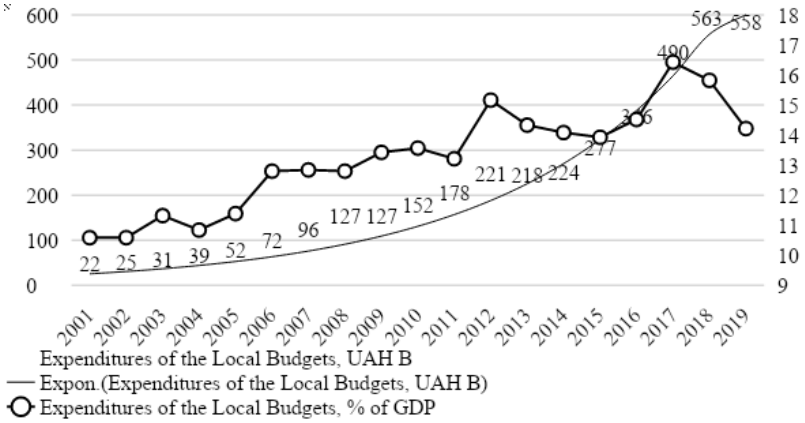

Figure 6.13 Dynamics of Expenditures of Local Budgets of Ukraine

Source: [36]

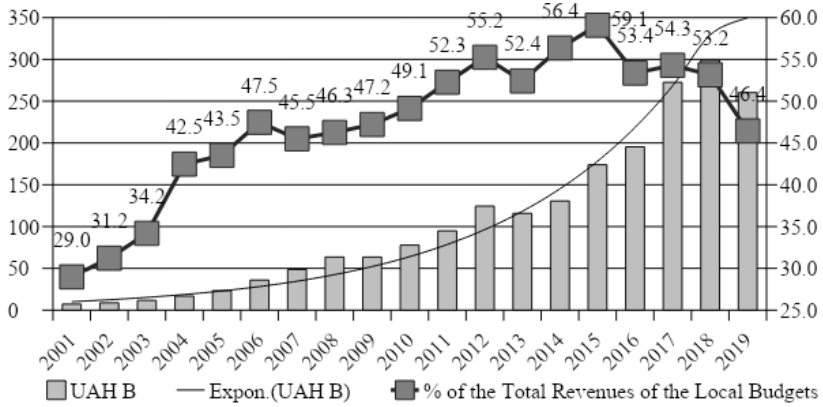

Figure 6.14 Dynamics of Amounts of Official Transfers from State Budgets to Local Budgets

Source: [36]

Dynamics of the total amount of the transfers maintains a stable trend towards growing, except for the last years. The main factor of annual variations is declining in the business activity and a worsening the economic situation that provokes narrowing a revenue base of the local budgets. In addition, a share of the official transfers of the overall revenues of the local budgets decreases as well, although, remains at the level of 50 %.

A considerable share of the revenues of both the state and local budgets falls on tax receipts (Figure 6.15). And, if for the local budgets, a trend at the level of 90 % is normal, then for the state budgets – slightly less, at the level of 80 %. At the same time, in Ukraine, a methodological problem of tax classification is popular as, over the researched period, various classifications of both revenues and expenditures were used because no internationally accepted standards like GFSM 2014 [17] have been implemented.

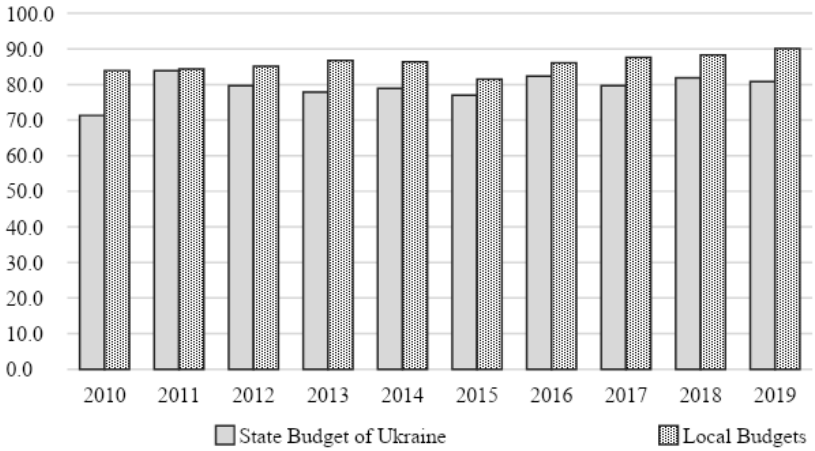

Figure 6.15 Dynamics of Share of Tax Receipts of Revenues of State Budget of Ukraine (SBU) and Local Budgets (LBs)

Source: [36]

Differences are also observed in the essence of taxes, for example, those taxes, which are separated in 2019, may have not been considered as taxes in 2002, and inversely. Therefore, the share of taxes within the structure of the revenues has actually increased approximately by 10% over the researched period.

The analysis of the role of indirect taxes in the tax system of Ukraine showed that, as of 2017, the VAT and excise tax formed 51.8 % of tax receipts to the SBU as compared to 48.9 % in 2010 [28]. Through them, there were redistributed 14.4 % of GDP that is larger than half of the amount that was redistributed through all tax receipts to the state treasury.

The highest fiscal efficiency, for many consecutive years now, is demonstrated by VAT. It exceeds the fiscal efficiency not only of the two direct taxes – on personal income and profit of enterprises taken together, but also an average indicator characterizing a share of VAT of GDP in the new EU member countries (8.48 % in 2015) developed EU countries with a similar level of the standard tax rate (Austria – 7.7 %, Great Britain and France – 6.9 %) [30].

In 2015, the VAT efficiency higher than in Ukraine was only in the EU countries such as Denmark, Sweden, Finland, Hungary and Croatia (9.4; 9.1; 9.1; 9.7 and 13 % of GDP, respectively [16; 39]), with the highest level of the standard tax rate in the EU (27 % in Hungary, 25 % in Denmark and Sweden and 24 % in Finland [16; 39]). An important reason for Ukraine's achievements in the field of collection of VAT is a limited application, as compared with the EU countries, of a preferential tax rate (for drugs only). Provided that the high VAT fiscal efficiency was achieved by Ukraine in the context of the standard tax rate lower than, on the average, in the EU countries (21.46 % in EU-28; 21.67 % in EU-15; 21.23 % in EU-13 [16; 39]).

The increasing fiscal efficiency is demonstrated by the excise tax. Its fiscal efficiency, among harmonized excisable goods in Ukraine, was, in 2015, below its average level in the new EU member countries (3.01 % vs 3.43 %) only, and in 2017 became equal to it.

In 2019, an aggregate growth of the cigarette excise rates (from 1 January and 1 July) was almost 30 %, with their further growth up to 2026 by 20 % per annum.

It is also important to research the structure of budget expenditures according to economic and functional classification (Tables 6.3–6.6).

It is worth noting that the overall growth in the expenditures or revenues does not say anything, if their structure is unknown, as the money can be spend for different purposes.

It is seen in Table 6.3 that all indicators have a trend towards growing in absolute terms. Current expenditures have considerably increased vs capital expenditures. So, the former were UAH 1216.4 B in 2019 that is nearly 2.5 higher than in 2014 – UAH 502.9 B, while the

latter grew, for the same period, from UAH 20.2 to 153.7 B, i.e., nearly 8-fold. However, the capital expenditures are considerably lower than the current expenditures.

Table 6.3

CBU's Expenditures Dynamics by Economic Classification, UAH B

Indicators	Researched years					
	2014	2015	2016	2017	2018	2019
CURRENT EXPENDITURES	502.9	633.1	762.7	957.1	1106.0	1216.4
Labor payment and payroll charges	162.5	185.6	221.7	263.7	326.1	389.3
Goods and services use	107.9	142.7	157.7	247.9	302.5	302.2
Debt liability service	52.5	88.5	97.7	111.6	116.9	120.8
Current transfers	37.2	27.2	25.4	46.7	52.9	83.3
Social security	133.8	170.4	253.1	280.0	300.7	312.3
Other current expenditures	9.0	18.7	7.3	7.1	6.9	8.4
CAPITAL EXPENDITURES	20.2	46.8	73.1	99.9	144.2	153.7
Fixed capital acquisition	14.6	35.8	52.0	60.3	85.9	90.2
Capital transfers	5.6	11.0	21.2	39.6	58.3	63.5
Total	523.1	679.9	835.8	1057.0	1250.2	1370.1

Source: [35–36]

Table 6.4

CBU's Expenditures Dynamics by Economic Classification, % of Total

Indicators	Researched years					
	2014	2015	2016	2017	2018	2019
CURRENT EXPENDITURES	96.1	93.1	91.3	90.5	88.5	88.8
Labor payment and payroll charges	31.1	273	26.5	24.9	26.1	28.4
Goods and services use	20.6	21.0	18.9	23.5	24.2	22.1
Debt liability service	10.0	13.0	11.7	10.6	9.4	8.8
Current transfers	7.1	4.0	3.0	4.4	4.2	6.1
Social security	25.6	25.1	30.3	26.5	24.1	22.8
Other current expenditures	1.7	2.8	0.9	0.7	0.6	0.6
CAPITAL EXPENDITURES	3.9	6.9	8.7	9.5	11.5	11.2
Fixed capital acquisition	2.8	5.3	6.2	5.7	6.9	6.6
Capital transfers	1.1	1.6	2.5	3.7	4.7	4.6
Total	100.0	100.0	100.0	100,0	100.0	100.0

Source: [35–36]

Current expenditures dominate in the expenditure structure by the economic classification, their share in 2019 was 88.8 %, they dominate across the whole researched period. Although, in 2014, capital expenditures account for even less than today. So, their share increased from 3.9 % in 2014 to 11.2 % in 2019. Wages (almost 30 % in 2019) have a considerable share of the current expenditures, further the use of goods and services and social security account for over 22 %. A trend to

declining in the tax liability structure seems positive, however, in absolute terms, all indicators have a trend towards growing.

Thus, in general, the expenditures rise, all indicators of the economic classification also have a trend towards growing. So, let's consider a distribution of the CBU by functions, which are performed by the state, i.e. by the functional budgetary classification (Tables 6.5–6.6).

Table 6.5

CBU's Expenditures Dynamics by Functional Classification, UAH B

Indicators	Researched years					
	2014	2015	2016	2017	2018	2019
National functions	76.8	117.6	134.3	166.3	191.5	203.1
Defense	27.4	52.0	59.4	74.4	97.0	106.6
Public order, security and judiciary	44.9	55.0	72.1	88.5	118.0	141.5
Economic activity	43.6	56.3	66.2	102.9	140.8	154.2
Environmental protection	3.5	5.5	6.3	7.3	8.2	9.7
Housing and public utilities	17.8	15.7	17.5	27.2	30.3	34.5
Healthcare	57.2	71.0	75.5	102.4	115.9	128.4
Spiritual and physical development	13.9	16.2	16.9	24.3	29.0	31.6
Education	100.1	114.2	129.4	177.9	210.0	238.8
Social protection and social security	138.0	176.3	258.3	285.8	309.4	321.8
Total	523.1	679.9	835.8	1,057.0	1,250.2	1,370.1

Source: [35–36]

Table 6.6

CBU's Expenditures Dynamics by Functional Classification, % of Total

Indicators	Researched years					
	2014	2015	2016	2017	2018	2019
National functions	14.7	17.3	16.1	15.7	15.3	14.8
Defense	5.2	7.7	7.1	7.0	7.8	7.8
Public order, security and judiciary	8.6	8.1	8.6	18.4	9.4	10.3
Economic activity	8.3	8.3	7.9	9.7	11.3	11.3
Environmental protection	0.7	0.8	0.7	0.7	0.7	0.7
Housing and public utilities	3.4	2.3	2.1	2.6	2.4	2.5
Healthcare	10.9	10.4	9.0	9.7	9.3	9.4
Spiritual and physical development	2.6	2.4	2.0	2.3	2.3	2.3
Education	19.1	16.8	15.5	16.8	16.8	17.4
Social protection and social security	26.4	25.9	30.9	27.0	24.7	23.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: [35–36]

There is also a trend towards growing in the expenditures for each function of the state in absolute terms here. However, some functions have a larger gain than the others, for example, the public order, security and judiciary as well as education.

Social security dominates in the expenditure structure by the functional classification (nearly 25 %). It had the largest share in 2016 (31 %). It is followed by education expenditures, which were 17.4 % in 2019, however, had a trend towards decreasing in the share within the structure from 19.1 % in 2014 to 23.5 % in 2019. National functions also have a considerable share of the total amount of expenditures, namely: vary at the level of 15–17 %, although, a trend to its decline is noticeable for the last 5 years – from 17.3 % in 2015 to 14.8 % in 2019.

Further, we will consider an absolute and relative expenditure variation by the economic (Table 6.7) and functional (Table 6.8) classifications.

Table 6.7

CBU's Expenditures Gain by Economic Classification

Indicator	Absolute variation, UAH B					Relative variation, % of previous year				
	2015	2016	2017	2018	2019	2015/ 2014	2016/ 2015	2017/ 2016	2018/ 2017	2019/ 2018
CURRENT EXPENDITURES	130.2	129.6	194.4	148.9	110.4	125.9	120.5	125.5	115.6	110.0
Labor payment and payroll charges	23.1	36.1	42.0	62.4	63.2	114.2	119.5	119.0	123.7	119.4
Goods and services use	34.7	15.0	90.3	54.5	-0.3	132.2	110.5	157.3	122.0	99.9
Debt liability service	36.0	9.2	13.9	5.3	3.8	168.6	110.4	114.2	104.8	103.3
Current transfers	-10.0	-1.9	21.4	6.1	30.4	73.1	932	184.3	113.1	157.6
Social security	36.6	82.7	27.0	20.7	11.6	127.3	148.5	110.7	107.4	103.9
Other current expenditures	9.8	-11.5	-0.2	-0.2	1.5	209.1	38,7	97.5	97.6	122.2
CAPITAL EXPENDITURES	26.6	26.4	26.8	44.3	9,5	231.5	156.4	136.6	144.3	106.6
Fixed capital acquisition	21.1	16.2	8.3	25.6	4,3	244.5	145.3	116.1	142.4	105.0
Capital transfers	5.4	10.2	18.4	18.7	5,2	197.3	192.6	187.0	147.3	109.0
Total	156.7	156.0	221.1	193.2	119,9	130.0	122.9	126.5	118.3	109.6

Source: [35–36]

As seen in Table 6.8, an absolute gain in the expenditures in 2019 was UAH 119.9 B, i.e., 9.6 %. In addition, almost all components had in 2019 a trend towards growing and obtained a positive gain, except the goods and services use, which decreased by UAH 0.3 B (equaled to 99.9

% of the previous year). Current expenditures increased, in total, by UAH 110.4 B (110 % of 2018). In this case, in absolute terms, the highest growth was by the wages (by UAH 63.2 B) and current transfers (by UAH 30.4 B).

Table 6.8

CBU's Expenditures Gain by Functional Classification

Indicator	Absolute variation, UAH B					Relative variation, % of previous year				
	2015	2016	2017	2018	2019	2015/ 2014	2016/ 2015	2017/ 2016	2018/ 2017	2019/ 2018
National functions	40.8	16.6	32.0	25.3	11.6	153.1	114.1	123.9	115.2	106.0
Defense	24.7	7.3	15.0	22.7	9.6	190.1	114.1	125.3	130.5	109.9
Public order, security and judiciary	10.1	17.1	16.4	29.5	23.4	122.5	131.1	122.8	133.4	119.9
Economic activity	12.6	9.9	36.7	37.9	13.5	128.9	117.7	155.4	136.8	109.6
Environmental protection	2.0	0.7	1.1	0.9	1.5	158.8	113.1	117.5	112.1	118.1
Housing and public utilities	-2.1	1.8	9.6	3.2	4.1	88.2	111.8	154.9	111.6	113.6
Healthcare	13.9	4.5	26.9	13.5	12.5	124.2	106.3	135.6	113.1	110.8
Spiritual and physical development	2.4	0.7	7.4	4.7	2.6	117.1	104.1	144.1	119.1	108.8
Education	14.1	15.2	48.5	32.1	28.7	114.1	113.3	137.5	118.1	113.7
Social protection and social security	38.3	82.0	27.4	23.6	12.4	127.8	146.5	110.6	108.3	104.0
Total	156.7	156.0	221.1	193.2	119.9	130.0	122.9	126.5	118.3	109.6

Source: [35–36]

These indicators had the highest nominal gain in 2019 as compared to 2018, namely: 119.4 and 157.6 %, respectively. The total expenditure gain by 9.6 % is provoked by increasing in current expenditures by 10 % due to their larger share, instead, the capital expenditures increased by 6.6 % only. In addition, this is the lowest growth of the capital expenditures for the researched period. Their highest growth was in 2015 – 231.5 % of the previous years as well as in 2016 – 156.4, in 2017 – 136.6 and in 2018 – 144.3 %. Against the background of such trends, growing by 6.6 % seems to be quite slight with inflation at 4.1 %.

However, it is noticeable that, over the researched period, the year of 2019 has the lowest expenditure growth rate – 9.6 %, when in 2015 it was 30 % (as stated, predominantly due to inflation).

As to a gain of the CBU's expenditures by the functional classification, the highest absolute gain is observed for the public order, security and judiciary – UAH 23.4 B as well as education – UAH 28.7. Although, in 2019, the expenditures for all functions had a slightly lower growth rate than in the last years. For example, the expenditures on education increased by 13.7 % as compared with 2018. However, in the previous years, the growth was more considerable.

To discover the dependence of the CBU's revenue growth rate on the tax receipt rates, a correlation and regression dependence, shown in Fig. 15 is built. This dependence is described by the equation $y = 0.6844x + 31.588$. The coefficient of determination equals to 80.86 % here. This is a quite stable dependence because tax receipts form a considerable part of the budgetary revenues. So, it is seen on the graph that in 2009 the growth rates of both indicators were the lowest, and in 2005 – the highest. The year 2019 almost matches with the levels of 2018 and 2010.

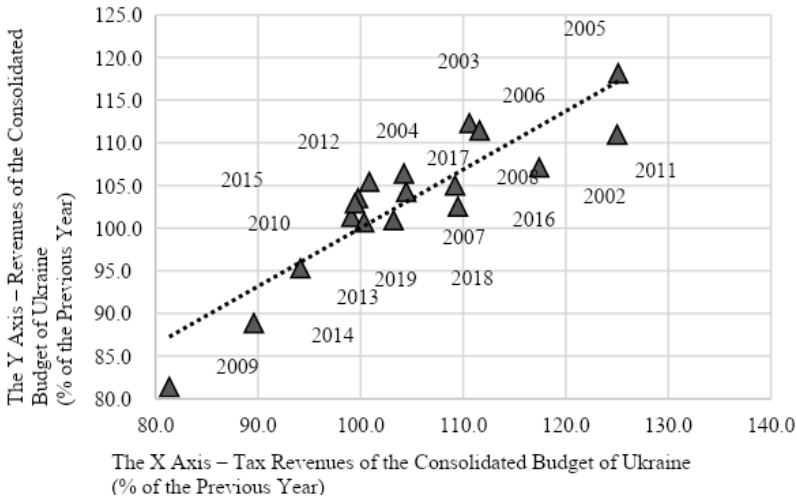

Figure 6.16 CBU's Revenues Growth Rate Dependence on Tax Receipt Rates

Source: [2; 34; 36]

A correlation and regression dependence is also built where the dependence of the CBU's revenue growth rate on the economic growth rates is shown (Figure 6.17). This dependence is described by the

equation $y = 0.9183x + 9.5034$. The coefficient of determination equals to 52.66 % here. This is a quite unstable dependence because the budgetary revenues grow at lower rates than GDP. So, it is seen on the graph that in 2009 the growth rates of both indicators were the lowest and in 2003 and 2004 – the highest. The year 2019 is almost at the level of 2018 and 2010.

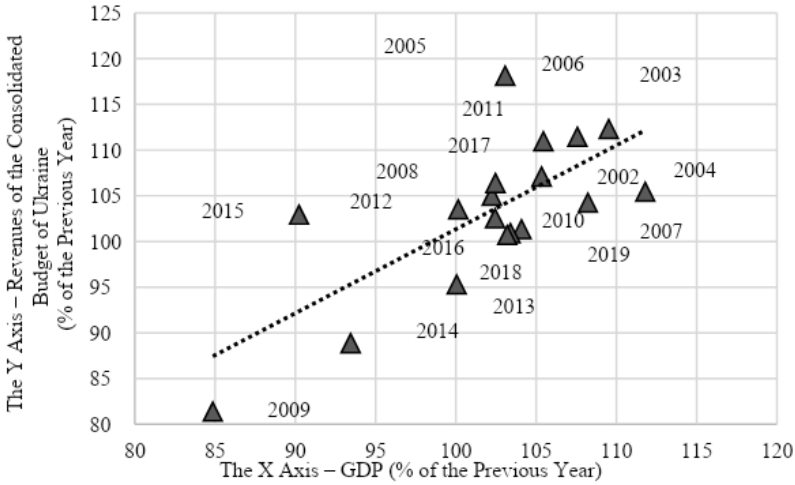

Figure 6.17 CBU's Revenues Growth Rate Dependence on GDP Growth Rates

Source: [2; 34; 36]

Further, a correlation and regression dependence is built, where the dependence of the CBU's expenditure growth rate on the economic growth rates is shown (Figure 6.18). This dependence is described by the equation $y = 0.9655x + 4.9153$. The coefficient of determination equals to 65.28 % here. I.e., the expenditures depend on the economic growth more than the revenues of the consolidated budget. In particular, it is seen on the graph that in 2009, the growth rates of both indicators were the lowest and in 2003 and 2004 – the highest. The year 2019 is almost at the level of 2018, what, in principle, is shown by conducted research.

Considering the agricultural and processing industry, it is worth to pay attention to the ratio of the gross value added created in agriculture, forestry and fishery as well as in the processing industry to the GDP

total amount (Figure 6.19).

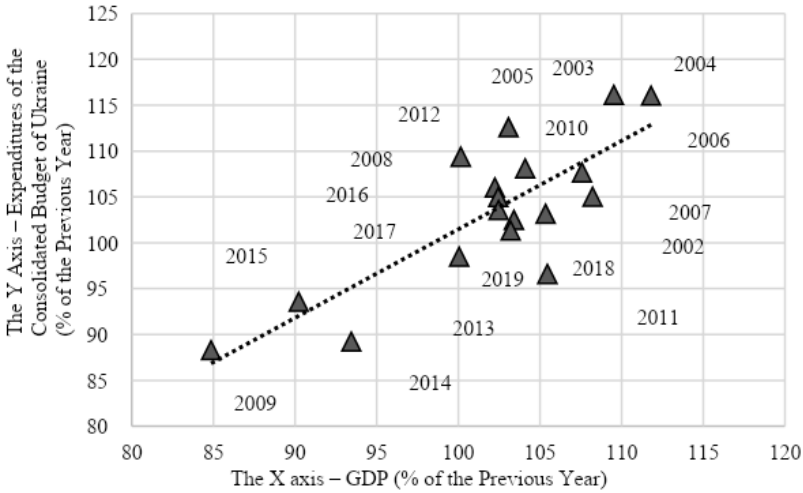

Figure 6.18 CBU's Expenditures Growth Rate Dependence on GDP Growth Rates

Source: [2; 34; 36]

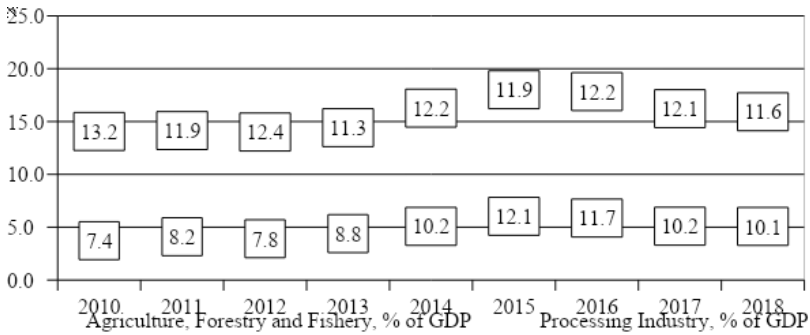

Figure 6.19 Agriculture, Forestry, Fishery and Processing Industry Gross Value Added Ratio, % of GDP

Source: [33]

In general, these two industries create, in aggregate, nearly 20 % of GDP, although, in the last years, a trend towards declining in this indicator is observed. The peak was observed in 2015 – 24 %: 11.9 %

fell on the processing industry and 12.1 % – on agriculture, forestry and fishery. This shows that crisis phenomena of 2014–2015 and the general economic decline have inconsiderably affected the gross value added structure. During the last four years, up to 2018, a drop in this indicator was observed to the level of 11.6 % in the processing industry and to 10.1 % in agriculture, forestry and fishery.

The authors built a correlation and regression model, which enabled to track the dependence of the growth rate of GVA of agriculture, forestry and fishery on the GDP growth rates (Figure 6.20). This dependence is described by the equation y = -0.6737x + 172.14. The coefficient off determination is only 25.79 % here that is evidence of the low dependence. In addition, the trend seems illogical – with increasing economic growth rates, the GVA created by agriculture decreases.

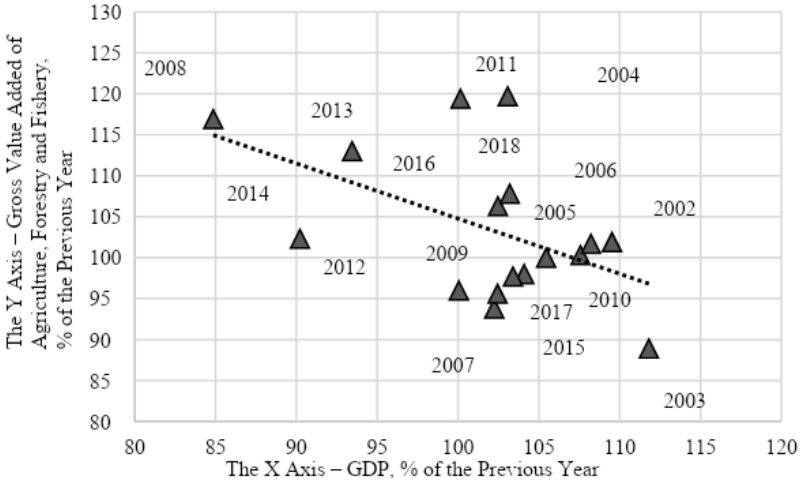

Figure 6.20 Agriculture, Forestry and Fishery GVA Growth Rate Dependence on GDP Growth Rate

Source: [33–34]

This can be dictated, for example, by the time gaps associated with the reflection of export-import operations. However, the last considered year – 2018 – is at the level of 2016.

Instead, another correlation and regression model built by the authors, reflecting the dependence of the growth rate of the GVA of the processing industry on the GDP growth rate, is shown in Figure 6.21.

This dependence is described by the equation $y = 0.731x + 26.268$. The coefficient of determination is equal to 24.22 % only here that is indicative of the low dependence, however the trend demonstrates that, with increasing economic growth rates, the gross value added created by the processing industry increases. As seen in Fig. 20, the year 2003 was characterized by the highest economic growth rates and, accordingly, by the increase in the gross value added of the processing industry, and the values of 2018 are quite close to the level of 2016.

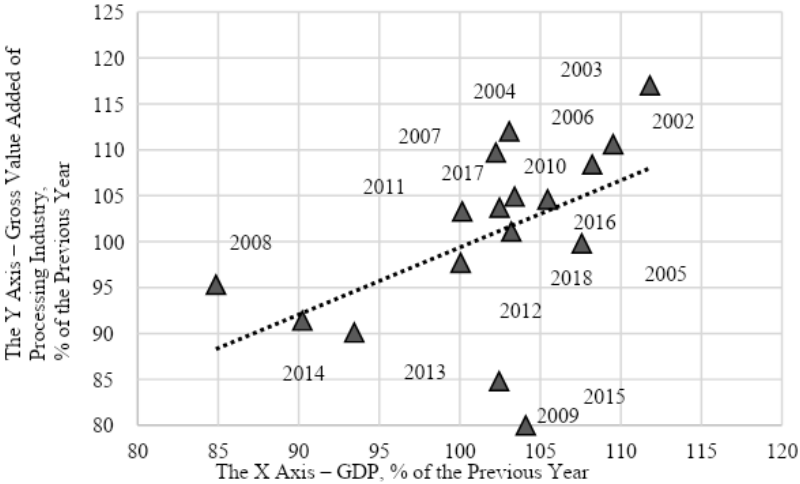

Figure 6.21 Processing Industry GVA Growth Rate Dependence on GDP Growth Rates

Source: [33–34]

Speaking of sustainable development of the state, one cannot but say of sustainability of public finance. Starting with 2017, the Government of Ukraine, sets out the strategic priorities for public finance in the Public Finance Management System Reform Strategy identifying macroeconomic stability and economic growth as the main priorities. One of the SDGs is just sustainable economic development as well.

However, after the 2013-2015 crisis years for Ukraine, the current status of the economy is characterized by quite moderate recovery of the growing trends, with which an average real GDP growth varies at the level of almost 3 % each year. However, in view of the global and national epidemiological problems, a considerable drop in the economy

in 2020 is forecasted – under various forecasts, from 4 to 7%.

Although, individual (not all) fiscal rules obligatory in the EU member countries are implemented in our country, and at the end of 2019 they were at the acceptable level, it is still quite early to speak of sustainability and stability of public finance.

Acceleration of the rates of growth of the economy cannot be imagined without increasing in the level of employment and efficiency of labor of the population. Therefore, in development of the "National Sustainable Development Goals Targets", the labor productivity growth rate indicators (from 99.1 % in 2015 to 105.8 % in 2030), the employment level growth for the population aged 20–64 (from 64.4 % in 2015 to 70 % in 2030) and the decline in the share of youth not in employment, education or professional training in the total number of those aged 15–24 (from 17.7 % in 2015 to 15.5 % y 2030), were fixed.

Conducted research enables to make conclusions that the revenues of the budgets of various levels have sustainable trends towards growing. On the one hand, it is a positive phenomenon, however, on the other hand, it means that a tax load increases together with them as well.

Correlation and regression dependences built by the authors show that the revenues of the budget are too much dependent on tax receipts (the coefficient of determination is above 80 %), the dependence of the revenues and expenditures on the economic growth of the country is not considerable. However, notwithstanding that the trend seems logical – the larger the GDP is, the higher the revenues and expenditures are, this is not indicative of its positive nature. As within the expenditures, the current expenditures dominate, which form almost 80–90 % of all expenditures, it remains for the capital expenditures a bit more then 10 %. Over the researched period, the debt service expenditures were also increased that, in turn, means that a large share of the expenditure gain is directed not for the country's development but for the payment of debts. Although, in 2019, a trend towards declining a relative debt level was observed, it is dictated by the fact that the larger share of the debt is denominated not in the national currency and, against the background of the speculative strengthening of the hryvnia, the currency debt seems considerably lower.

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"GREEN" ECONOMY AS A PROSPECTIVE MODEL OF UKRAINE DEVELOPMENT

The modern paradigm of sustainable development has led to the formation of a new type of economy – a "green" economy, which provides for economic growth through the introduction of green technologies. At the international level, a number of documents that require implementation into national legislation have been developed.

The aim of the research is to determine the key characteristics of a "green" economy and to assess the possibilities for its implementation in Ukraine. The analysis identified the key directions the "green" economy is moving to, the basic support tools, divided into the price and non-price ones. The price tools were described in detail with the allocation of financial instruments, on which specialists of international organizations on sustainable development focus.

The problems and possibilities of transition to a new, "green"

model of economic development are among the most urgent in the context of the growing anthropogenic load on the environment and the increase in the number of global challenges faced by civilization.

The concept of a “green” economy was introduced into scientific circulation in 1989 in a report prepared for the UK government [7]. During the global financial and economic crisis of 2008-2009, this concept was first used in the UN system. Thus, in 2009, the United Nations Environment Program published the “Green” Economy Report, which laid the foundation for its development. This topic was discussed in 2012 at the G20 Summit. There is no unambiguous interpretation of the “green” economy among scientists and practitioners. Thus, the United Nations Environment Protection Organization (UNEP) interprets “green” economy as an economic activity “that increases human well-being and ensures social justice, at the same time significantly reducing risks to the environment and impoverishment of nature.” Porfiriev B.N. defines the term as an economic activity, which, along with the modernization and increasing production efficiency, contributes to the improvement of life quality and living environment. Other researchers prove that “green” economy is a kind of economic development model “based on sustainable development, internalization of externalities, an integrated approach to the decision-making process, improvement of life quality in the conditions of resource conservation and resource efficiency using new technologies and innovations” [2, 4, 9].

The essence of “green” economy is revealed by many scientists. In general it is proposed to determine it as a new popular trend in economic, involving development and simultaneous preservation of both the civilization and biosphere, and as a way of doing business that aims to increase the well-being of people without damage and risks to the biosphere.

In general, a “green” economy is usually understood as an economy that ensures the more rational use of natural resources; the increase of natural capital; the use of alternative and renewable energy sources as a basis, and contribution to improving people's life quality [6].

“Green” economy aimed at the preservation of the natural environment as a prerequisite for the economic development and considering economic growth as a dependent component of the natural environment, has emerged as a new direction in economic science as a counterbalance to the traditional “brown” economy, characterized by the waste of natural resources, appeared quite recently – two decades

ago.

According to experts, in the short term, the “green” economy is able to provide GDP growth, an increase in per capita income and employment at the same or even higher rates than the traditional “brown” economy. In the medium and long term, the green economy will overtake the brown one and, moreover, will provide many more benefits in terms of environmental protection and reducing social inequality.

There is a system of directions in the “green” economy:

1. Introduction of renewable energy sources (RES). Note that, according to ecologists, more than half of all combustible minerals should remain unexplored in order to avoid significant climate change on the planet.

2. Improvement of the waste management system.

3. Improvement of the water resources management system.

4. Development of "clean" (steadfast, “green”) transport.

5. Organic farming in agriculture. It involves the refusal to use herbicides, pesticides, chemicals, as well as artificial fertilizers. Organic farming products do not contain genetically modified organisms, are processed without the use of E-ingredients, and are stored out of contact with unnatural substances.

6. Energy efficiency in housing and communal services. The presence of residential complexes equipped with ineffective heat-insulating structures and heat supply systems entails significant heat losses.

7. Conservation and effective management of ecosystems.

The concept of “green economy” includes ideas from many other directions in economic science and philosophy related to the problems of sustainable development. All the variety of human activities in the biosphere results in changes, the direction and extent of which is called an environmental crisis.

The main goal of the transition to a “green economy” is to improve life quality for the world population with the minimization of natural resources' depletion and preserving nature for future generations [3].

The economic sphere cannot be transformed without government influence. First, this happens through rule-making activities, and by means of organizational and financial participation. Transition to a “green” economy presupposes, primarily, the transition to environmental management with a high level of coordination between ministries and other public authorities at different levels, as well as

with other parties outside the structure of government management. Such a management system will help determine the right vector of political actions aimed at “green” growth including in the economic sphere.

The global trend of the “green economy” is to increase energy efficiency and reduce the natural intensity of products by reducing the cost of production and processing of raw materials.

The range of instruments offered for the transition to “green economy” include appropriate pricing, increased public investment in appropriate infrastructure, reforming environmental taxation systems, encouraging of green products manufacture, targeted government support for research and development, etc.

The issues of ecological balance stabilization in Ukraine are rather relevant since the anthropogenic and technogenic load on the environment in the country is 4–5 times higher than the corresponding indicators in the developed countries of the world. Technogenic impact in large agglomerations is especially dangerous. Structural deformations of the economy resulted in the preference for the development of resource and energy-intensive industries, the most environmentally hazardous industries.

The development of a “green” economy intersects with the development in the energy sector, especially when it concerns the development of alternative energy. Alternative energy includes any resources, which are not used as fuel, such as oil, gas, and other exhaustible resources.

It is important to assess and take into account a number of social, environmental, and economic factors, and, in our opinion, it is necessary to include consideration and assessment of these factors in the process of making managerial decisions at both the national level and globally [6].

The government policy concerning the country’s environmental development should contain a “green” growth strategy, including the integration of environmental and socio-economic development in the form of a “green” economy.

In the context of sustainable development, it is important to take into account the opportunities and challenges associated with the development strategy for the “green” economy.

An important element of the globalization process is modernization, and transition of the world economy to a new technological order, which, together with a qualitative renewal of the

technological base, an increase of production efficiency and competitiveness of the economy, allows improving the quality of life and living environment [8].

Ukraine has already adopted a number of strategic documents and laws that create the basis for environmental approaches. For example, on March 19, 2019, the Association of People's Deputies of Ukraine "Green Energy of Changes" provided the main theses of the concept of Ukraine development [3].

By 2030, this strategy is to lead Ukraine to a "green" and circular economy with steady organic agriculture. The strategy has become a kind of roadmap that will allow Ukraine to ensure stable "green" development. Priority directions of "green" economy in Ukraine by 2030, according to the presented concept, include innovative technologies; new workplaces; industrial modernization; energy decentralization or distributed generation; partial or complete self-sufficiency of the population with energy resources; creation of national "green" financial instruments; green tourism, etc. [3].

Renewable energy sources, energy efficiency, and "green" innovations are equally important for Ukraine. Taking into account the local self-government development, Ukrainian megacities can take upon themselves a certain part of the tasks connected with the domestic economy "greening" [10].

In the context of the global financial and economic crisis, the solution of environmental problems in Ukraine faded into insignificance: funding for environmental programs reduced, the implementation of projects and plans was postponed. Business entities, guided by the principle of profits maximization, saved on their activities' "greening" that resulted in the worsening of the ecological situation in the country. However, during the crisis, the state should have increased the share of spending on the environmental component in the package of anti-crisis measures [3, 10].

As in other countries of the EU's Eastern Partnership, the economy "greening" in Ukraine is taking place in the context of the ongoing transition to market conditions of management and related institutional changes.

There is a long and difficult transition from a society based on a centralized decision-making system, administrative pricing, low social standards, and equalization, which did not encourage the economy of cheap energy and raw materials, to a society where market competition stimulates all business entities to create larger added value at lower

costs in the conditions of the high cost of labor, resources, and population – to rational consumption and responsible behavior. In the context of a complex restructuring, the solution to the problems of a clean environment and resource conservation is often postponed until later [10].

Although the transition to a “green” economy is much more difficult than it seems, the processing and use of natural resources according to the principles of green development policies lie ahead. First, we need to abandon the technologies used in the “brown” (traditional) economy.

The transition to a “green” model of the economy is impossible without a significant amount of funds raised. Both commercial structures (investment funds, the banking sector, large companies) and the state can become the investors. Investments in the energy sector play an important role in reducing the burden on the environment [3].

“Green investments” are an important tool for the sustainable economic development of any country. After all, their absence can deepen the difficult ecological situation in the country. Despite the gradual increase in the environmental tax for environmental pollution, financial incentives for polluters for the reduction of emissions are insufficient. It is more profitable for thermal generation companies to pay taxes than to invest in environmental protection measures. Ukraine should urgently introduce a national emission accounting system for removals and absorption of greenhouse gases.

Prospects for “green” development of industries and the economy of Ukraine at large considerably associate with progress in the energy sector, primarily with the development of alternative energy. In a “green” economy, the public drives income, employment growth, and private investments that reduce carbon emissions and pollution, increase energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services.

Analysis of the ways for “greening” three main sectors of the economy confirms the need to develop a comprehensive state strategy for the transition to a “green economy”. Today in Ukraine, only some of its aspects are being developed [3, 10].

Nevertheless, Ukraine has a huge resource potential for the transition to the “green” economy.

To accelerate the Ukrainian economy “greening”, the following measures are proposed [3, 10]:

– priority should be given to educational projects aimed at

informing the population about the main causes of environmental deterioration;

– it is necessary to work on the quality of public administration of the environment condition (it seems expedient to create real economic incentives);

– to encourage the production of environmentally friendly products and use of sustainable production methods through a “green” public procurement policy;

– to increase public investment into “green” infrastructure (including public transport, construction of energy-efficient buildings) in parallel with the financing of technical re-equipment of traditional industries.

Implementation of the proposed measures will not only increase the competitiveness of the country’s economy but also will contribute to the diversification and growth of products’ exports with a high share of processing natural resources and increase the competitiveness of companies in foreign markets.

Having chosen the European path for development, Ukraine has actualized all the issues of the domestic economy “greening” [3, 10]. Taking into account the development of local self-government, Ukrainian megalopolises can take upon themselves a certain part of the tasks on the domestic economy “greening”. Moreover, foreign practice is replete with examples of “green” cities’ development [5].

To meet European environmental standards, Ukraine should increase the number of enterprises processing secondary raw materials.

The main obstacles to the development of a “green” economy in Ukraine are insufficient business awareness of available green technologies, paternalistic expectations regarding such innovations – hopes for the initiative from the government, investors, international organizations, etc., insufficient strategic planning of investments in “green” economy, low motivation for entrepreneurs to “green” their business [3].

At the same time, there are no mechanisms stimulating businesses to introduce innovations into a “green” economy. For example, the law on sorting household waste has been de jure for over a year, but so far, there are no conditions to make the collection of recyclable materials a profitable business. The problem is the lack of specialists dealing with “green” economy issues in various ministries and departments.

The possibility of a transition to a green economy model should be

viewed from a comparative, dynamic and complex perspective, based on the experience of developed countries that have switched to a sustainable green growth model.

Due to the transition to the “green” economy, there is a need to improve the collection of statistical information concerning the condition of the environment for its coordination with economic and social statistics. It includes a collection of additional statistical information on the consumption of raw materials, water, and energy at the input and output of the production process and emissions of harmful substances by type of economic activity. Collection of statistical information on environmental innovations leading to the decrease in greenhouse gas emissions, or to the increase in the resource efficiency of the production process, available natural resources, supply and demand for eco-friendly goods and services, as well as environmental taxes and subsidies.

In the context of the transition to the market economy, an economic mechanism for managing environmental protection should be envisaged based on strict environmental restrictions on territories and ecosystems, creation of a special payment system for environmental management, consideration of environmental factors in taxation, and streamlining of funding sources for measures for the protection, reproduction, and conservation of natural resources.

The development of a “green” economy is impossible without the activation of state management instruments. They may include support in the form of subsidies and reduced tax rates, tax holidays for new “green” enterprises, material support of priority industries in the form of equity participation in the authorized capital. Control over the activities of “green” companies at all stages of production, emissions trading, replacement of deteriorated equipment, and creation of programs for the disposal and recycling of wastes, allocation of a larger number of governmental educational grants in the field of environmentally friendly technologies can also be added [3, 10].

Achieving sustainable development of the region is possible only in line with the innovation paradigm, which allows maintaining the level of competitiveness of the territory necessary in terms of creating favorable conditions for the life of society and at the same time reducing the risks of depletion of natural resources and destruction of the environment through the development of new “green” technologies and increasing resilience and environmental sustainability.

“Green” innovation can reduce costs by lowering material and

energy costs, and improve the efficiency and competitiveness of manufacturers. However, it is the prospect of cost optimization that most often stimulates investment in green innovation. By adopting the most advanced green innovations, there will be real cost savings and increased productivity.

The transition to a green economy will create so many new jobs places that over time this will compensate for the decline in employment in the brown economy. This is especially true for agriculture and housing and communal services, energy, forestry and transport. However, in sectors where natural capital is largely depleted, such as fisheries, there will be a temporary decline in employment and income, which will require retraining programs for the workforce.

"Green" economy is based on alternative sources of energy and fuel, clean production technology, clean technologies in agriculture, "green construction", as well as programs for air, water, and soil purification from pollution, recycling, and disposal of wastes, etc. The directions for the implementation of a "green" economy in Ukraine highlight rational use of natural resource potential, diversification of energy supply sources, environmental protection, production of organic agricultural products, modernization of housing and communal services, and formation of the new environmental behavior of the population. Many scientists are researching this topic, developing new concepts. "Green" economy can become a source for the development of Ukraine. Therefore, the prospects for creating a "green" economy in Ukraine are necessary and achievable.

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CONCLUSION

In the context of new changes and challenges facing society caused by the COVID-19 pandemic the most important factor in ensuring the sustainable functioning of economic entities is the formation and improvement of crisis management strategies and models. Ensuring the competitiveness and further functioning of economic entities largely depends on the available resource potential, its optimization, diversification and implementation innovation. Due to the changes in the market environment caused by the COVID-19 pandemic the theoretical foundations and methodology of crisis management need to improved and substantially supplemented. The problem is partially solved through the introduction of modern information technologies in the management of economic systems and digitalization, the introduction of resource-saving technologies, optimization of operating costs, the introduction of green economy and socialization of economic processes. Digitization has become an effective tool for optimizing economic activity, an element of growth strategies in the market and a model for expanding the volume of activity, which has formed a new concept the management of economic entities.

The results of the author's research in the scientific monograph are devoted to solving problems of formation and improvement of strategies and models of crisis management and mechanisms of their implementation in modern global changes and challenges to society based on concept the management of economic entities.

An important component of the scientific monograph is the formation of new and improvement of existing strategies for managing the competitiveness of economic entities, socio-economic processes at the regional and national levels, approaches to implementing a supply chain logistics management system, clustering financial support for dual education, employment in a pandemic, the consequences of pandemic for certain sectors of the economy and ways to overcome the crisis.

The results of the research presented in the scientific monograph reflect the theoretical and practical aspects of the implementation of crisis management mechanisms of socio-economic processes in the context of globalization, optimizing the resource potential of economic entities in the future and the possibility of its development through digitalization, implementation saving technologies and innovations.

It is established that the effective functioning of the methodology for assessing crisis phenomena and threats is an important element of strategic planning and ensuring national stability. Such systems are called national because they operate at the state level, cover processes related to the security of the state, society, economics entities and every citizen, and are based on extensive interagency cooperation and collaboration.

Overcoming the crisis of socio-economic and political processes within the global changes provoked by the COVID-19 pandemic, and creating conditions for sustainable functioning of economic entities need to improve and implement a balanced institutional policy aimed at overcoming negative phenomena in all areas activity of the countries, ensuring optimal use of resources on this basis. An important place belongs to the rational use of available resources and information environment, which demonstrates the real state of problems and allows to identify mechanisms of market self-regulation and state regulation and management of economic systems, to develop scenarios way out of the pandemic crisis based on a systems approach.

Application of modern methods and technologies for assessing crisis phenomena and threats, and also modeling of crisis situations and develop of scenario forecasts allow to increase the reliability of the obtained results, as well as to form a broad one evidence base for further analysis. The developed typologies, multicriteria matrices, catalogs of models and scenario forecasts of the COVID-19 pandemic are necessary for further definition of protocols of coordinated actions for response to threats of various character and origin, and also planning of the corresponding actions. The crisis situation caused by the spread of COVID-19 in the world raises the issue of building national stability, the formation of an appropriate legal framework and organizational system, the development of its individual components, including crisis management.

Organizationally the national systems of assessment crisis and threat are well-organized formats of broad interagency interaction and cooperation with non-governmental actors. Also, these systems find the optimal balance between government and science.

There are methodological shortcomings in assessing crisis phenomena and threats based on past experience events lead to decrease in the reliability of forecasts due to impossibility reflecting in them new challenges that have not taken place before. This was confirmed in case of spread in 2020 of the disease COVID-19. The

corresponding crisis situation revealed a number of problems in the field of crisis management and readiness to respond to new threats. With this in mind, it is becoming increasingly important to develop universal protocols for concerted action that respond to a typical threat.

Identification of such types and categories of threats, modeling of crisis situations and formation of appropriate data catalogs is one of the main tasks it has implement a national system of assessment risk and threat. In this context, considerable attention is paid to the concept of regional sustainability.

Practical recommendations for the assessment of crisis phenomena and threats have been developed and proposed, in particular, in-depth analysis of the consequences of the biggest threats, develop of scenario forecasts, modeling of crisis situations; assessment of the capabilities needed to respond to threats at all stages deployment of the crisis situation; dissemination of evaluation results, visualization; monitoring and reassessment of threats based on experience.

In general, the proposed concept of crisis management of economic entities is aimed at improving strategic planning, increasing the level of readiness of the state and society to respond to a wide range of threats and strengthening national resilience.

Promising directions for overcoming the pandemic economic crisis in the future, resulting from research in the scientific monograph, are the introduction of virtual organization as a promising form of doing business in uncertainty, competency-based approach to human capitalization, digitization of administrative services for business, development of digital marketing, green economy, etc.

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Financial management and marketing
Insurance, security and finance
Accounting, audit and finance
International business and finance
Business economics, entrepreneurship and innovation
IT-analysis and business strategies
Digital business, marketing and sales
Business psychology and human resources

Form of study – full-time, distance. Language – Russian, Bulgarian, English. Term of study – 4 years. Tuition fee – 750 EUR / year.

Master degree:
Finance
Financial management and marketing
Accounting, audit and corporate analysis
Insurance business and risk management
Pension and health insurance
Entrepreneurship, innovation and finance
Sales, business finance and communications
Business and digital transformation – blockchain innovation
Digital marketing and Internet-analysis
Human resource management and leadership behavior

Form of study – full-time, distance. Language – Russian, Bulgarian, English. Term of study – 1,5 years. Tuition fee – 1000 EUR / year.

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