The WSB University in Poznan
Research Journal
2021, Vol. 92, No. 1

Economic and financial aspects of Ukraine's regional development in the context of European integration

Zeszyty Naukowe
Wyższej Szkoły Bankowej w Poznaniu
2021, t. 92, nr 1

Ekonomiczno-finansowe aspekty rozwoju regionalnego Ukrainy w kontekście integracji europejskiej

redakcja naukowa
Wiesława Caputa

Wydawnictwo
Wyższej Szkoły Bankowej w Poznaniu

Poznań 2021

The WSB University in Poznan
Research Journal
2021, Vol. 92, No. 1

Economic and financial aspects of Ukraine's regional development in the context of European integration

edited by

Wiesława Caputa

The WSB University in Poznan Press

Poznan 2021

Czasopismo umieszczone w bazach Index Copernicus, BazEkon.
Czasopismo recenzowane według standardów Ministerstwa Nauki i Szkolnictwa Wyższego.
Lista recenzentów na stronie www.wydawnictwo.wsb.poznan.pl
oraz w ostatnim numerze czasopisma z danego roku.

Journal included in the following databases: Index Copernicus, BazEkon.
Journal reviewed in compliance with the standards set forth by the Ministry of Science and Higher Education.
A list of referees is available at www.wydawnictwo.wsb.poznan.pl
and published in the last issue of the Journal each year.

Procedura recenzowania / Review procedure
https://znwsb.publisherspanel.com/resources/html/cms/FORAUTHORSINFO

Redaktor naczelny czasopisma / Editor-in-chief
dr hab. Wiesława Caputa, prof. WSB w Poznaniu

Redaktor naukowy (tematyczny) / Scientific (Theme) editor
dr hab. Wiesława Caputa, prof. WSB w Poznaniu

Redaktorzy statystyczni / Statistical editors
dr hab. Maria Chromińska, prof. WSL w Poznaniu, dr Rafał Koczkodaj

Weryfikacja abstraktów angielskich i tłumaczenie wstępu na język angielski / English abstracts revised and the Introduction translated by
Grzegorz Grygiel

Redaktor prowadzący / Text editor
Elżbieta Turzyńska

Redakcja i korekta, skład i łamanie / Copyedited and typeset by
Elżbieta Turzyńska

Projekt okładki / Cover design by
Jan Ślusarski

Publikacja finansowana przez Wyższą Szkołę Bankową w Poznaniu.
Publication financed by the WSB University in Poznan.

Wersja pierwotna – publikacja elektroniczna / Source version – electronic publication

ISSN 2719-6798

Wydawnictwo Wyższej Szkoły Bankowej w Poznaniu
ul. Powstańców Wielkopolskich 5, 61-895 Poznań, tel. 61 655 32 48
e-mail: wydawnictwo@wsb.poznan.pl
znwsb.publisherspanel.com, www.wydawnictwo.wsb.poznan.pl

Contents

Spis treści

Introduction

One of the basic problems of the modern world is the growing differentiation of regional development, which is manifested by different standards of living across regions and disparities in their economic potential. This differentiation can be observed within integrated economies, as exemplified by the European Union, as well as in individual countries. In order to reduce these differences it is necessary to create regional policies and constantly search for new development factors that can contribute to regional convergence.

In pursuing this goal, the European Union countries can rely on a number of institutions and supporting programs. Being outside the EU, Ukraine does not have such possibilities, which raises the question concerning a possible basis for its own regional policy.

The present issue addresses selected aspects of Ukraine's regional policy in the context of integration with EU countries.

The first article, by Galina Myskiv, Nazarii Grygoryshyn i Olha Levytska-Revutska, entitled *Efficiency of Ukraine's monetary policy in the context of achieving monetary security* explores the efficiency of monetary policy in the context of achieving monetary security in Ukraine. The authors identify and analyze criteria and indicators of the country's monetary security and conclude that it is sufficiently effective to achieve the monetary goals and guarantee economic security. They also identify four groups of monetary threats to economic security related to monetary policy, banking, investment and institutional environment.

Ukraine's financial security is closely related to its system of taxation. In the next article, Yaroslav Yarema focuses on the currently used mechanism of personal income taxation. The author concludes that the personal income tax remains the most important sources of revenue in the consolidated state budget and in local budgets, with wages being the main source of taxable income. The article indicates shortcomings of the mechanism of personal income taxation in Ukraine and includes a proposal of how it can be reformed to achieve better effectiveness.

The following two articles deal with the problem of foreign trade.

In her article entitled *Trends and prospects of developing the export potential of Ukraine's machine building industry,* Olena Liahovska analyses trends in exports of mechanical engineering products by product groups are studied, the main importing countries and the most exported types of goods of the machine--building industry of Ukraine are indicated. The results of the analysis indicate that exports of engineering products in Ukraine have declined significantly in recent years. It is noted that the main reasons for the low export orientation of machine-building production are related to the low level of innovation financing. The directions of machine-building production that can become competitive on the world market in the future are indicated. Recommendations for increasing production and exports of this sector of industry in Ukraine are given.

In the article entitled *Ukraine's foreign trade with the EU from the perspective of consumption security* Kateryna Antoniuk, Anatoliy Mokiy, Dmytro Antoniuk demonstrate that in the conditions of global and supra-regional competition, where customers are offered goods (services) that serve the same purpose but differ in quality, the problem of ensuring security of consumption becomes increasingly relevant for Ukraine. While being a key factor in the shaping of demand, it contributes to increasing the competitiveness of economic entities.

Mariana Melnyk and Iryna Leshchukh's article entitled *Transformation of the economy of Ukrainian cities of regional significance: efficiency of the impact on the socio-economic developmen*t describes a methodological approach to evaluating the impact of the transformation taking place in the economies of cities of regional significance (CRSs) on the socio-economic development of regions. The article emphasizes the asymmetry of regional socio-economic development as a result of the concentration of business activity and capital in the CRSs, a higher level of reception of growing direct foreign investment in the economies of CRSs compared to capital investment and a strong impact of structural changes in the economies of CRS on the Gross Regional Product.

In her article entitled *Characteristics and the level of shadow economic activity undertaken by Ukrainian financial services companies* Iryna Leshchukh proposes an approach to assessing informal activity conducted by enterprises in Ukraine's sector of financial services. The author analyses hidden, informal and illegal activities of financial services enterprises, taking into account how these activities affect the efficiency of exploiting its potential to ensure the country's socio-economic growth and highlighting priority measures that need to be taken in order to create conditions for an efficient operation of financial services enterprises within the legal framework.

Yaroslav Kudria, in his article entitled *Economic effects of non-additive development of industrial enterprises: an analytical review of the process and structural transformations* presents a methodological approach to assessing the

effects of non-additive development (NAD) of enterprises, taking into account the effects of economic processes on the intensification of production activities of an enterprise and the structural transformation of the socio-economic system, which further stimulates the development of enterprise activity. The author analyses the current non-additive development of enterprises in the industrial sector of the Ukrainian economy by assessing the dynamics and identifying key trends depending on the main types of industrial activity. The results of the analysis are used to identify recent structural changes in the industrial sector.

The last article, entitled *Global trends regarding competence requirements for managers* by Iryna Pasinovych, outlines priority directions of modern management, which include globalization, implementation of the principles of sustainable development, challenges associated with volatility, uncertainty, complexity and ambiguity, rapid technological development, changes in office and managerial work. Against the background of a comparative description of industrial and post-industrial society the author shows that the human capital is currently a key resource and knowledge is the driving force of development. Given these new requirements, key competencies of a modern manager are presented.

The articles included in the current volume provide an overview of current problems facing Ukraine, which can be of interest not only to researchers and students but also to business practitioners.

Wiesława Caputa, PhD

Zeszyty Naukowe
Wyższej Szkoły Bankowej w Poznaniu
2021, vol. 92, no. 1
DOI: 10.5604/01.3001.0014.9150

Galina Myskiv

Lviv State University of Internal Affair (Ukraine)
Department of Finance and Accounting
orcid.org/0000-0001-9315-8859
email: galinamyskiv@gmail.com

Nazarii Grygoryshyn

Lviv State University of Internal Affair (Ukraine)
Department of Economics and Economic Security
orcid.org/0000-0002-2312-4968
email: az27@meta.ua

Olha Levytska-Revutska

Lviv University of Trade and Economics (Ukraine)
Department of Foreign Languages
orcid.org/0000-0002-6689-3054
email: vodohraj@yahoo.com

Efficiency of Ukraine's monetary policy in the context of achieving monetary security

Abstract. *The article explores the effectiveness of monetary policy by identifying its main criteria and analyzing indicators of monetary security. The authors draw conclusions about the state of monetary policy and its impact on Ukraine's economic security. The analysis indicates that the country's monetary policy is sufficiently effective to achieve the monetary goals and guarantee economic security. Four groups of monetary threats to economic security were identified, related to monetary policy, banking, investment and institutional environment, which were rated on a scale from 0 to 5 for 2010, 2015 and 2020. At the beginning of 2020 Ukraine's economic security was mainly threatened by excessive dollarization of the economy and a small share of long-term loans in all total loans granted by banks. The authors argue that effective monetary policy at the present stage should focus on stabilizing, modernizing and restructuring the industry.*

Keywords: *monetary policy, monetary security, economic security, efficiency, indicators, monetary threats*

1. Introduction

The processes of globalization and objective multi-faceted nature of modern financial relations keep developing new threats and risks, ignoring of which

leads to the development of crisis phenomena and makes analytical tools of the monetary policy inadequate in the rapidly changing conditions of reality. As the results, the fundamentals of the monetary policy in the national economy also require additional reconsideration for the sake of ensuring protection of the national interests and sustainable state development for the long run. Economic security of the state is becoming one of the key problems requiring permanent promotion along all the directions it includes, in particular, in the monetary field.

Since the period of economic reforms, the monetary policy in Ukraine has been developed and implemented only with due account of the monetary reference points and targets. The monetary mechanism was not adjusted to economic problem solving, which fact was confirmed by the financial crises of the 2008-2009 and 2015-2016. Monetary tools were directed at ensuring price stability and slowing down the pace of inflation, leaving out the need for boosting economic growth in the state. Price stability has become a favourable environment for economic growth, but not its factor. It is important of ensure achievement of sustainable economic growth via quality changes in the economy, and not just via short-term quantitative growth indicators to the detriment of long-term development.

The consequences of financial crises for the national economy have shown that implementation of the monetary policy over the previous periods posed a threat for the macroeconomic stability and sustainability of long-term development. All this has caused the need for assessing the efficiency of the monetary policy at the current stage of the national economy development in the context of ensuring economic security of the state.

It should be indicated that the regulatory documents of the National Bank of Ukraine (NBU) do not contain any definition of the notion ‘efficiency of the monetary policy, that is why opinions of scientists concerning the interpretation of this notion differ.

Thus, Serhiy Tsyhanov [2007] defines the efficiency of the monetary policy via the balance of money demand and supply as the key condition for the stability of the national currency. Svitlana Naumenkova [2017] shares his opinion, indicting that ‘development of an efficient monetary policy causes the need for detailed consideration of the issues of balancing the demand for and supply of the monetary stock with actual activities aimed at ensuring financial stabilization and economy stimulation’.

Scientists Olha Bespalova and Tatyana Ilyina [2014]assess the efficiency of the monetary policy through empirical assessment of efficiency of the effect of the transmission (transfer) mechanism of the monetary policy in the cross-section of its main channels (the chains of interrelated macroeconomic variables) – inter-

est, currency channel, prices of assets, expectations of market entities, monetary channel, etc.

In the opinion of Volodymyr Pradun [2018], the monetary policy shall be acknowledged as efficient if the economy does not have any booms and declines, is characterized by sustainable development and predictability of the situation in the money markets.

Thus, in the context of the research, efficiency of the monetary policy shall be considered as the result of minimizing monetary threats to the state's economic security.

2. Core material

The criteria of the monetary policy efficiency. The criteria of the monetary policy efficiency are set annually in the Fundamental Principles of the Monetary Policy, approved by the Resolution of the Management Board of the National Bank of Ukraine.

In 2010 the main goal of the monetary policy was to achieve 'monetary unit sustainability, which constitutes the foundation for ensuring well-balanced economic development, raising the employment rate and real income of residents [Osnovni zasady hroshovo-kredytnoi polityky na 2010 rik].

In 2014 the key criterion of the monetary policy was maintenance of low stable inflation rate in the mid-term (from 3 to 5 years). The NBU's effort was directed at maintaining the consumer price index (CPI) growth within the limits not exceeding the value forecasted by the Government – 19%. In the mid-run the NBU will strive to achieve and maintain the consumer price index within 3-5%.

The priority goal of the monetary policy in 2015 was also achievement and maintenance of the price stability in the state via ensuring low stable inflation pace in the mid-term (from 3 to 5 years), as measured by the consumer price index within 3-5% a year. [Osnovni zasady hroshovo-kredytnoi polityky na 2015 rik].

The main principles of the monetary policy for 2016-2020 followed the tradition of the previous years, and again achievement of the 'price stability via compliance with the quantitative goals for inflation', promotion of the 'financial stability and keeping with the stable rate of economic growth and support of the economic policy of the Government of Ukraine on condition this would not prevent from achievement of the inflation goals' was set as the priority goal for the National Bank of Ukraine [Pro Osnovni zasady hroshovo-kredytnoi polityky na 2016-2020 roky].

That means that over the period under research there can be traced an absolute priority of achievement and maintenance of the price stability as the critical goal of the NBU's monetary policy, as compared with other goals and tasks. At the same time, this NBU's goal is only partially related to ensuring economic growth in the state and is absolutely not related to the issue of financial and/or economic security. Therefore, while researching the efficiency of the monetary policy in terms of ensuring economic security of the state we will use the following criteria [Vlasyuk 2008]:

– sustainability of the monetary field, that is its ability to fulfill its tasks and perform its functions in a full-fledged way in the conditions of availability and impact of external and internal threats;

– independence of the state policy in the monetary field, that is the ability to independently determine and secure achievement of strategic and tactical objectives of the monetary regulation;

– ability of the monetary system to develop for the sake of ensuring sustainable economic development of the state.

The importance of the monetary policy for ensuring financial security, and economic security via it, lies in the fact that it affects the real purchasing power of the national monetary unit and the stability of the money turnover, which ensure stable conditions for production recovery.

The choice of the most efficient monetary policy within the framework of ensuring financial security at the current stage lies in the development of the conditions for sustainable development of the financial system and ensuring economic growth through inflation impact limitation. Traditional monetary policy that used to be efficient in the period of separation of national economies is not efficient now. The state can no longer regulate and control the cross-border capital flow. Besides that, prevention of a repeated global financial crisis requires implementation of new methodological approaches to the monetary policy, improvement of its tools and mechanisms.

Analysis of the monetary security level indicators. In the development of the long-term economic development strategy based on security principles it is important to determine certain indicators of the monetary security level. We suggest the list of such indicators, with determined threshold values and the characteristics of possible threats posed by deviations of the actual values of those indicators from their threshold values (Table 1).

Thus, as it can be seen from Table 1, the list of indicators of the state monetary security level assessment is rather long, this enabling the NBU to assess the efficiency of the monetary policy in dynamics.

The most important indicator by which the efficiency of the monetary policy and achievement of the NBU's objectives are assessed is inflation rate. Using this indicator the level of securing internal financial stability in the state is also

Table 1. Indicators of the level of the monetary security of Ukraine

No.	Indicator name	Threshold value	Possible threat of deviation of the actual figure from the threshold value
1.	Economy monetization, M2/GDP	40-50%	Low level of monetization can lead to reduced consumer and investment demand, limited economic growth.
2.	The scope of international (gold and foreign currency) reserves	The volume of 3-month import	Insufficient volume of gold and foreign currency reserves limits the opportunities of the NBU ensure monetary unit sustainability.
3.	Inflation rate	up to 10% a year (creeping inflation)	Inflation reduction by all means can lead to the credit liquidity crisis and final demand restriction.
4.	Economy dollarization rate	20%	Excessive dollarization testifies to the growing lack of residents' trust in the national money, dependence of the state economy on the fluctuations in the foreign currency exchange rate, in particular, that of the US dollar; makes the influence of the NBU on the money supply in the economy worse, this making it more difficult to influence stability of the national money.
5.	Velocity of money	2	Indicator growth points to the unwillingness of residents to save, which is a proof of instability in the economy. Considerable slowing down of the velocity of money stands for the seizure of money from circulation by residents, their unwillingness to spend it, that may urge additional money emission.
6.	Cash scope, % to the monetary supply	no more than 10	Considerable scope of cash in circulation points to the imperfect nature of the banking system and money circulation, proves the lack of trust in the banking system, creates favourable conditions for the shadow economy functioning.
7.	The share of long-term credits in the general scope of credits provided by banks for the economy, %	no less than 30%	The value of the indicator being lower than the threshold one points to the availability of high credit risks of long-term crediting both for creditors and for borrowers. That leads to reduced investment into the state economy, thus impeding economic growth.

Source: own authors' development.

determined. That is why the goal of central banks is to follow inflation reference points which are normally set as the general goals of the monetary policy that could be easily measured.

The threshold value of the inflation rate is inflation up to 10% a year (creeping inflation), according to the current inflation targets of the National Bank of

Ukraine which it has been trying to follow since 2017 – the period of implementation of inflation targeting as the monetary regime in Ukraine.

Experience has shown that maintenance of moderate inflation in the long-run develops the overall sense of macroeconomic stability and predictability with economic agents, this shaping up solid foundation for sustainable economic development.

Table 2 represents the **core indicators of the monetary security level.**

Having analyzed inflation indices over 2010-2020, we have established that this indicator went beyond the threshold value, thus creating a threat for the financial and economic security of Ukraine in 2014-2017 (124.9%; 143.3%; 112.4%; 113.7%, respectively? in those years), when the state was faced with the financial and economic crisis caused by political instability and full-swing military operations in the south and east of the country.

That means that external factors in that period provoked inflation growth that caused destabilization of the status of the financial system and posed a threat for the state economic system in general, this manifesting in the following:

– reduced rate of real resident income growth;

– increased cost of credit resources;

– reduced scope of economic agents' savings;

– loss of state price competitive positions in the domestic and external markets;

– imbalance in the monetary and commodity markets, this leading to appearance of many accounts receivable and accounts payable, etc.

In other years of the period under research the inflation rate corresponded to the set threshold value (up to 10% a year) and was kept by the NBU within creeping inflation, this posing no threat for the financial and price stability in the state.

Inflation maintenance within the inflation targets set by the NBU over the recent years testifies to the achievement of the price goals of the monetary policy and to its efficiency.

An important tool of the Central Bank's monetary policy for regulating currency exchange rate is management of gold and foreign currency (international) reserves which should be available in sufficient amounts to prevent rapid devaluation or revaluation of the national monetary unit.

As it has been shown in Table 1, the threshold value of the volume of international reserves equals the volume of 3-month state import. As of the beginning of 2020 finally the most efficient value of the volume of gold and foreign currency reserves was achieved in the amount of 26.29 billion USD, that could cover 4-month import of Ukraine, this enabling to overcome the critical threat posed by this indicator to the state's economic security.

High level of threat posed by gold and foreign currency reserves was in place since the beginning of 2014 since the volume of reserves, as the result of

Table 2. The main indicators of the level of impact of the monetary policy on economic security

Indicator	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
The indicators of the NBU's monetary statistics											
Gross domestic product (GDP), bln. UAH	913.35	1,082.57	1,316.60	1,408.89	1,454.93	1,566.73	1,979.46	2,383.18	2,982.92	3,558.71	3,974.56
Inflation index, % (a year)	109.1	104.6	99.8	100.5	124.9	143.3	112.4	113.7	109.8	104.1	105.0
M3, mln. UAH	487.30	597.87	685.51	773.20	909.0	956.7	994.1	1,102.7	1,208.9	1,277.6	1,438.3
M0 mln. UAH	157.03	182.99	192.66	203.25	237.8	282.9	282.7	314.4	332.5	363.6	384.4
M1 mln. UAH	233.75	289.89	311.05	323.23	383.8	435.5	472.2	529.9	601.6	671.3	770.0
M2 mln. UAH	484.77	596.84	681.80	771.13	906.2	955.3	993.8	1,102.4	1,208.6	1,273.8	1,435.2
The volume of bank credits provided to the economy, bln. UAH	723.30	732.82	801.81	815.14	910.78	1,020.67	981.63	998.68	1,016.657	1,073.13	971.87
The volume of NBU's international reserves, bln. USD	25.29	35.14	31.36	24.65	17.81	6.42	13.44	15.44	18.58	20.82	26.29
Estimate indicators											
Money supply growth rate as compared with the previous year	–	1.23	1.15	1.13	1.18	1.05	1.04	1.11	1.10	1.06	1.13
Monetization rate (M2 / GDP), %	53	55	52	55	62	61	50	46	41	36	36
Circulation velocity (GDP / M2)	1.88	1.81	1.93	1.83	1.61	1.64	1.99	2.16	2.47	2.79	2.77
Cash volume (M0 / M3), %	32	31	28	26	26	30	28	29	28	28	27
The share of long-term credits in the overall scope of credits provided by banks for the economy, %	31	29	25	22	19	21	22	26	26	23	20
Economy crediting rate, %	79	68	61	58	63	65	50	42	34	30	24
The difference between interest rates for credits and deposits in the national currency for non-financial corporations, in p.	8.2	9.1	5.4	6.3	8.9	10.1	6.8	7.0	6.3	5.4	5.8
Credit dollarization rate, %	46.03	40.31	36.75	33.82	44.33	55.8	49.4	43.9	42.8	36.9	38.2
Residents' deposit dollarization rate, %	42.57	42.97	44.04	37.05	41.37	45.3	46.26	45.38	42.05	41.66	41.4

Source: calculated on the basis of [Indeks infliatsii. Ministerstvo finansiv Ukrainy; Depozyty, zalucheni depozytnymy korporatsiiamy (krim Natsionalnoho banku Ukrainy); Kredyty, nadani depozytnymy korporatsiiamy (krim Natsionalnoho banku Ukrainy), Natsionalnyi bank Ukrainy; Hroshovo-kredytna ta finansova statystyka, 2019, Natsionalnyi bank Ukrainy; Nominalnyi VVP Ukrainy z 2002 po 2020 rr.].

monetary instability and limited credit facilities revenue from the International Monetary Fund (IMF) went down to 17.81 bln. USD in 2019 (as of the early 2013 – 24.65 bln. USD).

Taking into account permanent replenishment of the gold and foreign currency reserves by the NBU over the whole 2020, it may be considered that the threat posed by that indicator has been eliminated, while the NBU has got a full-fledged efficient tool for ensuring and regulating stability in the currency market and for preventing further hryvnia devaluation.

The impact of the amount of money supply, characterizing all the monetary assets being at the disposal of natural persons and legal entities, on the level of financial security of any state is undeniable.

The structure of money supply reflects the level of development of the country's economy and develops out of the monetary aggregates M0; M1; M2, and M3 on the basis of which a number of analytical indicators for the assessment of the efficiency of the monetary policy and its trends over the period of 2010-2020 have been estimated.

Money supply growth rate M3 as of the beginning of 2020 made up 1.13 as compared to the beginning of. 2019, or 13%. The largest growth rate of the money in circulation over the period under research has been traced at the beginning of 2011 – 1.23 to the previous year, or 23%. It should be indicated that money supply growth was within the norm and did not cause any price destabilization, which, in its turn, did not pose a threat for the state's financial security.

According to the NBU's annual report for 2019 [Richnyi zvit NBU za 2019 rik], a considerable growth of cash M0 occurred in the cash circulation in Ukraine in 2019. The balance of cash in bank cash desks as of January 01, 2020 made up 40.7 bln. UAH. That is the maximum amount traced since the beginning of the monetary reform in 1996. Over 2019 the balance increased by 4.2 bln. UAH, or by 11.5 %, as compared to the beginning of the year.

The rate of economy monetization is a macroeconomic indicator characterizing the degree of economy provision with the money necessary for making payments as well as reflecting the provision of the production and consumption processes with the respective money supply [Mishchenko 2011: 211].

Economy monetization is related to actual economic and social processes taking place in the country, the value of the goods and services created in the economic system, velocity of money circulation, the value of demand for and supply of goods and money, the status of the commodity and financial markets. In case of excessively low monetization the country may expect stagnation of the stock exchange, commodity, and currency markets, long sales and payment crises, barters in commodity turnover and accumulation of insignificant scope of savings, and, as the result, low level of investment.

According to the date provided in Table 1, the threshold value of the monetization level is within 40-50%. We will analyze the dynamics of the given indicator over the period under research with due account of this level.

The level of monetization in the period of 2010-2020 changed depending on the condition of the economy. Thus, in 2010-2103 the indicator fluctuated within 52-55%, which slightly exceeded the threshold value. Such trends in the indicator values can be accounted for by the availability of macroeconomic imbalances in the economy of Ukraine, that arose under the effect of the global financial crisis [Vysotska, Horalko 2017]. Social and economic changes that occurred in the country in 2014 caused monetization level growth up to 62%, and in 2015 – up to 61%. In 2019-2020 the figure was reduced considerably and made 36%, which is less than the threshold value.

In general, over the period of 2010-2020 the growth of the consolidated money supply amounted to 951.0 bln. UAH, that is it increased almost threefold. As of the beginning of 2020, the money supply made 1,438.3 mln UAH, as of the beginning of 2010 – 487.3 mln. UAH, in spite of the fact that the money supply growth rate considerably outpaces the demand for it. There is an assumption that the growing rate of monetization leads to inflation processes. However, just the opposite can be proven by the example of the Ukrainian monetary system – the growth in the money supply did not affect the inflation rate regulated by the NBU via inflation targeting.

In the cross-section of the analysis of indicators calculated on the basis of money aggregates, an important indicator of the monetary system status and the state's monetary policy is the share of cash in circulation, which is calculated as the ratio of M0 to M3 and is shown in percentage.

In general, the most efficient amount of cash in circulation is the volume not exceeding 10%. However, in most developed countries of the world there has recently been a trend towards the growth in the amount of cash in the monetary circulation of the national currency, definitely, at a smaller pace as compared with Ukraine.

As far as Ukraine's money circulation is concerned, in this country cash circulation takes a considerable place in payments. Thus, in period from 2010 to 2020 the share of cash (M0 aggregate) varied from 27% to 32%, which means that one third of the money was circulating beyond banks and was not controlled by the banking system. A positive trend consisted in the reduction of the amount of cash over the period and its lowest value at the beginning of. 2020 – 27%, as compared to 32% as of the beginning of 2010.

Important reasons for the high share of cash money in circulation is the striving of many economic agents to make payments in cash, financial illiteracy of residents, imperfect nature of banking technologies for cash-free payments with cards by residents in all inhabited settlements and in all retail trade or service

institutions, low level of trust of legal entities and natural persons in the banking system.

Let us indicate that high share of cash (more than 40%) testifies to the lack of trust in the banking system, to be more specific, to the availability of significant threats related to saving money through banks. Also, a considerable share of cash may cause shadowing of the economy, cause difficulties in the field of control exerted by the central bank over money aggregates and money supply in general.

At the same time, the high share of cash in circulation leads to a number of negative consequences for the monetary and economic system: the status of payments is made more complicated, credit capacity of banks goes down, the level of shadow economy goes up. This all creates direct threats to the monetary security, and finally – to economic security in general.

Thus, on the basis of the indicators calculated through money aggregates, we draw a conclusion about their most efficient values for the monetary field of Ukraine, absence of threats posed by them to the financial and economic security of the state, and that means that the NBU's monetary policy has been efficient in this direction.

We consider money circulation dollarization to be the critical indicator for the assessment of the monetary security status, since high value of this indicator testifies to the dependence of the state's economy on the fluctuations of the foreign currency exchange rate, in particular, the US dollar.

Dollarization is the economic phenomenon the essence of which lies in replacement of the national monetary unit with converted foreign currency as the result of inadequate performance of the functions of money by it. High level of the use of foreign currencies in the monetary circulation conceals a number of threats for the national economy, that are manifested in the incapacity of the national monetary unit to perform the functions of the general equivalent in the territory of its state and the only means of accumulation; intensification of the state's economy dependency on the country which is the issuer of the foreign currency in the internal monetary market; dependence of the cost of hryvnia in the currency market on the amount of foreign money; increased shadowing of the economy; incapacity of the central bank to manage the monetary policy via establishing control over cash supply in foreign currency in circulation and the dynamics of foreign currency deposits [Vysotska, Horalko 2017].

Table 2 shows the estimated dynamics of the level of dollarization of the residents' credits and deposits. In spite of the fact that 20% dollarization is considered to be an acceptable rate, this figure is much higher in the realia of the Ukrainian economy. The key factors causing dollarization are high inflation rate, national currency instability, currency exchange rate fluctuations, lack of residents' trust in the national currency, unstable political and economic situation in the country. Due to the above preconditions, the level of credit and deposit

dollarization was the highest in 2014-2015: 55.8% and 49.4% under credits, and 45.3% and 46.26% – under deposits. It was those years in the recent decade that have been recognized to be the years of the most severe political and economic instability, when the trust in the national currency was extremely low, while inflation was extremely high, and the GDP decline was critical.

Currently, Ukraine is a country with 'highly dollarized' economy, according to the International Monetary Fund's methodology: the dollarization rate by the share of deposits made in foreign currency in the M2 monetary aggregate exceeds 30% [Vysotska, Horalko 2017].

A negative outcome of the high dollarization level is the fact that the state is actually being transformed into the creditor of the foreign state's economy (in particular, the USA). It is highly difficult for the central bank to maintain price, financial, and banking stability in the highly dollarized economy.

Besides that, the negative outcomes are aggravated by the fact that the state is losing a considerable share of the money it needs for servicing its external commitments, financing investment and economic growth in general.

In our opinion, the NBU's monetary policy cannot be considered efficient as far as the economy dollarization rate is concerned. Obviously, the NBU has not used all the stabilization tools and levers to minimize this indicator which has been dangerously high over the whole period. However, on the other hand, the economy dollarization rate is also affected by the national economic policy of the Government of Ukraine, which needs to establish general favourable stable conditions for the life and activities of the population that would have an absolute trust in the national currency as well as would save and credit mainly in it.

To complete our analysis, let us also assess the indicator of the share of long-term credits in the overall scope of credits provided by banks to the state economy for a period exceeding 5 years.

According to the results obtained in Table 2, we come to the conclusion about the insufficiency of the long-term economy crediting over the period of 2010-2020. Only in 2010 the value of the estimated indicator made 31%, while in other years it was considerably lower than the threshold one. As of the early 2020, the share of long-term crediting was only 20%.

Thus, we consider it necessary for the NBU to activate the credit policy of banking institutions in relation to long-term crediting for the sake of intensifying the effect on the development and growth of the state economy, and also cooperation with the Government should be improved in this respect for the sake of developing a joint and realistic strategy of the state development.

Thus, having researched and analyzed the key indicators of the monetary security level we may draw a conclusion about the sufficient level of monetary policy efficiency from the point of view of achievement of the goals of the monetary and economic security of the state.

The threat to economic security as of the beginning of 2020 is posed by excessive dollarization of the economy and the insignificant share of long-term credits in the overall volume of credits provided by banks for the economy. That is why, for the sake of ensuring monetary security, the National Bank of Ukraine should adjust its monetary policy. However, in general, taking into account the positive dynamics of all statistical and estimation indicators for the recent years as well as skillful overcoming of the consequences of the 2014-2015 financial and economic crisis by the NBU, we may consider the NBU's monetary policy efficient as for the current stage.

Monetary achievements of the NBU. It would also be expedient to focus on the NBU's achievements over the recent years, mentioned in the Financial Sector Development Strategy until 2025. In particular, the regulator indicates that 'the financial and banking systems are efficiently performing the functions of financial mediation. Ukraine has got a favourable business environment, in the conditions of low inflation economic growth is sustainable and of high quality. GDP growth, expanded crediting of the real sector of the economy, improved payment capacity of private consumers promote macrofinancial stability, capitalization of the banking system and the market of non-banking financial services is growing. The legal field for the development of the market of secondary credits, determination of the principles of managing liabilities under monetary commitments, mechanisms of working with the rights of claim, redemption of bad assets has been developed. The mechanism of securitization of financial and other assets has been introduced, and the mechanism for mortgage assets securitization has been improved. The scope of small and medium-sized business crediting have approached the average for the Central and Eastern Europe countries due to the cheapening of credit resources, improved activity and reporting transparency' [Stratehiia rozvytku finansovoho sektoru Ukrainy do 2025 roku, 2019].

That all points to the activation of the NBU activities related to overcoming of the negative phenomena and processes in the financial sector, in particular, the banking system, since a considerable share of progress in the field is due to the efficient monetary policy of the NBU.

Also, the Strategy indicates that the 'regulator has introduced regulation of new and modern directions *FinTech – InsurTech, WealthTech* and crediting platforms, crowd-funding regulation. Due to that current international trends related to *Machine Learning* and *Artificial Intelligence* technologies are represented and used directly in *FinTech* directions. The European Union's standards related to directive PSD2, ISO20022 standard and instant payments have been introduced, this enabling to raise competitiveness in the financial market, to ensure expansion of the range of financial services. The concept of using e-hryvnia has been developed (*CBDC – Central Bank Digital Currency*) at the national level' [Stratehiia rozvytku finansovoho sektoru Ukrainy do 2025 roku, 2019].

Thus, the monetary system of Ukraine at the current stage is being developed in the context of its integration into the global banking system, this testifying to its progressiveness and efficiency.

Assessment of monetary threats. We consider it to be expedient to conduct a further study of the monetary policy efficiency amidst monetary threats posed to economic security, that will enable to comprehensively and dynamically assess the effect of the monetary policy on economic security and draw a final conclusion on its efficiency.

Thus, the research conducted has enabled to outline four groups of monetary threats posed to economic security: monetary, banking, investment, and institutional.

The group of institutional or organizational and legal threats unites the threats developed in the NBU's performance area and include the threats arising due to imperfect legislative regulation of the monetary field or interaction between institutions.

The group of monetary threats stands for the threats arising in the monetary system and being the indicators of direct NBU's regulation, that have stopped being under control as the result of the effect of subjective and objective circumstances and conditions.

The group of banking threats arises in the activity of banking institutions and embraces negative indicators, phenomena, and processes that are not regulated by banks and that have activated the negative impact on the development of the national economy and economic security.

The group of investment threats is related to the movement of investment capital, both internal and external, leading to the inflow or outflow of quite an amount of investment resources into the national economy or from it.

Let us develop the assessment matrix for the identified monetary threats, where each threat will be assigned a certain number of points from 0 to 5, where 0 is the lowest level of hazard, while 5 points go to the highest critical level of threat. And we will rely upon the analytical study of the NBU's statistical indicators which we performed above, on the assessment of estimate indicators and their dynamics over the period under study.

In order to explain the author's methodology of assessing monetary threats posed to Ukraine's economic security, let us develop the criteria of monetary threat assessment:

0-1 – low level of threats – the indicators over the reporting period showed positive growth (decline) dynamics and / or are within the standard (threshold) values;

2-3 – insignificant level of threats – the indicators over the reporting period showed a slight deviation from positive dynamics or a slightly negative trend;

4-5 – high (critical) level of threats – the indicators over the reporting period showed a clearly manifested negative trend and went beyond the standard (threshold) values.

At the same time, it should be noted that in order to get as reliable reflection of the monetary policy efficiency in terms of prevention and overcoming of the monetary threats posed to economic security as possible, let us develop several matrices of monetary threat assessment, that will embrace the period of 2010-2020 . The matrix of assessing the monetary threats posed to the economic security of Ukraine as of the end of 2020 is presented in Table 3.

In this article the results obtained within the matrices for assessing the monetary threats posed to the economic security of Ukraine in 2010 and 2015 are provided only in a generalized way.

According to the established system of monetary threat assessment, in 2020 the most significant monetary threat was posed by the group of institutional threats containing a large subjective component, the so-called 'human factor'. It is the transparency of the NBU's activities, the level of professionalism in the management, coordination of the activities with the Government and frequent legislative changes that are the threats that may get stronger or weaker depending on the level of professionalism of the officials of monetary institutions. And it is in this group that we see the most significant threat in 2020.

The lowest score, according to the author's assessment, – 1.63 – went to the group of monetary threats that, respectively, develops the lowest level of monetary threat. That is the group of threats subjected to direct regulatory activities of the NBU and which were successfully minimized in 2020, this pointing to the efficiency of the NBU's monetary policy.

It should be indicated that according to the assessment criteria score, none of the outlined groups of threats in 2020 posed a high or critical level of threat for economic security. The average score for all the groups of threats was 2.25, which is identified as *an insignificant level of threats, or absolutely acceptable*.

Along with that, inside each group there are high-level threats assessed at 4 points. In particular, within the group of monetary threats this is excessive economy dollarization. Among banking threats these are the growing volume of bad debt, deficit of internal mid-term and long-term credit resources, insufficiency of long-term economy crediting. Within the group of investment threats these are considerable amount of money taken offshore. It is those threats that pose a high level of danger, and their dynamics is not characterized by any downward trend.

As far as assessment of the monetary threats posed to the economic security of Ukraine as of the end of 2010 is concerned, the average score in the four groups was 1.99, which is below the estimated average of 2020. This means that, according to the authors' estimates, the level of monetary threats in 2010 was

Table 3. The matrix of assessment of the monetary threats posed to the economic security of Ukraine (2020)

Monetary		Banking		Investment		Institutional	
Threats	Score	Threats	Score	Threats	Score	Threats	Score
Price instability	1	Banking system instability	2	Considerable scope of money taken offshore	4	Low level of independence and transparency of the NBU's activities	3
Deterioration of the money supply structure	2	Accounting rate growth	1	Rapid outflow of foreign capital, caused by the financial crisis	1	Inadequate management of the monetary system financial regulation	2
Rapid hryvnia exchange rate decrease	1	Excessive growth in the consumption and mortgage crediting	1	Considerable impact of the speculative foreign capital	1	Reinforcement of administrative pressure exerted on the monetary policy implementation mechanism	2
Ungrounded national currency emission	3	Intensified dependence of the banking system on the state support	1	Non-correspondence of the crediting structure to the objectives of investment economy upgrading	3	Absence of realistic forecasts of macroeconomic indicators, which fact has a negative impact on the NBU's activities.	3
Money supply volume growth	2	Loss of trust of economic agents in the banking system	2			Insufficient coordination of the actions taken by the Government and the NBU	3
Inflation rate growth	1	Insufficient volume of the banking system's resources	3			Imperfect nature and frequent changes of the regulatory framework	3
Reduction of gold and foreign currency reserves of the state	0	Credit resource cost growth	3				
Excessive use of modern derivative financial tools	1	Reduced volume of residents' savings and deposits.	2				
Rapid change of the currency exchange rate	2	Bad debt amount growth	4				
Excessive level of economy monetization	1	Deficit of internal mid-term and long-term credit resources	4				
Excessive economy dollarization	4	Insufficiency of long-term economy crediting	4				
Average group score	1.63	Average group score	2.45	Average group score	2.25	Average group score	2.67

Source: own authors' development.

lower than in 2020 and is determined as *low, with insignificant deviation from the standard (threshold) values.*

At the same time, in 2010 the highest level of threat was posed by excessive economy dollarization, which amounted to 40.31% for credits and 42.97 % for deposits, which exceeds the threshold value almost twice.

A much worse situation could be traced in the level of monetary threats as of the end of 2015. The average score in all groups of threats amounted to 3.7, which is determined as *high level of threats, with a clearly marked negative trend in the indicators over the reporting period*, since the values of the indicators went beyond the standard (threshold) values.

The highest danger in 2015 was posed by the monetary threats (the average score of the group was 4), which developed under the effect of internal social and political instability and actually led to a short-term collapse of the whole economic system of the state: the annual inflation pace grew up to 143.3%; international reserves decreased to the critical scope of 6,419.66 mln. USD; the share of outstanding debt increased twice – reaching 13.5%; the exchange rate started growing rapidly from 15.768 UAH as of the beginning of 2015 up to 23.784 as of the end of the year, etc. All these events were simultaneous and dealt a heavy blow to the economic system of the state, undermining its economic security.

In 2015 the group of banking threats got the average score of 3.73, while the group of investment threats got the average score of 3.75, which fact points to a rather high threat posed by both groups to economic security.

In particular, the highest score in 2015 in these groups went to: banking system instability – the number of banks in 2015 went down to 117 from 180 in 2014, while their financial damages for the first time amounted to 52,966 mln. UAH; accounting rate growth – the average annual accounting rate of the NBU made up 23.75%, which became an anti-record over the period under research; rapid outflow of foreign capital caused by the financial crisis – foreign direct investment reduced over the year by 4,570.9 mln. USD, etc. This all led to the loss of trust of economic agents in the banking system and caused development of the insufficient volume of the banking system's resources.

Let us also indicate that permanently high monetary threat is posed by low level of independence and transparency of the NBU's activities, which is assessed at 3 points over the whole period, which means that this is a considerable threat.

We are of the opinion that supporting of transparency by banking institutions constitutes an essential element not just for passing adequate and balanced financial decisions, but for analyzing, predicting and planning sustainable social and economic development of the country.

In spite of the fact that over the recent years the NBU has increased transparency of its activities in the context of the communication policy: through launching publishing of the inflation report, introduction of changes into the

organizational and functional structure of the NBU, expansion of the range of communication channels, modernization of functional content and structure of the site of the official Internet representation of the monetary regulator, improvement of its communication with the state authorities, launching of a series of lectures conducted by the NBU's administration, and others, the transparency indicator of the central bank made up 7.0 points in 2018-2019 out of 15. In the European countries this index is twice higher (the average value of the indicator is at least 10 points).

It can be stated that the National Bank of Ukraine uses communication channels for making information public for prospective users only by some 50%. That means that currently the intention to improve transparency and accountability of the NBU's policy remains just an unfulfilled wish.

The dynamics of assessing monetary threats by the outlined groups over 2010-2020 is presented in Figure 1.

Thus, the highest level of monetary threats posed to the state's economic security could be traced in 2015 – the year of the financial crisis caused by the unstable social and political situation in the state. In 2010 and 2020 the level of threats can be considered acceptable, the one that could be controlled and regulated by the NBU. This means that implementation of the NBU's monetary policy was efficient, as confirmed both by the authors' assessment points, and by the dynamics of the key indicators of the monetary field in the period under research.

At the same time, analysis of the efficiency of the monetary policy in Ukraine has proven that currently there are many drawbacks in it, viz.: excessive share of cash in the money circulation; insignificant volume of long-term crediting; high level of economy dollarization, considerable cost of credit resources along with simultaneous shortage of resources in the banking system, etc.

3. Conclusions

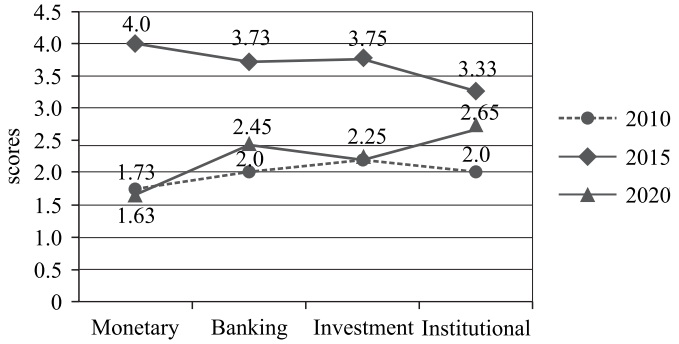
While carrying out its monetary policy the NBU should take into account the key factors leading to its reduced efficiency as well as take steps to minimize their negative effect, in particular:

– ensure reduced rate of dollarization in the structure of bank assets and liabilities, and hence, reduced dollarization of the economy in general;

– raise the efficiency of the interest rate policy through directing it at encouraging crediting of the real sector of the economy by banking institutions and for the sake of the most efficient management of the banking system liquidity;

– improve the mechanism of banking institutions refinance;

Fig. 1. The dynamics of assessing monetary threats over 2010-2020 by groups, in points



Source: own authors' development.

– ensure adequate information and communication policy of the NBU that must be directed at managing the expectations of economic entities via ongoing professional communication provided for by the central bank.

Thus, of importance in ensuring economic security of Ukraine at the current stage must be efficient monetary policy directed not that much at the financial, but rather production stabilization and modernization, structural transformation of industry. Only in that case will economic growth become a component of macroeconomic stabilization, while currently a restrictive nature of the monetary policy can be traced, its direction mainly at inflation minimization, and not at the economic growth needs (which results in reduced demand, unemployment growth, etc.).

References

Bespalova O., Ilyina T., 2014, Sovremennyye metodiki otsenki effektivnosti denezhno-kreditnoy politiki tsentral'nogo banka, *Vestnik Samarskogo gosudarstvennogo universiteta*, no. 2(113): 126-131 [in Ukrainian].

Depozyty, zalucheni depozytnymy korporatsiiamy (krim Natsionalnoho banku Ukrainy), Natsionalnyi bank Ukrainy, https://bank.gov.ua/ua/statistic/sector-financial/data-sector-financial#1ms [accessed: 20.10. 2020] [in Ukrainian].

Hroshovo-kredytna ta finansova statystyka, 2019, Natsionalnyi bank Ukrainy, https://bank.gov.ua/admin_uploads/article/MFS_2019-06.pdf?v=4 [accessed: 28.05.2015] [in Ukrainian].

Indeks infliatsii. Ministerstvo finansiv Ukrainy, https://index.minfin.com.ua/ua/economy/index/inflation/2019 [accessed: 20.10.2020] [in Ukrainian].

Kredyty, nadani depozytnymy korporatsiiamy (krim Natsionalnoho banku Ukrainy), Natsionalnyi bank Ukrainy, https://bank.gov.ua/ua/statistic/sector-financial/data-sector-financial#1ms [accessed: 20.10.2020] [in Ukrainian].

Mishchenko S.V., 2011, *Sovremennyye problemy teorii deneg i denezhnogo obrashcheniya*, Kiyev: Tsentr nauchnykh issledovaniy Natsional'nogo banka Ukrainy [in Ukrainian].

Naumenkova S.V., 2017, Makroekonomichni aspekty otsinyuvannya dostatnosti kapitalu bankiv v Ukrayini, in: S.V. Naumenkova, V.I. Mishchenko, S.V. Mishchenko, *Finansovo-kredytna diyalnist: problemy teoriyi ta praktyky*, 2nd ed., 4-16, http://nbuv.gov.ua/UJRN/Fkd_2017_2_3 [accessed: 19.09.2020] [in Ukrainian].

Nominalnyi VVP Ukrainy z 2002 po 2020 rr. Ministerstvo finansiv Ukrainy, https://index.minfin.com.ua/ua/economy/gdp/2019/ [accessed: 20.10.2020] [in Ukrainian].

Osnovni zasady hroshovo-kredytnoi polityky na 2010 rik, Natsionalnyy bank Ukrayiny, https://zakon.rada.gov.ua/laws/show/v0010500-09#Text [accessed: 20.10.2020] [in Ukrainian].

Osnovni zasady hroshovo-kredytnoi polityky na 2015 rik, Natsionalnyy bank Ukrayiny, https://bank.gov.ua/admin_uploads/article/MPG_2015.pdf?v=4 [accessed: 20.10.2020] [in Ukrainian].

Pradun V., 2018, Otsinka efektyvnosti hroshovo-kredytnoi polityky v umovakh zrostannia dokhodiv, http://dspace.nbuv.gov.ua/xmlui/bitstream/handle/123456789/21637/12%20-%20Pradun.pdf?sequence=1 [accessed: 11.11.2020] [in Ukrainian].

Pro Osnovni zasady hroshovo-kredytnoi polityky na 2016-2020 roky, Natsionalnyy bank Ukrayiny, https://zakon.rada.gov.ua/laws/show/v0541500-15#Text [accessed: 12.10.2020] [in Ukrainian].

Richnyi zvit NBU za 2019 rik, https://bank.gov.ua/admin_uploads/article/annual_report_2019.pdf?v=4 [accessed: 11.10.2020] [in Ukrainian].

Stratehiia rozvytku finansovoho sektoru Ukrainy do 2025 roku, 2019, NBU, https://bank.gov.ua/ua/news/all/strategiya-rozvitku-finansovogo-sektoru-ukrayini-do-2025-roku [accessed: 17.10.2020] [in Ukrainian].

Tsyhanov S., 2007, Shliakhy pidvyshchennia efektyvnosti ta funktsionuvannia mizhnarodnoi bankivskoi systemy rozrakhunkiv, *Aktualni problemy mizhnarodnykh vidnosyn*, no. 70, part 2: 45-57 [in Ukrainian].

Vlasyuk O.S., 2008, *Teoriia i praktyka ekonomichnoi bezpeky v systemi nauky pro ekonomiku*, Kyyiv: Natsionalnyi instytut problem mizhnarodnoi bezpeky pry Radi natsionalnoi bezpeky i oborony Ukrainy [in Ukrainian].

Vysotska I.B., Horalko O.V., 2017, Rol hroshovo-kredytnoi polityky u zabezpechenni finansovo-ekonomichnoi bezpeky Ukrainy, in: Ya.Ia. Pushaka, Ya.S. Pitsura (eds.), *Aktualni problemy ekonomichnoi bezpeky Ukrainy*, Lviv: Liha-Pres, 243-261 [in Ukrainian].

Efektywność polityki pieniężnej na Ukrainie w kontekście osiągania bezpieczeństwa finansowego

Streszczenie. *Przedmiotem artykułu jest zagadnienie skuteczności polityki pieniężnej, które jest rozpatrywane z uwzględnieniem jej głównych kryteriów oraz w odniesieniu do wskaźników poziomu bezpieczeństwa finansowego. Na tej podstawie autorzy formułują wnioski o stanie polityki pieniężnej i jej wpływie na bezpieczeństwo ekonomiczne Ukrainy, stwierdzając, że polityka ta jest wystarczająca efektywna, aby umożliwić osiąganie celów finansowych i zagwarantować bezpieczeństwo ekonomiczne państwa. Zidentyfikowano cztery grupy zagrożeń dla bezpieczeństwa ekonomicznego związane z polityką pieniężną, sektorem bankowym, inwestycjami oraz otoczeniem instytucjonalnym. Zagrożenia te zostały ocenione w skali od 0 do 5 dla lat 2010, 2015 oraz 2020. Na początku roku 2020 największym zagrożeniem dla bezpieczeństwa ekonomicznego była nadmierna dolaryzacja gospodarki i niewielki udział długoterminowych kredytów w ogóle udzielanych pożyczek. Autorzy doszli do wniosku, że efektywna polityka pieniężna na obecnym etapie powinna koncentrować się na stabilizacji oraz modernizacji i restrukturyzacji przemysłu.*

Słowa kluczowe: *polityka pieniężna, bezpieczeństwo finansowe, bezpieczeństwo ekonomiczne, efektywność, wskaźniki, zagrożenia pieniężne*

Zeszyty Naukowe
Wyższej Szkoły Bankowej w Poznaniu
2021, vol. 92, no. 1
DOI: 10.5604/01.3001.0014.9158

Yaroslav Yarema

Ivan Franko National University of Lviv (Ukraine)
Faculty of Financial Management and Business
orcid.org/0000-0002-8381-1727
email: jarema.yaroslav@gmail.com

The mechanism of personal income taxation and its prospects in Ukraine

Abstract. *The article analyses the current mechanism of personal income taxation in Ukraine, examining the impact of its individual elements on total revenues from personal income tax. The analysis of revenue contributions from personal income taxation to the consolidated state budget and local budgets indicates that the personal income tax remains the most important sources of revenue. In the structure of personal income tax revenues, wages are the main source of taxable income. The author analyses the mechanism of taxation for natural persons (businessmen) and tax receipts flowing to local budgets from incomes from business activity and highlights its shortcomings. In this context, he proposes introducing progressive tax rates, which will make it possible to shift the tax burden from individuals with low incomes to those who earn higher incomes.*

Keywords: *taxes, personal income, personal income tax, tax mechanism, tax administration, tax revenues*

1. Introduction

In Ukraine, as in any country in the world, taxes and fees play an important role in the financial system of the state. One of the effective fiscal levers for different tax systems is the taxation of personal income. The main purpose of the introduction of personal income taxation is to ensure budget revenues and create an equally intense tax pressure based on the direct determination of taxpayers' incomes. Achieving this goal requires perfect tax legislation, which defines a clear mechanism for tax administration.

In Ukraine, a partial reform of the system of personal income taxation has been repeatedly carried out, which has manifested itself in changes in tax rates, the amount of income exempt from taxation, and so on. Despite this, the use of tax levers in the mechanism of personal income taxation was not effective enough.

2. The purpose of the article

The purpose of this article is to study the modern mechanism of personal income taxation in Ukraine and justify ways to improve its efficiency.

3. The results of the research

As an independent economic category, taxes have their own mechanism of action with its inherent special functions, methods, aspects, tools. The main elements of the tax mechanism, which form an idea of the content of the tax mechanism and its fundamental features, include are a taxpayer; the object of taxation; tax rate.

Additional elements of the legal mechanism of the tax, which are used to detail the specifics of a particular payment, include tax benefits; the subject, the base, unit of taxation; the source of tax payment; methods, terms and means of tax payment; features of the tax regime; budget or fund of tax receipt (collection); features of tax reporting.

Forming a special organizational and legal mechanism of relations with taxpayers, the state determines the main elements of this mechanism: the subject, object, forms, procedure and nature of the authorized bodies. Thus, the organizational and legal mechanism of taxation, including personal income taxation, is a system of interdependent elements, which ensures the proper behavior of taxpayers to pay taxes and fees, as well as research and establishing the basis for enforcement of tax deductions and the application of measures of responsibility for committing tax offenses.

In the current tax system of Ukraine in the taxation of individuals the central place is occupied by the personal income tax. One of the characteristic features is its significant social and economic significance, the scale of the number of payers of this tax, the size of total budget revenues. It is used in the tax systems of almost all countries. The personal income tax plays an important role in the financial regulation of the economy.

In the current tax system of Ukraine in the taxation of individuals the central place is occupied by the personal income tax. One of the characteristic features

is its significant socio-economic significance, the scale of the number of payers of this tax, the size of total budget revenues. It is used in the tax systems of almost all countries. The personal income tax plays an important role in the financial regulation of the economy.

Sources of income, according to the standard international classification, are six main sources of income: labor income; business income; investment income; property income; family assistance and transfers.

The object of personal income tax is income from various sources, the presence of which causes the taxpayer's tax liabilities.

The elements of the mechanism of personal income taxation are presented in Fig. 1.

The regulatory mechanism of this tax should be implemented through rate differentiation and preferential taxation. No other tax can provide such an impact on the subjects of distributive relations in society.

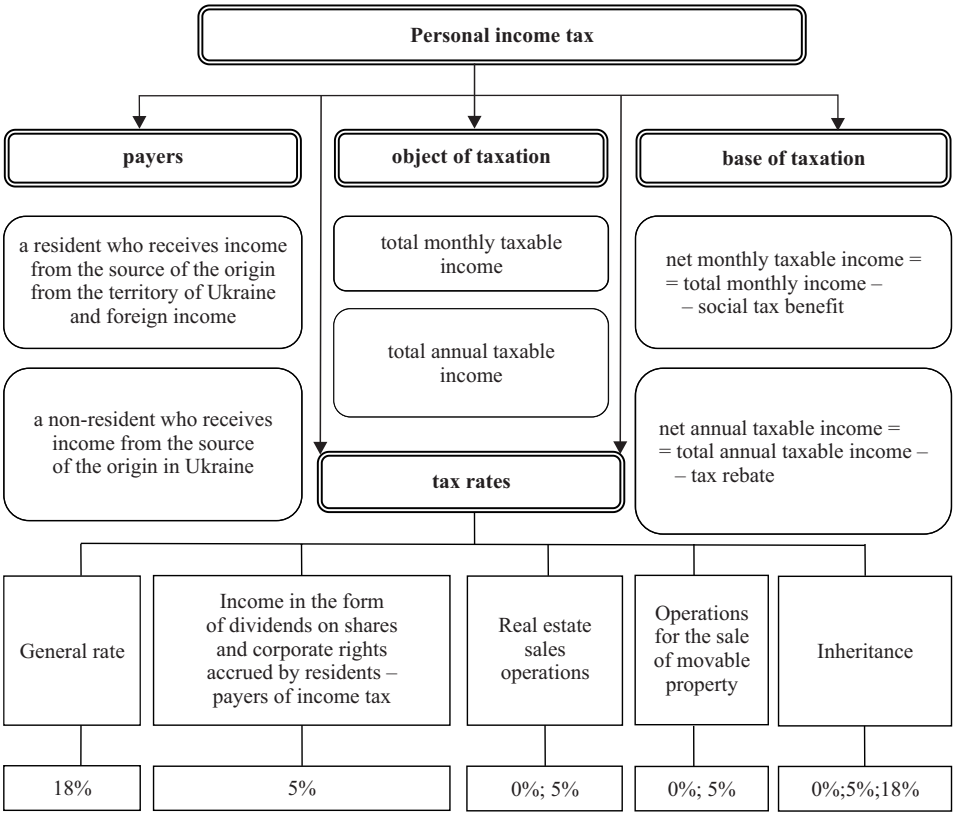


Fig. 1. Elements of the mechanism of personal income taxation

Source: Tax Code of Ukraine dated at 2.12.2010, no. 2755-IV.

Tax legislation provides for the inclusion of income from various sources in the personal income tax base, but in Ukraine it is mainly a payroll tax.

According to the provisions of the Tax Code of Ukraine, the basic rate of personal income tax is a rate of 18%, which applies to almost all major types of personal income (wages, incentives and compensation payments, payments under civil contracts, etc.). In Ukraine, wages make up the majority of the population's income and are sometimes the only source of income. Under such conditions, the application of proportional rates of personal income tax causes social injustice, which is manifested in the payment of taxes by different social groups in equal shares of income, regardless of their amounts. The European system of personal income taxation provides for the application of a progressive tax scale.

In particular, in Poland, the tax (PIT) depends on the amount of earnings. The higher the income, the higher the tax rate you have to pay. For income up to PLN 85,528 per year, a tax rate of 17% is applied (from October 1, 2019), and income in excess of PLN 85,528 per year is taxed at a rate of 32%. Income within 8,000 zlotys is not taxed [Banar 2019].

France also uses a progressive scale of personal income taxation: income up to 9964 euros is not taxed, income from 9965-27519 euros is taxed at a rate of 14%, from 27520-73779 euros – 30%, from 73780-156244 euros – 41%, 156245 euros and more – 45% [Tax rates in France for 2019].

The Tax Code of Ukraine provides for social tax benefits in the mechanism of personal income taxation. The size of the social tax benefit for personal income tax is presented in Fig. 2.

The marginal income that allows you to apply the social tax benefit in the current month is income that does not exceed the amount equal to the monthly subsistence level valid for able-bodied persons on January 1 of the reporting tax year (as of 1.01.2020 – UAH 2102), multiplied by 1.4 and rounded to the next 10 hryvnias (as of 1.01.2020, it is 2940 hryvnias).

European tax systems provide for social benefits for the family, not for individuals, which is not taken into account in Ukrainian tax law [Law of Ukraine on "On State budget of Ukraine 2020"].

For example, in Poland, the social benefit for children is calculated monthly and has the following threshold: for the first and second child – PLN 92.67 per month, for the third – PLN 166.67, for the fourth and each subsequent – PLN 225. It can be used by a couple whose total annual income does not exceed 112 thousand zlotys, or a parent or single mother who has an annual income of less than 56 thousand zlotys [Banar 2019].

The personal income tax retains the position of one of the most important sources of revenue for both the consolidated budget and local budgets of Ukraine. At the expense of revenues from personal income tax is formed more than half of the tax revenues of local budgets and more than 20% of tax revenues of the consolidated budget of Ukraine (Table 1).

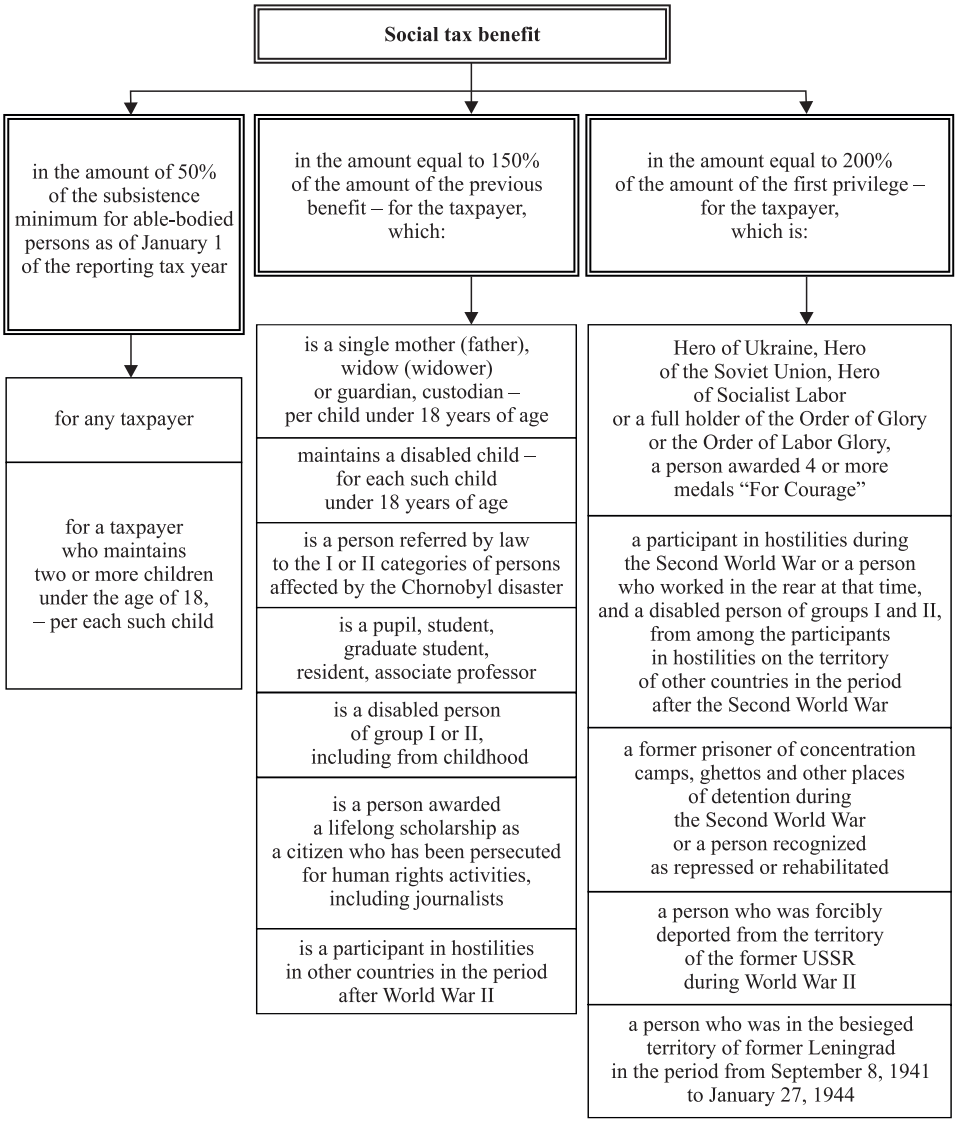


Fig. 2. The size of the social tax benefit for personal income tax

Source: Tax Code of Ukraine dated at 2.12.2010, no. 2755-IV.

The amount of income tax revenues is influenced by various factors, in particular: the number of employees, the size of their income, the size of tax rates and others.

The structure of personal income tax revenues in the Consolidated Budget of Ukraine is dominated by the tax paid by tax agents on the taxpayer's income in the form of wages (over 70.0%) (Table 2).

Table. 1. Dynamics of personal income tax revenues in the consolidated and local budgets of Ukraine for 2015-2019

Indexes	2015	2016	2017	2018	2019
Consolidated budget revenues, UAH billion	652.0	782.8	1016.9	1184.3	1289.8
Consolidated budget's tax revenues, UAH billion	507.6	650.8	828.2	986.3	1070.3
Personal income tax, UAH billion	100.0	138.8	185.7	229.9	275.5
In % to consolidated budget revenues	15.3	17.7	18.3	19.4	21.4
In % to consolidated budget's tax revenues	19.7	21.3	22.4	23.3	25.7
Local budget revenues, UAH billion	294.5	366.1	502.1	562.4	560.5
Local budget's tax revenues, UAH billion	98.2	146.9	201.0	232.5	270.5
Personal income tax, UAH billion	54.9	79.0	110.6	138.1	175.7
In % to local budget revenues	18.6	21.6	22.0	24.5	31.3
In % to local budget's tax revenues	55.9	53.8	55.0	59.4	64.9

Source: author's calculations on the base of the data available at State Treasury Service of Ukraine. Reporting.

Table. 2. Structure of personal income tax revenues by types of income to the Consolidated Budget of Ukraine in 2015-2019, %

No.	Indexes	2015	2016	2017	2018	2019
1.	Revenues of personal income tax (PIT), including:	100	100	100	100	100
2.	PIT paid by tax agents from the taxpayer's income in the form of wages	68.3	70.5	75.3	76.2	75.9
3.	Personal income tax paid by tax agents from the taxpayer's income in the form of wages and other payments received by servicemen and members of the rank and senior staff	4.7	5.9	5.2	5.1	5.6
4.	Personal income tax paid by tax agents from the income of the taxpayer other than wages	5.9	6.5	6.2	6.3	6.1
5.	Personal income tax paid by individuals based on the results of the annual declaration	2.1	2.2	2.0	2.0	2.3
6.	Personal income tax on income in the form of interest	8.2	5.5	3.2	2.3	2.0
7.	Personal income tax on other income	1.7	1.1	–	–	–
8.	Military collection	9.1	8.3	8.1	8.1	8.1

Source: author's calculations on the base of the data available at State Treasury Service of Ukraine. Reporting.

As a part of the personal income tax, the budget revenue includes a military tax (introduced in 2014 as a temporary means of filling the budget in emergency conditions), the share of which is more than 8.0% of total tax revenues.

In 2015-2019, the share of tax paid by tax agents on the taxpayer's income other than wages averaged 6.2%, and the share of income tax in the form of interest was 4.2%. Thus, the role of the tax on other incomes in filling the budget remains secondary, which indicates that the mechanism of personal income taxation cannot be considered sufficiently effective.

The amount of revenues to the personal income tax depends on a number of economic indicators, in particular: the average monthly wage, the number of employed people of working age, the unemployment rate. At present in Ukraine these indicators cannot be called satisfactory. In particular, despite the annual growth of the average salary, its level is much lower than in neighboring European countries. Thus, in Ukraine the average monthly salary in June 2020 was UAH 11,579, which is three times less than in Poland, Hungary and Slovakia[1]. Employment rates in Ukraine are also lower than in many European countries. At the end of 2019, this figure was 51.7% in Ukraine, 55.2% in Hungary, 56.3% in Slovakia, 59.2% in the Czech Republic, 60.0% in Germany, and 61.4% in Estonia. Compared to other European countries, Ukraine still has a high unemployment rate. At the end of 2019, the unemployment rate in Ukraine was 8.2%, while in the Czech Republic – 2.1%, Hungary – 3.5%, Slovakia – 5.9% [*Riven bezrobittya v Ukrayini zalyshayetsya odnym z nayvyshchykh v Yevropi*, 2020].

Today in Ukraine there are two systems of personal income taxation: ordinary (with the payment of personal income tax) and alternative (with the payment of a single tax). Private entrepreneurs have the right to choose the system and method of taxation of their income under the general system of taxation or a simplified system of taxation, accounting and reporting by paying a single tax.

Taxation of income of individuals received by a natural person – entrepreneur from economic activity is carried out in accordance with the Tax Code of Ukraine [dated 2.12.2010, no. 2755-IV].

The object of taxation is the net taxable income, ie the difference between the total taxable income (revenue in cash and in kind) and documented expenses related to the economic activity of such a natural person – entrepreneur.

Income of individuals – entrepreneurs, received during the calendar year from business activities, is taxed at a rate of 18%. Personal income tax – entrepreneurs is paid to the budget in advance payments, calculated and reflected in the tax return by the entrepreneur himself, each calendar quarter by the 20th day of the month following the calendar quarter. The final calculation of personal income

[1] Average wages in Ukraine https://index.minfin.com.ua/labour/salary/average/ [accessed: 5.10.2020].

tax for the reporting tax year is carried out by the taxpayer independently in accordance with the data specified in the annual tax return, taking into account the personal income tax paid during the year on the basis of documentary proof of payment.

The simplified system of personal income tax – entrepreneurs provides for the payment of a single tax. The mechanism of taxation of income of private entrepreneurs under the simplified taxation system is defined by the Tax Code of Ukraine in the framework of the state policy on the development and support of small business.

Simplified system of taxation, accounting and reporting – a special mechanism for collecting taxes and fees, which establishes the replacement of individual taxes and fees to pay a single tax in the manner and under the conditions specified by applicable law, while maintaining simplified accounting and reporting.

The main advantage of the simplified taxation system in Ukraine is that it creates the most favorable conditions for the tax regime for small businesses. The simplified system usually reduces the hassle in controlling bodies with the submission of reporting documents.

The simplified system of taxation, accounting and reporting provides for the division of individual entrepreneurs into three categories. Assignment of entrepreneurs to a certain group depends on the level of annual income, the number of employees and the type of its activity (Table 3).

The payment of the single tax goes directly to the local budget of the territorial community and determines the level of its financial capacity. Today, the simplified taxation system does not play an important role in shaping the revenue side of local budgets, despite the positive dynamics of the single tax in these budgets (Table 4).

Table 3. Distribution of natural persons – entrepreneurs, payers of the single tax

Indexes	Groups of single tax payers		
	I group	II group	III group
The amount of income	to 1 mln UAH	to 5 mln UAH	to 7 mln UAH
Number of employees	no employees	to 10 people	no limits
Types of activity	retail trade in the markets; provision of household services to the population	provision of services, including household services, to single tax payers and / or the population; production, sale of goods, activities in the restaurant business.	any activities other than those prohibited for single payers (paragraph 291.5, Article 291 of the TCU)
Tax rates	up to 10% of the subsistence level per month	up to 20% of the minimum wage per month	3% of income + VAT or 5% of income

Source: based on Tax Code of Ukraine dated at 2.12.2010, no. 2755-IV.

Table 4. Dynamics of the single tax revenues in local budgets of Ukraine in 2015-2019

Indexes	2015	2016	2017	2018	2019
Revenues of local budgets, UAH billion	294.5	366.1	502.1	562.4	560.3
Tax revenues, UAH billion	98.2	146.9	201.0	232.5	270.5
Single tax, UAH billion	11.0	17.2	23.4	29.,6	35.2
In % to budget income	3.7	4.7	4.7	5.3	6.3
In % to PN	11.2	11.7	11.6	12.7	13.0

Source: author's calculations on the base of the data available at State Treasury Service of Ukraine. Reporting.

The state of receipt of taxes on income of individuals – entrepreneurs in local budgets indicates a low level of entrepreneurial initiative of the population of Ukraine, due to the lack of effective economic and tax incentives from the state. This situation requires an immediate solution, including by improving the mechanism of taxation of income of private entrepreneurs.

4. Conclusions

The personal income tax plays a significant role in the formation of revenues of both the Consolidated Budget and local budgets of Ukraine, and also acts as the main regulator in the system of personal income regulation.

The mechanism of personal income taxation needs to be improved, taking into account the experience of European countries in introducing progressive tax rates, which will allow shifting the tax burden from low – income individuals to high – income earners and ensuring the principle of fair taxation. The preferential policy on personal income tax requires changes, taking into account the final income of the family, which will increase its social level.

In order to increase the efficiency of personal income taxation in Ukraine, it is necessary to increase the tax base by increasing the wages of employees, implementing policies to promote employment, improving the business climate, improving tax culture in the region and in the country as a whole.

References

Banar K., 2019, *Podatkova systema v Polshchi* [Tax system in Poland], https://uainkrakow.pl/podatkova-systema-v-polshchi/# [accessed: 5.10.2020].

Law of Ukraine on "On State budget of Ukraine 2020", https://zakon.rada.gov.ua/laws/show/294-20#Text2 [accessed: 5.10.2020].

Riven bezrobittya v Ukrayini zalyshayetsya odnym z nayvyshchykh v Yevropi, 2020, January 13, https://glavcom.ua/news/riven-bezrobittya-v-ukrajini-zalishajetsya-odnim-z-nayvishchih-v-jevropi-652289.html [accessed: 5.10.2020].

State Treasury Service of Ukraine. Reporting, https://www.treasury.gov.ua/ua/file-storage/vikonannya-derzhavnogo-byudzhetu [accessed: 5.10.2020]
The average salary in Ukraine, https://index.minfin.com.ua/labour/salary/average/ [accessed: 5.10.2020].
Tax Code of Ukraine dated at 2.12.2010, no. 2755-IV, https://zakon.rada.gov.ua/laws/show/2755-17#Text [accessed: 5.10.2020].
Tax rates in France for 2019. France Accountants – 2018, https://www.franceaccountants.com/tax#ourcharges_3 [accessed: 5.10.2020].

Mechanizm opodatkowania osób fizycznych i jego perspektywy na Ukrainie

Abstrakt*. W artykule dokonano analizy obecnego mechanizmu opodatkowania osób fizycznych na Ukrainie, badając wpływ poszczególnych jego elementów na łączne dochody z podatku dochodowego od osób fizycznych. Analiza wpływów z tytułu podatku dochodowego od osób fizycznych do skonsolidowanego budżetu państwa i budżetów samorządowych wskazuje, że najważniejszym źródłem dochodów pozostaje podatek dochodowy od osób fizycznych. Głównym źródłem dochodów pochodzących z podatku dochodowego od osób fizycznych są wynagrodzenia. Autor analizuje mechanizm opodatkowania osób fizycznych (przedsiębiorców) oraz wpływy podatkowe z tego tytułu trafiające do budżetów lokalnych i zwraca uwagę na wady tego mechanizmu. W związku z tym autor proponuje wprowadzenie progresywnych stawek podatkowych, które umożliwią przesunięcie ciężaru podatkowego z osób o niskich dochodach na osoby o wyższych dochodach.*

Słowa kluczowe*: podatki, dochody od osób fizycznych, podatek dochodowy od osób fizycznych, mechanizm podatkowy, administracja podatkowa, dochody podatkowe*

Zeszyty Naukowe
Wyższej Szkoły Bankowej w Poznaniu
2021, vol. 92, no. 1
DOI: 10.5604/01.3001.0014.9160

Olena Liahovska

State Institution "Institute of Regional Research
n.a. M.I. Dolishniy of the NAS of Ukraine" (Ukraine)
Department of Problems of Real Sector of Region Economy
orcid.org/0000-0003-4838-5619
email: skalecka.olena@ukr.net

Trends and prospects of developing the export potential of Ukraine's machine building industry

Abstract. *The purpose of the article is to analyse the current state of development of Ukraine's mechanical engineering, looking at export trends of mechanical engineering products across product groups and the main importing countries. The analysis indicates that Ukrainian exports of engineering products have declined significantly in recent years. The low export orientation of machine-building production is mainly due to the low level of innovation investment, as a result of which the technological development of Ukraine's machine building industry not aligned with the requirements of the global market. The author indicates directions of machine-building production that can make the Ukrainian industry more competitive in the future arguing that thanks to the current production capacity and technological skills, availability of the labour force, research institutions, opportunities for international cooperation, Ukraine is well-positioned to increase the export potential of the mechanical engineering industry.*

Keywords: *mechanical engineering, export potential, export orientation, geographical structure of exports, production capacity*

1. Formulation of the problem

Mechanical engineering is one of the most complex sectors of industry, which provides the technical part, mechanization, automation of production processes in all spheres of society and it is most sensitive to the development of science, technology and innovation. At the same time, mechanical engineering forms the production potential and provides the practical side of innovative progress in industry.

The main world exporters of machinery and transport equipment in recent years were the European Union (34.76% in 2019 against 34.34% in 2014), as well as China (18.45%), Germany 11.28%) and the United States. Ukrainian engineering products in world exports in 2019 amounted to only 0.08% (in 2014 – 0.12%). However, it should be noted that in Ukraine there are some areas of machine-building production, the development of which can have a positive impact on Ukraine's place in the world market. For example, the production of aircraft, spacecraft and related equipment, electrical and electronic equipment for vehicles, communication equipment, machinery and equipment for agriculture and others. In addition, given the increased investment in science, technology and innovation, our country has prospects to increase export of engineering products.

The study of trends in machine-building export from Ukraine will allow to draw conclusions about the current state of the machine-building industry of the country and to identify promising areas for the development of export potential of this type of industrial activity.

2. Literature review

The question of the development of mechanical engineering is quite broad and has been studied by many scientists around the world. In separate works the main tendencies of development of machine-building branch for recent years in comparison with other branches of economy are analyzed and the priority directions of development of machine-building complex of Ukraine [Husyeva, Yakovchuk 2017].] are substantiated, a number of problems of export activity is formed and prospects of foreign economic activity transformation of foreign economic development of Ukraine [Liahovska 2020; Yarosh-Dmytrenko 2017], substantiated the benefits of deep trade cooperation between the EU and Ukraine [Borowicz 2017: 143-153] and more. However, given the dynamic development of economic processes in Ukraine and the world, it is advisable to study current trends in the development of machine exports in Ukraine in more detail.

The purpose of the article is to identify prospects for the development of the export potential of the machine-building complex of Ukraine based on the results of a study of current trends in this sector of industry.

3. Main results of the study

The machine-building complex of Ukraine includes about 7304 enterprises (in 2019) which employ 343461 workers (15.23% of the total in industry), the

share of this industry sector in value added was about 3.41% (in 2018), and the share in the commodity structure – about 11.04% (in 2019).

In recent years, the production of mechanical engineering products in Ukraine has almost doubled (the volume of sold mechanical engineering products in 2014-2019 increased by 99.90%), in particular, all types of this production increased: more than 2.5 times the production of vehicles, trailers and semi-trailers (by 166.32%), twice – the production of machinery and equipment not included in other groups (machinery and equipment intended for mechanical or heat treatment of materials, or other operations) (by 109.70%), as well as, manufacture of other transport equipment (manufacture of vehicles, namely: ships and boats, trains and locomotives, aircraft and spacecraft, and parts for these vehicles) – by 82.83%, manufacture of computers, electronic and optical products – by 77.80%, production of electrical equipment – by 77.54%.

Along with this, positive trends in production were accompanied by a decrease in its export. During 2014-2019, export of all engineering groups decreased, except for export of ships, which increased by almost one and a half times during this period (Table 1). At the same time, it should be noted that the dynamics of machine-building export was uneven. For example, in the last year (2020) there

Table 1. The growth rate of export of machine-building products of Ukraine (%)

Commodity group (subgroup)	2015/ 2014	2016/ 2015	2017/ 2016	2018/ 2017	2019/ 2018	2020/ 2019	2020/ 2014
XVI. Machines, equipment and mechanisms; electrical equipment	–30.34	–7.69	17.56	8.84	–4.09	0.51	–20.68
84 nuclear reactors, boilers, machines	–34.11	–20.41	10.68	–0.22	–1.85	13.11	–35.70
85 electric machines	–26.15	4.92	22.73	14.97	–5.40	–7.19	–4.00
XVII. Land vehicles, aircraft, floating vehicles	–53.86	–18.19	12.64	6.94	31.82	–14.25	–48.61
86 railway locomotives	–74.88	12.79	–7.62	15.39	115.44	–23.34	–50.13
87 means of land transport, except rail	–40.08	–24.56	0.15	3.62	–0.70	–15.05	–60.43
88 aircraft	–22.59	–58.59	–63.23	110.31	14.93	16.79	–66.73
89 ships	9.30	4.25	129.68	–11.11	–40.36	8.07	49.94
XVIII. Optical and photographic devices and apparatus	–31.73	–8.08	4.05	–1.97	22.08	–10.31	–29.92
90 optical and photographic devices and apparatus	–31.99	–8.18	3.72	–2.02	22.33	–9.83	–29.99
91 watches	–1.95	–0.99	27.66	0.54	7.49	–41.69	–21.90
Total	1.57	–18.71	–2.47	12.32	–5.04	–8.05	–21.02

Source: based on data from SSSU 2020.

Table 2. Structure of export of engineering products of Ukraine (%)

Commodity group (subgroup)	2014	2015	2016	2017	2018	2019	2020
XVI. Machines, equipment and mechanisms; electrical equipment	76.86	82.48	83.85	84.63	85.06	80.77	83.00
84 nuclear reactors, boilers, machines	40.45	41.06	35.98	34.19	31.51	30.62	35.41
85 electric machines	36.41	41.42	47.86	50.43	53.55	50.15	47.59
XVII. Land vehicles, aircraft, floating vehicles	20.00	14.21	12.81	12.38	12.23	15.96	14.00
86 railway locomotives	11.40	4.41	5.48	4.35	4.63	9.88	7.74
87 means of land transport, except rail	3.98	3.68	3.05	2.63	2.51	2.47	2.15
88 aircraft	3.35	3.99	1.82	0.57	1.12	1.27	1.52
89 ships	1.27	2.14	2.45	4.84	3.97	2.34	2.59
XVIII. Optical and photographic devices and apparatus	3.14	3.31	3.35	2.99	2.71	3.27	3.00
90 optical and photographic devices and apparatus	3.12	3.27	3.30	2.94	2.66	3.22	2.97
91 watches	0.03	0.04	0.05	0.05	0.05	0.05	0.03
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: based on data from SSSU 2020.

was a positive growth rate of export of nuclear reactors, boilers and machinery (13.11%), aircraft (16.79%) and ships (8.08%).

The largest segment of Ukrainian machine export was machinery, equipment and machinery, electrical equipment (83.00% of machine export in 2020, compared to 76.86% in 2014) (Table 2).

In particular, Ukraine exports such goods of this group as electrical appliances, power lines, cables, communications, nuclear reactors, engines, agricultural machinery and equipment, and more. The export geography of this product group is very wide (exported to almost all countries) (in 2019) and diversified, for example, turbojet engines, turboprop and other gas turbines are exported to about 50 countries, most – to China (44.70%) and India (21.73%); insulated wires – to Poland (21.68%), Germany (21.67%) and Romania (12.86%). In this segment, the least diversified geography of export of nuclear reactors – about 99.71% of these products are exported to Russia, 0.29% – to Switzerland.

Export of land vehicles, aircraft and floating vehicles are less developed in Ukraine, and its share in the structure of exported machine-building products is declining (14.00% of exports of machine-building products in 2020, compared to 20.00% in 2014). Among the goods of this segment of mechanical engineering, the

most exported: parts to railway locomotives or motor cars of trams or rolling stock (in 2020 exported to about 50 countries, including 43.43% – to Russia, 22.88% – Belarus), wagons for freight transportation on tracks, non-self-propelled (exported to 10 countries, including the most to Belarus – 67.47% and Russia – 15.65%), vessels intended for the carriage of persons or goods (17 countries, including Russia – 22.23%, the Bahamas – 16.11%, Malta – 10.95%), parts of commercial aircraft (about 70 countries, including India – 36.69%, the United States – 35.98%), parts and devices of vehicles of commodity positions (in more than 70 countries, including Russia – 46.14%, Belarus – 16.05%, the Czech Republic – 7.61%).

Among optical and photographic devices, the largest volume was the export of devices for automatic regulation or control (exported to about 80 countries, including the Czech Republic (30.60%), Russia (14.67%, the Republic of Korea) (8.51%), controlling or measuring devices, profile projectors (about 100 countries, including Russia – 16.74%, Hungary – 9.72%, India – 8.97%), liquid crystal devices (about 40 countries, including Qatar 53, 95%, Belgium – 25.10%).

According to the structure of export, about 45% of mechanical engineering products were export of 5 types of goods (Table 3), other types of mechanical engineering products in 2019 were less than 2%. Therefore, it should be noted that the range of exported products is quite low. The basis of exported products are components for products manufactured in other countries. Thus, Ukraine becomes a supplier of raw materials for finished products, which are eventually imported to the Ukrainian market.

In 2014-2020, we can see a decrease in the coverage ratio for almost all product groups of mechanical engineering, except shipbuilding (the figure increased from 3.85 points in 2014 to 5.77 – in 2020; see Table 4). Export-oriented types of mechanical engineering include shipbuilding and production of railway locomotives.

Table 3. Goods with the largest share in the structure of machine exports (%)

Product group code	Product name	2014	2015	2016	2017	2018	2019
8544	Insulated wires, cables and other insulated electrical conductors; fiber optic cables	15.92	21.73	25.00	26.08	26.98	24.93
8607	Parts for railway locomotives or motor cars of trams or rolling stock	3.84	2.48	2.52	3.05	3.31	5.99
8516	Electric heating devices and apparatus; electric irons	1.40	1.92	3.16	4.86	5.42	5.58
8411	Turbojet engines, turboprop and other gas turbines	12.39	14.03	9.24	8.60	5.50	4.42
8517	Electric telephone or telegraph apparatus; videophones	1.06	2.42	3.30	4.67	5.59	4.23
	Total	34.60	42.58	43.22	47.26	46.81	45.15

Source: based on data from SFSU 2019.

Table 4. Import export coverage ratio

Commodity group (subgroup)	2014	2015	2016	2017	2018	2019	2020
Total engineering	0.61	0.56	0.38	0.34	0.31	0.27	0.29
XVI. Machines, equipment and mechanisms; electrical equipment	0.65	0.63	0.46	0.43	0.39	0.34	0.39
84 nuclear reactors, boilers, machines	0.61	0.55	0.33	0.30	0.27	0.25	0.32
85 electric machines	0.70	0.73	0.65	0.62	0.53	0.42	0.47
XVII. Land vehicles, aircraft, floating vehicles	0.56	0.39	0.19	0.15	0.15	0.14	0.13
86 railway locomotives	6.79	5.67	2.90	1.31	1.03	2.71	4.13
87 means of land transport, except rail	0.12	0.11	0.05	0.03	0.03	0.02	0.02
88 aircraft	5.00	3.47	1.56	1.01	0.95	0.45	0.72
89 ships	3.85	3.22	8.13	12.58	10.43	13.08	5.77
XVIII. Optical and photographic devices and apparatus	0.35	0.34	0.25	0.19	0.16	0.17	0.13
90 optical and photographic devices and apparatus	0.35	0.35	0.25	0.19	0.16	0.17	0.13
91 watches	0.13	0.19	0.18	0.19	0.16	0.19	0.13

Source: based on data from SSSU 2019.

Given the current trends, Ukrainian engineering needs to reform and change strategic directions of development in accordance with the requirements of time and available resources. It is worth noting the need to increase funding for innovation in mechanical engineering, as this sector of industry is the most sensitive to scientific and technological progress. As a result, all developed countries are increasing investment in innovation and technological progress, for example, in Germany from 2010 to 2018, the share of innovation spending in GDP increased by 0.40 points (from 2.73% in 2010 to 3.13% – in 2018), the average in the EU in 2018 compared to 2010 increased by 0.20 points (from 1.92% – in 2010, 2.12% – in 2018 [World Trade Organization, n.d.]. At the same time, the share of funding for PPP innovations in Ukraine decreased by 0.28 points (from 0.75% in 2010 to 0.47% in 2018), and this figure was the lowest compared to EU countries.

4. Conclusion

Today, the basis of Ukrainian engineering are enterprises with a stable tradition of production and established production capacity, but little attention is paid to the development of investments in new sectors of mechanical engineering for the Ukrainian market. Ukraine remains a country with a mediocre level of inno-

vation development and a country with a low level of stimulation (for example, according to the World Intellectual Property Organization, Ukraine ranked 45th in the Global Innovation Index (2018), according to the Global Finance rating according to the government readiness index introduction of artificial intelligence – in 57th place (2020) [AI Readiness Index 2020]). As a result, the development of mechanical engineering in Ukraine is uneven with the selective growth of export in those sectors whose products remain relevant to the world market.

In general, the main factor hindering the development of the export potential of Ukrainian engineering was production development – the obsolescence of production, low research and innovation, lack of development of large-scale production (along with low level of cooperation of enterprises of different stages), lack of production of all parts and components of large-scale production in Ukraine, etc.). As a result, Ukrainian products do not meet the requirements (certification and standardization) of the international market, a low range of competitive products, weak demand for certain engineering products, both domestically and externally.

In recent years, Ukraine›s economy has been negatively affected by political and economic factors (economic crisis, military action, political instability), which negatively affected the economic development of the country, investment attractiveness of industry, international cooperation (partially changed vectors of export-import cooperation) and others. Therefore, mechanical engineering, as one of the sectors most in need of investment in development, has had a negative impact on both production potential and the development of export potential.

At the same time, given the preserved production capacity and technological skills, the availability of labor potential, research institutions, opportunities for international cooperation, Ukraine has quite high opportunities to restore the export potential of mechanical engineering.

Today the most promising, in terms of export growth, are those industries that already have established production capacity in Ukraine, and demand for them on the world market is growing. For example, it is shipbuilding and production of aircraft (air and space), as well as related equipment, production of agricultural machinery and equipment, electrical and electronic equipment and more. At the same time, it is necessary to promote the improvement of investment attractiveness of the machine-building industry of Ukraine, to create innovative industries.

References

AI Readiness Index 2020. Oxford Insights, https://www.oxfordinsights.com/government-ai-readiness-index-2020 [accessed: 5.03.2021].

Borowicz A., 2017, Ukraine and the European Union. Trade benefits offered by deeper integration, in: E. Latoszek, M. Proczek, M. Dziembała, A. Masłoń-Oracz, A. Kłos (eds.), *European Security and Stability in a Complex Global Order – The Case of Neighbourhood Policy*,

Warsaw: Dom Wydawniczy Elipsa, pp. 143-153, http://www.cewse.pl/sites/default/files/European_Security_and_Stability_0.pdf [accessed: 5.03.2021] [in Polish].

Husyeva O.Yu., Yakovchuk A.M., 2017, Stan ta struktura mashynobudivnoyi haluzi Ukrayiny v umovakh hlobalnykh ekonomichnykh. *Ekonomika. Menedzhment. Biznes*, no. 4(22): 26-33 [in Ukrainian].

Liahovska O., 2020, Export of flour and flour-based products in Ukraine: trends and problems, *Zeszyty Naukowe Wyższej Szkoły Bankowej w Poznaniu* [The WSB University in Poznan Research Journal], 90(3): 55-61, https://doi.org/10.26349/ZN.WSB.W.POZNANIU.0090.04

SFSU, 2019, State Fiscal Service of Ukraine, Sumarnyy obsyah importu ta eksportu u rozrizi tovarnykh pozytsiy za kodamy ukrayins'koyi klasyfikatsiyi tovariv zovnishn'oekonomichnoyi diyal'nosti [Total volume of import and export by commodity positions by codes of Ukrainian classification of goods of foreign economic activity], http://sfs.gov.ua/ms/f11 [accessed: 5.03.2021] [in Ukrainian].

SSSU, 2020, State Statistics Service of Ukraine, Tovarna struktura zovnishn′oyi torhivli Ukrayiny [Commodity structure of Ukraine's foreign trade], Statistical Publication, www.ukrstat.gov.ua/operativ/operativ2020/zd/tsztt/tsztt_u/arh_tsztt2020_u.html [accessed: 5.03.2021] [in Ukrainian].

World Trade Organization. International Trade and Market, n.d., https://www.wto.org/english/res_e/statis_e/statis_bis_e.htm?solution=WTO&path=/Dashboards/MAPS&file=Map.wcdf&bookmarkState={%22impl%22:%22client%22,%22params%22:{%22langParam%22:%22en%22}} [accessed: 5.03.2021].

Yarosh-Dmytrenko L.O., 2017, Export activity of machine-building enterprises within transformation of Ukrainian foreign trade, *Naukovyy visnyk Polissya*, no. 3(11), 99-106 [in Ukrainian].

Trendy i perspektywy rozwoju potencjału eksportowego ukraińskiego przemysłu maszynowego

Streszczenie. *W artykule przeanalizowano aktualny stan rozwoju inżynierii mechanicznej na Ukrainie, biorąc pod uwagę tendencje w eksporcie wyrobów inżynierii mechanicznej według grup towarowych oraz główne kraje-importerów. Wyniki analizy wskazują, że eksport ukraińskich wyrobów inżynieryjnych znacznie spadł w ostatnich latach. Zdaniem autorki główną przyczyną niskiej orientacji eksportowej produkcji maszynowej jest niedopasowanie ukraińskiego przemysłu maszynowego do wymagań rynku światowego. W związku z tym wskazano kierunki produkcji maszynowej, które w przyszłości mogą zapewnić konkurencyjność ukraińskiego przemysłu maszynowego na świecie. Autorka uzasadnia, że dzięki obecnym mocom produkcyjnym i umiejętnościom technologicznym, dostępności siły roboczej, instytucjom badawczym oraz możliwościom współpracy międzynarodowej Ukraina ma duże możliwości zwiększenia potencjału eksportowego przemysłu maszynowego.*

Słowa kluczowe: *budowa maszyn, potencjał eksportowy, orientacja eksportowa, struktura geograficzna eksportu, moce produkcyjne*

Zeszyty Naukowe
Wyższej Szkoły Bankowej w Poznaniu
2021, vol. 92, no. 1
DOI: 10.5604/01.3001.0014.9161

Kateryna Antoniuk

Zaporizhzhya Polytechnic
National University (Ukraine)
Department of Marketing and Logistics
orcid.org/0000-0001-8568-5085
email: ekaterinaia@ukr.net

Anatoliy Mokiy

State Institution "Institute of Regional
Research n.a. M.I. Dolishniy of NAS
of Ukraine", Lviv (Ukraine)
Department of Regional Economic Policy
orcid.org/0000-0001-8455-1421
email: amokiy320@ukr.net

Dmytro Antoniuk

Zaporizhzhya National University (Ukraine)
Department of Entrepreneurship, Management and Logistics
orcid.org/0000-0003-2910-0497
email: oasdant@gmail.com

Ukraine's foreign trade with the EU from the perspective of consumption security

Abstract. *In the conditions of global and supra-regional competition, where customers are offered goods (services) that serve the same purpose but differ in quality, the problem of ensuring consumption security becomes increasingly relevant for Ukraine. On the one hand, it is a key factor that shapes demand, but on the other, it contributes to increasing the competitiveness of economic entities.*

Keywords: *consumption security, European integration, foreign trade, export, import*

1. Introduction

In the process of European integration, domestic enterprises must take into account and adhere to modern market conditions. With the accession of our country to the World Trade Organization (WTO), as well as with the signing of the Association Agreement between Ukraine and the EU [Uhoda pro asotsiatsiyu mizh Ukrayinoyu 2014], where standardization and certification are key in the model of economic regulation, the state has committed itself to adapting the

institutional framework to relevant requirements. This will eliminate technical barriers to trade, namely for free access to the domestic market of Ukraine of foreign products, which should increase the level of economic security and ensure the competitiveness of the national economy. At the same time, we consider the hypothesis of a threatening impact of European integration on security of consumption in Ukraine to be valid. Therefore, to identify threats and take into account negative trends in foreign trade, justify strategic priorities and a system of measures to minimize threats to consumer security and strengthen the competitiveness of the national economy, we will analyze bilateral cooperation between Ukraine and EU member states.

To do this, we use quantitative and qualitative indicators to assess trends in the volume and structure of trade between Ukraine and EU member states, dominant product groups, levels of concentration and specialization of foreign trade [Nakaz Ministerstva Ekonomichnoho Rozvytku i Torhivli Ukrayiny 2013; Vlasenko 2017]. The values of indicators are calculated on the basis of data from international organizations (UN, ITC, WTO) and the state statistics service on foreign economic and innovation activities after their rationing.

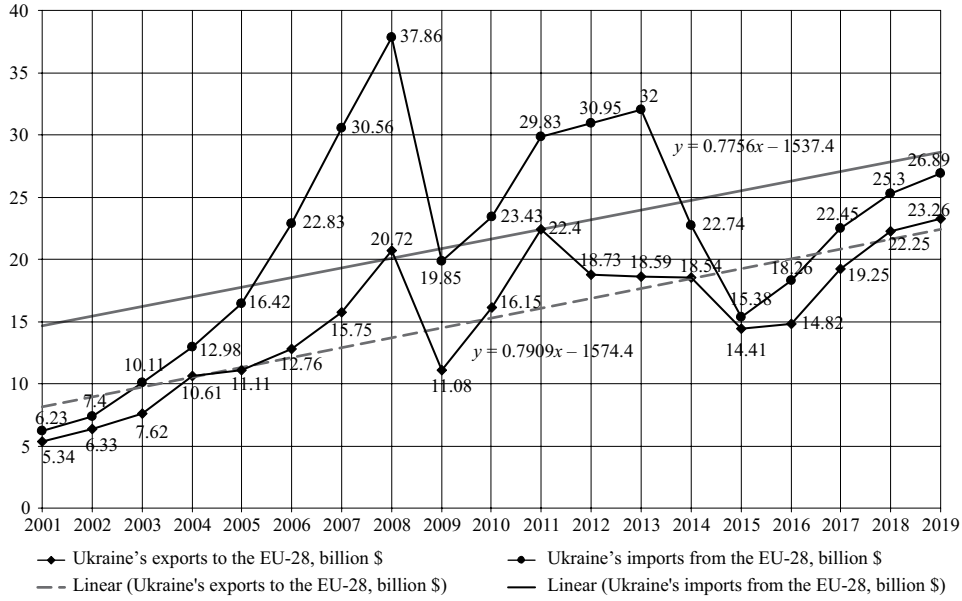
2. Results

2.1. Recent trends in foreign trade between Ukraine and the EU

In the geographical structure of foreign trade, the share of the EU is constantly growing (Fig. 1) – from 11.57 billion $ in 2001 (32.84% of total exports, 39.48% of total imports) to 50.15 billion $ in 2019 (46.41% of total exports, 52.65% of total imports) with declines in 2009 to 30.93 billion $ and in 2015 – up to 29.79 billion $, related to the economic crisis and military-political conflict with Russia. At the same time, the dynamics of development of trade relations between Ukraine and EU member states is not positive in terms of threats to economic security.

Throughout Ukraine's independence, the foreign trade balance with the EU has been negative, with imports rising particularly rapidly from 2005 ($ 16.42 billion) to 2008 ($ 37.86 billion) with a sharp falling in 2009 to 19.85 billion $, a gradual increase until 2013 (32 billion $) and a deep decline until 2015 (15.38 billion $). In 2015, the foreign trade balance reached a minimum value ($ 0.97 billion), and since then the EU has become the first importer of goods to Ukraine. The signing of the economic part of the Association Agreement between Ukraine and the EU in 2014 had a time-delayed effect, which began to manifest itself in 2016, which significantly increased the share of exports (40.76%) and imports (46.52%) of the EU in the structure of foreign trade against the background of

Fig. 1. Dynamics of foreign trade between Ukraine and the EU (2001-2019), billion $



Source: compiled by: Trade Map 2020; *Spivrobitnytstvo mizh Ukrainoiu ta krainamy ES v 2017. Statystychnyi zbirnyk*; *Spivrobitnytstvo mizh Ukrainoiu ta krainamy ES v 2019. Statystychnyi zbirnyk*.

falling foreign trade with Russia. As noted by L. Vlasenko [2017: 80], the negative balance of foreign trade has a negative impact on the economic security of the state, creates a deficit of foreign currency and increases the pressure on the national currency.

2.2. The structure of foreign trade between Ukraine and the EU

The main groups of Ukrainian exports were: base metals and articles thereof, vegetable products, machinery, equipment and mechanisms, electrical equipment, mineral products, fats and oils of animal or vegetable origin, finished foods.

Over the past four years, there has been a sharp increase in exports of plant products, mineral products and a significant decrease in exports of base metals and metal products (due to declining global demand for metals), equipment and machinery (probably due to reduced competitiveness of Ukrainian producers due to non-compliance with European directives or replacement by analogues, such as Chinese). This indicates the raw material nature of exports, foreign trade with the EU in goods with a low level of processing and low added value.

The commodity structure of imports from the EU includes: machinery, equipment and mechanisms, electrical equipment, products of chemical and related

industries, mineral products, polymeric materials, plastics and articles thereof, finished food products, everything else – in much smaller volumes. The structure of imports to Ukraine from the EU is more diversified due to the needs of Ukrainian consumers and the desire to buy better quality goods.

Significant exports of plant products, base metals and their products create opportunities for Ukraine to maximize the natural resource potential in the development of the agro-industrial sector and metallurgical industry, which causes negative consequences of cooperation. Thus, as of 2019, the main items of exports of metallurgical products to the EU were ferrous metals (3145.6 million $ or 82.85% of exports to the EU) and ferrous metal products (439.8 million $ or 11,58% of exports to the EU). The EU's interest in imports of ferrous metals poses significant threats to the environment in the long run, as metallurgical industries with insufficient manufacturability and environmental friendliness are key polluters. Regarding the export of plant products, there is a predominance of cereals (sunflower, corn, wheat), oil and fats, which also poses certain threats associated with depletion and damage to the soil [UkrAgroConsult 2020].

2.3. The export-import structure between Ukraine and the EU by main categories of CGCE

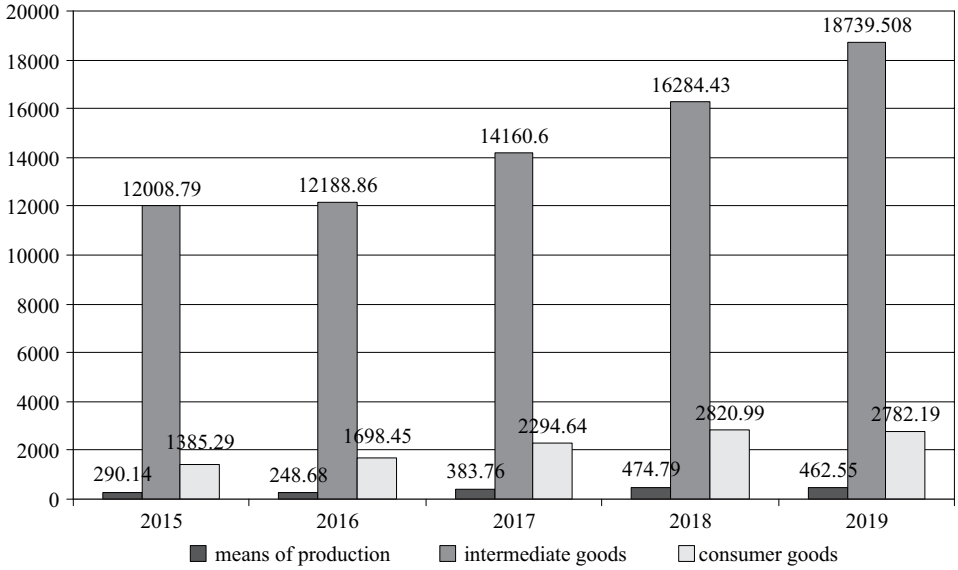
A significant threat to security of consumption is the filling of the market with European products of different quality with different degrees of processing, used as raw materials, means of production, intermediate or consumer goods. Their analysis will be based on the separation of groups of goods according to the Classifier of goods by consolidated economic groups (CGCE) UN [Official site of the United Nations Statistics Division on International Trade, 2020] and the method proposed by L. Vlasenko [2017: 89]. The share of means of production in the structure of exports of Ukrainian goods to EU countries over the past five years (Fig. 2) was at a very low level – about 2%, consumer goods – in the range of 6–12%, with dominance intermediate goods, the share of which increased every year.

The commodity structure of imports was dominated by intermediate (45% in 2019) and consumer goods (34.06% in 2019) with a fairly high level of supplies to Ukraine of means of production (about 20% in 2019), while in recent years there was a constant growth of each share (Fig. 3).

2.4. Changes in export-import volumes between Ukraine and the EU by level of manufacturability

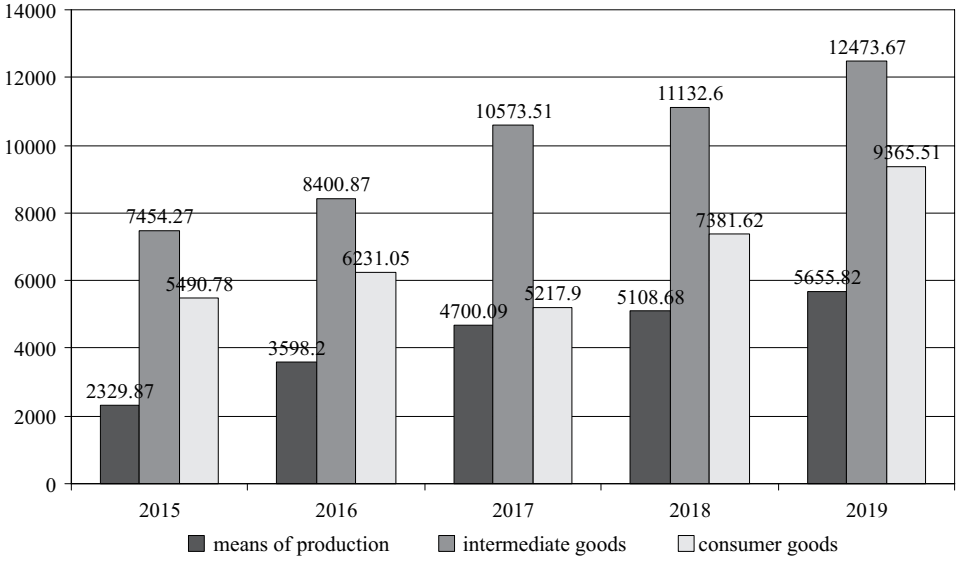
Considering the structure of foreign trade of Ukraine and the EU in 2019 by commodity groups CGCE, we note that: the largest negative balance was

Fig. 2. Dynamics of changes in the structure of exports of goods to EU member states by main categories of CGCE (2015-2019), mln. $



Source: compiled by Trade Map 2020.

Fig. 3. Dynamics of changes in the structure of imports of goods from EU member states by main categories of CGCE (2015-2019), mln. $

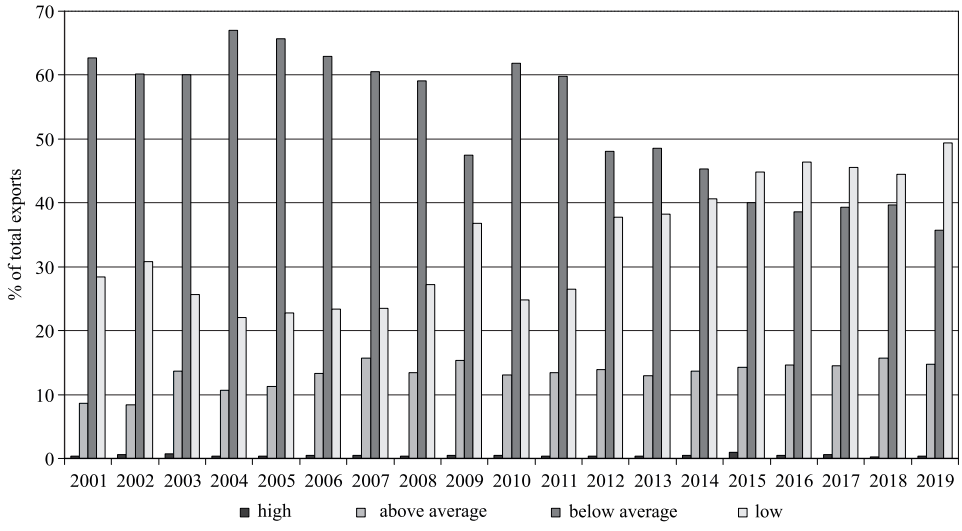


Source: compiled by Trade Map 2020.

achieved in trade in goods of 41 groups – capital equipment (except transport equipment) (–4233.95 million USD); the second position was occupied by goods of 42 groups of parts and devices for capital property (except for transport equipment) (–1498.99 million US dollars), followed by goods of 51 (cars) and 7 (other goods) groups.

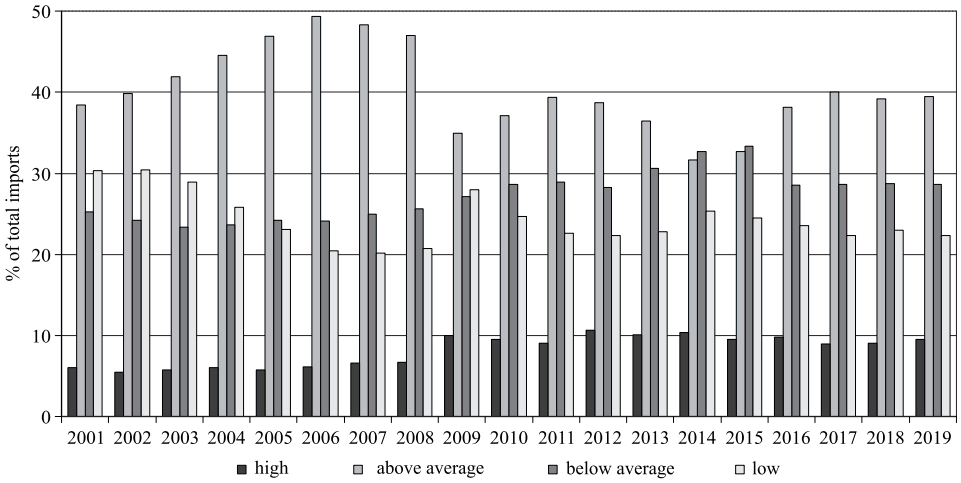
Significant indicators of imports from the EU in these groups emphasize the high competitiveness of European equipment, technological equipment, road transport, which has no alternative in Ukraine today. Analysis of the structure of foreign trade in goods between Ukraine and the EU in terms of technology confirms these conclusions. The general trade portfolio was decomposed and individual product groups were selected according to the criterion of manufacturability in accordance with the OECD methodology (low – the share of industry expenditures on R&D in production < 0.3%; below average – 1.0-2.9%; above average – 3,0-4.9%, high – more than 5.0%) [Vlasenko 2017: 91-92] shows the dominance in the structure of exports of products of low and below average level of manufacturability (Fig. 4). At the same time, until 2014, products with a level of manufacturability below the average prevailed, and starting from 2015, the structure of exports was dominated by raw materials. The share of products with a level of manufacturability above the average fluctuated for twenty years at the level of 8-16%. High-tech goods were exported to the EU in very limited volumes, accounting for 0.3-0.9% of total exports.

Fig. 4. Dynamics of change in the volume of exports of Ukrainian products to the EU by level of manufacturability (2001-2019),%



Source: compiled by Official site of the United Nations Statistics Division on International Trade, 2020.

Fig. 5. Dynamics of change in the volume of imports of products from the EU to Ukraine by level of manufacturability (2001-2019),%



Source: Cocpiled by Official site of the United Nations Statistics Division on International Trade, 2020.

At the same time, the structure of supplies of products from the EU to Ukraine (Fig. 5) for twenty years was dominated by goods with a level of manufacturability above average (35-50%) and below average (25-34%). In 2014 and 2015, goods with below-average manufacturability prevailed. At the same time, imports of high-tech goods remained at a fairly high level (6-11% of the total).

According to the technological component of trade with the EU, Ukraine acts mainly as an exporter of raw materials with low added value and an importer of technological finished products with higher added value. This situation, when exports are characterized by low technology, while imports are dominated by high-tech goods, leads to technological dependence on the EU and other countries and the deepening of structural imbalances in Ukraine's economy. Technological backwardness of domestic enterprises, inefficient institutional support of international cooperation poses serious threats to consumer security, in particular its scientific and technical component.

3. Conclusions

Positive changes in foreign trade between Ukraine and the EU, especially due to the signing of the Association Agreement, are accompanied by negative trends that threaten the economic security and security of consumption of Ukraine: (a)

the negative balance of foreign trade with the EU and the growth of European imports; (b) low level of export coverage of imports; (c) high share of high-tech products in the structure of imports and (d) high share of raw materials with a low level of manufacturability in the structure of exports. All these is harmful to the environmental and economic component of consumption safety.

The unpreparedness of enterprises for the openness of the domestic market, inexperience in products conformity and, consequently, its uncompetitiveness in foreign markets is a real threat to the economic security of both the state and individual businesses. To overcome it it is necessary to study the institutional basis, theoretical aspects, practical experience of declaring the conformity of products in the conditions of adaptation of the technical regulation system of Ukraine to the European model. In addition, technical restrictions in the form of technical regulation, sanitary and hygienic norms and standards of quality and safety, packaging and labeling rules contribute to increasing the welfare of the population through higher quality goods, which is a value for consumers and results in consumption safety.

References

Nakaz Ministerstva Ekonomichnoho Rozvytku i Torhivli Ukrayiny "Pro zatverdzhennya Metodychnykh rekomendatsiy shchodo rozrakhunku rivnya ekonomichnoyi bezpeky Ukrayiny" [Order of the Ministry of Economic Development "On approval of Methodical recommendations for calculating the level of economic security of Ukraine"] dated 29.10.2013 no. 1277 (2013), https://zakon.rada.gov.ua/rada/show/v1277731-13 [accessed: 12.01.2019] [In Ukrainian].

Official site of the United Nations Statistics Division on International Trade, 2020, https://comtrade.un.org/data [accessed: 27.06.2020].

Spivrobitnytstvo mizh Ukrainoiu ta krainamy ES v 2019. Statystychnyi zbirnyk, Kyiv 2020, [Cooperation between Ukraine and EU countries in 2019. Statistical collection], http://ukrstat.gov.ua/druk/publicat/kat_u/2020/zb/06/zb_ES_19_ue.pdf [accessed: 19.03.2020], [In Ukrainian].

Spivrobitnytstvo mizh Ukrainoiu ta krainamy ES v 2017. Statystychnyi zbirnyk, Kyiv 2018, [Cooperation between Ukraine and EU countries in 2017. Statistical collection], http://www.ukrstat.gov.ua/druk/publicat/kat_u/2018/zb/06/zb_ES_2017.pdf [accessed: 19.03.2020], [In Ukrainian].

Trade Map, 2020, https://www.trademap.org/ [accessed: 27.06.2020].

Uhoda pro asotsiatsiyu mizh Ukrayinoyu, z odniyeyi storony, ta Yevropeys′kym Soyuzom, Yevropeys′kym spivtovarystvom z atomnoyi enerhiyi i yikhnimy derzhavamy-chlenamy, z inshoyi storony, 2014, [Association Agreement between Ukraine, of the one part, and the European Union, the European Atomic Energy Community, and their Member States, of the other part], https://zakon.rada.gov.ua/laws/show/984_011/page#Text [accessed: 19.03.2020] [In Ukrainian].

UkrAgroConsult (2020), *Ukrayina krupnishyy v myri eksporter pidsolnechnoho masla*, http://www.ukragroconsult.com/ukragrokonsalt/novosti-temp/ukraina-krupneishii-v-mire-eksporter-podsolnechnogo-masla [accessed: 27.06.2020].

Vlasenko L.V., 2017, Stratehichni priorytety ta zasoby rozvytku zovnishn′otorhovel′nykh vidnosyn Ukrayiny z KNR v umovakh hlobalizatsiyi, Dysertatsiya na zdobuttya naukovoho stupenya kandydata ekonomichnykh nauk, Na pravakh rukopysu [Strategic priorities and means of

development of foreign trade relations of Ukraine with China in the context of globalization. Thesis for the degree of Candidate of Economic Sciences, On the rights of the manuscript], Zaporizhzhya 2017 [In Ukrainian].

Wymiana handlowa Ukrainy z UE z punktu widzenia bezpieczeństwa konsumpcji

Streszczenie. *W warunkach konkurencji globalnej i ponadregionalnej, gdzie na rynku oferowane są towary (usługi) służące temu samemu celowi, ale różniące się jakością, problem zapewnienia bezpieczeństwa konsumpcji staje się coraz bardziej istotny dla Ukrainy. Z jednej strony bezpieczeństwo konsumpcji to kluczowy czynnik kształtujący popyt, z drugiej zaś przyczynia się on do wzrostu konkurencyjności podmiotów gospodarczych.*

Słowa kluczowe: *bezpieczeństwo konsumpcyjne, integracja europejska, handel zagraniczny, eksport, import*

Zeszyty Naukowe
Wyższej Szkoły Bankowej w Poznaniu
2021, vol. 92, no. 1
DOI: 10.5604/01.3001.0014.9162

Mariana Melnyk

State Institution "Institute of Regional Research n.a. M.I. Dolishniy of NAS of Ukraine"
Lviv (Ukraine)
Department of Spatial Development
orcid.org/0000-0001-8869-8666
email: mar.melnyk@gmail.com

Iryna Leshchukh

State Institution "Institute of Regional Research n.a. M.I. Dolishniy of NAS of Ukraine"
Lviv (Ukraine)
Department of Spatial Development
orcid.org/0000-0002-3860-0728
email: ira_leschukh@ukr.net

Transformation of the economy of Ukrainian cities of regional significance: efficiency of the impact on the socio-economic development

Abstract. *The paper proposes a methodological approach to evaluating the impact of the transformation taking place in the economies of cities of regional significance (CRSs) on the socio-economic development of regions (oblasts). The analysis is conducted for cities of regional significance in the western part of Ukraine. The article emphasizes the asymmetry of regional socio-economic development as a result of the concentration of business activity and capital in the CRSs, a higher level of reception of growing direct foreign investment in the economies of CRSs compared to capital investment; a strong impact of structural changes in the economies of CRS on the Gross Regional Product (GRP). The authors found that the development of most CRSs was based on industrial production. Only half of the oblasts in Western Ukraine analyzed in the study showed evidence indicating that economies of their CRSs are undergoing a transformation towards service economy (which should correspond to the post-industrial development of the country).*

Keywords: *economic structure, city of regional significance, socio-economic development, regional economy, transformation of the economic structure*

1. Introduction

The theoretical and methodological foundations of economic structure transformation and the examination of the efficiency of its impact on the socio-economic development of the regions are the subject of research for a range of domestic and foreign scientists, including O. Amosha, A. Halchynskyi, Z. Varnaliy, V. Heyts, N. Hlavatska, M. Zveryakov, L. Fedulova; L. Abalkina, L. Lopatnikova, V. Mau, A. Ulyukayev, F. Hayek, J. Kornai, etc.

Meanwhile, the cities of regional significance are the powerful cores for the development of the surrounding areas (region), which simultaneously concentrate and generate the large-scale financial, economic, socio-cultural, material, human, informational, and other flows. Being, in fact, the largest cities in the country in both the territorial context and by the density of population, they constitute the place of income redistribution and accumulation and residence of the most wealthy share of the population in the region, the pole of authority, wealth, and, therefore, the overconsumption [Leshchukh 2020]. Yet, the research of the efficiency of the impact of the economic structure transformation in the cities of regional significance on the socio-economic development of a region is almost absent nowadays.

2. Research methodology

The structure of the economy as a complex system can be examined from the perspective of various approaches. Taking into account the available statistical information, we suggest that the efficiency of the economic structure transformation in cities of regional significance (CRS) in the context of its impact on the socio-economic development of the mentioned administrative units should be evaluated based on the methodological approach outlined in Fig. 1.

Transformation of the economic structure in the cities of regional significance in the context of the efficiency of its impact on the socio-economic development of a region will be analyzed on the example of the cities of regional significance of Western Ukraine.

3. Research results

The quality, speed, and intensity of structural transformations of the economy in the CRSs of Western Ukraine, according to **the first stage** of the suggested methodological approach (Fig. 1), were analyzed by the authors in the previous studies, including [Melnyk (ed.) 2020]. Thus, the following two types of administrative units under research are allocated depending on the economic structure of the cities of regional significance in the base period and intensity of structural changes in it in the period under research:

1) cities of regional significance that have preserved the economic structure profile;

2) cities of regional significance that diversify the economic structure. The latter, in particular, include

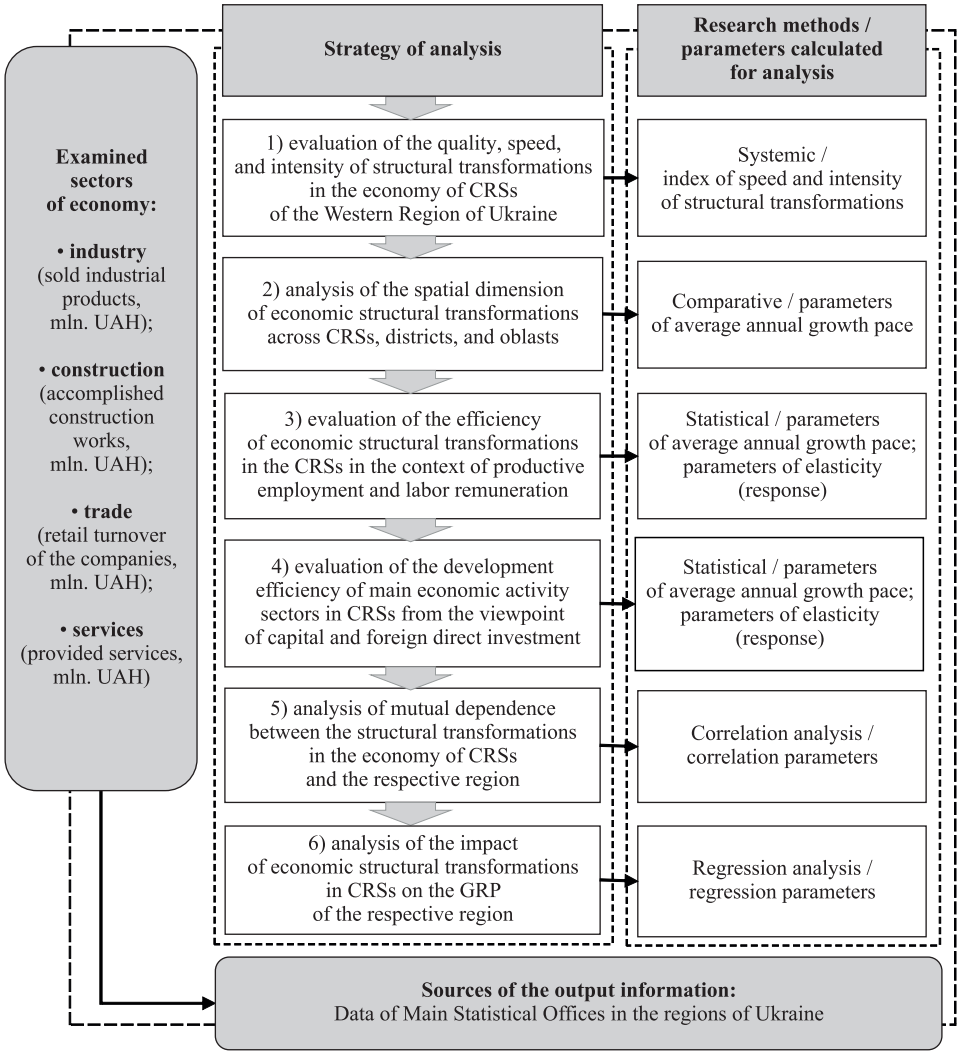


Fig. 1. Methodological approach to evaluation of the efficiency of the impact of economic structure transformation in the cities of regional significance on the socio-economic development of a region

Source: developed by the authors.

a) cities of regional significance – industrial centers that have diversified their activity through the development of the service economy;

b) cities of regional significance that have transformed the economic structure towards the industry development;

c) cities of regional significance that have increased the economic capacity only in a certain sector of economic activity, despite the poly-profile nature of economic structure in the base period;

d) other cities of regional significance, including those that have changed the economic activity vector towards the development of adjoining sectors.

The spatial dimension of structural economic transformations across CRSs, districts, and oblasts evaluated based on the calculation of average annual growth paces in main sectors of economic activity in 2012-2018 (according to **the second stage** of the authors' methodological approach) shows the positive dynamics of the change of the parameters under research in the Western Region (Table 1).

Table 1. Table 1. Average annual growth paces of main economic activity sectors of the administrative units in Western Ukraine in 2012-2018, %

Administrative units		Sold industrial products	Retail turnover of companies	Provided services	Accomplished construction works
Lvivska	cities	120.3	116.0	119.6	163.4
	districts	119.2	107.9	120.3	153.8
	oblast	119.8	114.1	119.6	159.8
Volynska	cities	120.2	108.8	119.9	119.9
	districts	123.3	107.7	124.9	124.9
	oblast	121.2	108.2	120.8	120.8
Ternopilska	cities	125.4	109.8	125.9	124.0
	districts	118.9	101.6	108.7	96.8
	oblast	121.7	107.2	121.9	117.6
Ivano-Frankivska	cities	137.3	113.3	123.7	127.4
	districts	117.0	106.4	113.3	112.3
	oblast	129.6	111.4	121.9	121.1
Chernivetska	cities	120.8	110.5	146.8	109.0
	districts	130.3	104.9	138.3	103.6
	oblast	124.0	108.8	145.7	106.6
Zakarpatska	cities	120.8	112.5	118.3	128.5
	districts	117.9	107.8	133.3	134.3
	oblast	118.6	110.4	124.7	130.1
Rivnenska	cities	115.5	111.6	120.2	109.9
	districts	123.4	106.4	115.8	130.1
	oblast	118.2	109.9	119.2	108.9

Source: calculated by the authors based on the data of Main Statistical Offices in the respective oblasts of Ukraine (based on replies to public requests).

The results of the analysis presented in the Table 1 indicate the higher average annual growth paces in main sectors of economic activity in CRSs compared to the district and oblast parameters.

Economy of the administrative units in the period under research was characterized by higher average annual growth pace in construction compared to other sectors and regions under research. The growth, among other things, was secured by growing foreign direct and capital investment in construction of the oblast (103.5% and 221.6% in 2018 against 2012, respectively).

In general, the conducted research shows that administrative units have been developing in unison (i.e. the same sectors have demonstrated high average annual growth paces in CRSs and in districts) in most oblasts under research (namely, in Lvivska, Ivano-Frankivska, Chernivetska, and Zakarpatska oblasts). It shows the positive center-periphery interactions and growing areas of the CRS impact. Meanwhile, in Ternopilska oblast, the services sector has been developing faster in the CRSs and industry in the districts; in Rivnenska oblast – services sector and construction, respectively. The trend is positive from the viewpoint of an opportunity to form balanced spatial development through transferring the industrial production and construction outside the CRSs.

To evaluate the efficiency of structural economic transformations of the CRSs in Western Ukraine in the context of productive employment and labor remuneration (according to **the third stage** of the authors' methodological approach) we will use the formulas:

$$C_i^E = \frac{\Delta E_i}{\Delta EAS_i}; \quad C_i^W = \frac{\Delta W_i}{\Delta EAS_i}, \tag{1}$$

where:

C_i^E, C_i^W – coefficients of elasticity of the pace one parameter changes against the other one in the *i* CRS in the analyzed period;

ΔE_i – pace of change of average number of regular employees in the *i* CRS in the analyzed period;

ΔW_i – pace of change of nominal wages of regular employees in the *i* CRS in the analyzed period;

ΔEAS_i – pace of change of the volume of sold products (works, services) in a certain economic activity sector in the *i* CRS in the analyzed period.

The results of evaluation presented in the Table 2 show a slight growth of employment and average monthly nominal wages of regular employees against the pace of change of sold products volume (goods, services) across economic sectors in the cities of regional significance in Western Ukraine

The coefficient C_i^E was ≥ 1 by the volume of accomplished construction works in Drohobych, Novovolynsk, Berezhany, and Kremenets, by the volume

Table 2. Elasticity of the growth of employment and average monthly nominal wages of regular employees against the pace of change of sold products volume (goods, services) across economic sectors in the cities of regional significance in Western Ukraine, 2012-2018

Cities of regional significance	Parameters							
	industry		trade		services		construction	
	$\Delta E/\Delta SIP$	$\Delta W/\Delta SIP$	$\Delta E/\Delta RT$	$\Delta W/\Delta RT$	$\Delta E/\Delta PS$	$\Delta W/\Delta PS$	$\Delta E/\Delta ACW$	$\Delta W/\Delta ACW$
Lvivska oblast								
Lviv	0.808	0.998	0.841	1.039	0.811	1.002	0.584	0.722
Boryslav	0.727	0.894	0.83	1.020	0.764	0.939	–	–
Drohobych	0.852	1.066	0.848	1.060	0.757	0.947	1.03	1.288
Morshyn	0.825	1.058	0.793	1.018	0.888	1.139	–	–
Novyi Rozdil	0.715	0.916	0.827	1.059	0.680	0.871	0.626	0.802
Sambir	0.787	1.016	0.838	1.081	0.670	0.865	0.85	1.097
Stryi	0.883	1.125	0.805	1.026	0.705	0.899	0.384	0.489
Truskavets	0.813	1.060	0.86	1.121	0.848	1.105	0.353	0.461
Chervohohrad	0.821	1.033	0.883	1.111	0.847	1.066	0.779	0.981
Total, cities of oblast	0.810	1.010	0.84	1.048	0.815	1.016	0.597	0.744
Volynska oblast								
Lutsk	0.817	0.982	0.903	1.086	0.813	0.978	0.510	0.613
Violodymyr-Volynskyi	0.832	1.096	0.862	1.136	0.734	0.968	0.980	1.291
Kovel	0.790	0.993	0.935	1.175	0.752	0.945	0.681	0.855
Novovolynsk	0.790	0.998	0.827	1.044	0.706	0.892	1.013	1.28
Total, cities of oblast	0.818	1.000	0.901	1.102	0.818	1.000	0.551	0.673
Ternopilska oblast								
Ternopil	0.783	0.971	0.904	1.121	0.788	0.977	0.790	0.979
Berezhany	0.926	1.331	1.244	1.788	0.872	1.254	1.534	2.205
Kremenets	–	–	0.885	1.214	0.757	1.038	1.266	1.736
Chortkiv	–	–	0.813	1.087	0.453	0.606	–	–
Total, cities of oblast	0.805	1.251	0.92	1.429	0.802	1.247	0.815	1.266
Ivano-Frankivska oblast								
Ivano-Frankivsk	0.828	1.018	0.884	1.087	0.799	0.982	0.769	0.945
Bolehiv	0.989	1.226	0.729	0.903	0.664	0.823	0.541	0.671
Burshtyn	0.801	0.983	0.842	1.034	0.806	0.99	0.484	0.594
Kalush	0.279	0.353	0.887	1.123	0.768	0.973	0.908	1.150
Kolomyya	0.220	0.278	0.827	1.044	0.915	1.155	0.910	1.148
Yaremche	0.065	0.082	0.842	1.056	0.753	0.944	–	–
Total, cities of oblast	0.726	0.927	0.880	1.124	0.806	1.029	0.783	0.999
Chernivetska oblast								
Chernivtsi	0.815	1.018	0.892	1.113	0.672	0.839	0.884	1.104
Novodnistrovsk	0.889	1.098	0.953	1.178	0.679	0.840	0.955	1.181
Total, cities of oblast	0.817	1.045	0.893	1.142	0.672	0.860	0.905	1.158

Table 2 – cont.

Cities of regional significance	Parameters							
	industry		trade		services		construction	
	$\Delta E/\Delta SIP$	$\Delta W/\Delta SIP$	$\Delta E/\Delta RT$	$\Delta W/\Delta RT$	$\Delta E/\Delta PS$	$\Delta W/\Delta PS$	$\Delta E/\Delta ACW$	$\Delta W/\Delta ACW$
Zakarpatska oblast								
Uzhorod	0.705	0.903	0.864	1.107	0.831	1.066	0.683	0.875
Berehove	0.821	1.113	0.84	1.139	0.754	1.022	–	–
Mukacheve	0.886	1.151	0.85	1.104	0.794	1.032	0.729	0.948
Hust	0.751	0.965	0.867	1.113	0.825	1.059	0.825	1.059
Chop	0.686	0.959	0.862	1.207	0.748	1.046	–	–
Total, cities of oblast	0.804	1.032	0.862	1.108	0.821	1.054	0.755	0.97
Rivnenska oblast								
Rivne	0.852	1.051	0.869	1.072	0.809	0.998	0.927	1.144
Dubno	0.805	0.988	0.82	1.007	0.641	0.788	0.865	1.063
Varash	0.819	0.998	0.827	1.008	1.013	1.234	0.671	0.818
Ostroh	0.941	1.108	0.848	0.998	0.511	0.602	0.373	0.439
Total, cities of oblast	0.837	1.027	0.867	1.063	0.805	0.987	0.880	1.079

ΔSIP – pace of change of the volume of sold industrial product.
ΔRT – pace of change of the volume of retail turnover of trade companies.
ΔPS – pace of change of the volume of provided services.
ΔACW – pace of change of the volume of accomplished construction works.

Source: calculated by the authors based on the data of Main Statistical Offices in the respective oblasts of Ukraine (based on replies to public requests).

of retail turnover of companies – only in Berezhany, and by the volume of provided services – only in Varash.

Therefore, the growing volumes of sold goods (accomplished works, provided services) in absolute numbers observed in CRSs of the Western Region in 2018 against 2012 were not accompanied by a growing average number of regular employees. It can be explained:

– **firstly**, by the fact that the volumes of sold products are growing each year in actual prices in national currency, yet calculated in U.S. dollars, the growth isn't that substantial (Novyi Rozdil, Sambir). Moreover, in some cases, the decline was recorded compared to 2012 (Boryslav, Drohobych, Lviv, Morshyn, Stryi, Truskavets, Chervonohrad). Therefore, actual fall in production can be observed, thus causing the growing unemployment [Melnyk (ed.) 2020];

– **secondly**, the growing volumes of capital investment in 2012-2018 improved the technical level of companies in economic sectors under research due to the introduction of new technology, including the resource-saving ones, thus releasing some share of regular employees;

– **thirdly**, by informal employment in the economy. According to the State Statistical Service [Derzhavna sluzhba statystyky Ukrayiny, 2019], the level of informal employment in urban settlements of Ukraine had increased in 2018 compared to 2012 by 2.6 p.p. and amounted to 14.2% of the total number of the employed population. Meanwhile, in the period under research, informal employment was the highest in trade and construction. In general, informal employment in Ukraine amounted to 21.6% of the total number of the employed population (–1.3 p.p. compared to 2012). Across regions, the rate was the highest in Rivnenska oblast – 53.5%. The substantial level of informal employment was peculiar to Ivano-Frankivska (43.6%) and Ternopilska oblasts (30.3%).

Trade development in the CRSs of Western Ukraine positively impacts the growth of average monthly nominal wages of regular employees in trade. The respective elasticity coefficient was ≥ 1 in all cities under research, excluding Bolehiv and Ostroh. Meanwhile, among all analyzed economic sectors in Ternopil, Kovel, and Burshtyn, the growth of wages against the growth of the retail turnover of companies was positive only in trade.

The investment component is one of the conditions of efficient socio-economic development. The development efficiency of main economic sectors in CRSs of Western Ukraine from the viewpoint of attracting domestic and foreign investment (according to **the fourth stage** of the authors' methodological approach) will be evaluated based on the calculation of elasticity of growth paces in main economic sectors of CRSs against the capital and foreign direct investment in 2012-2018. To this end, the following formulas will be used:

$$C_i^{CI} = \frac{\Delta EAS_i}{\Delta CI_i}; \quad C_i^{FDI} = \frac{\Delta EAS_i}{\Delta FDI_i}, \tag{2}$$

where:

C_i^{CI}, C_i^{FDI} – coefficients of elasticity of the pace of change of one parameter against the other in the *i* CRS in the analyzed period;

ΔEAS_i – pace of change of the volume of sold goods (works, services) in a certain economic sector in the *i* CRS in the analyzed period;

ΔCI_i – pace of change of the volume of capital investment in the *i* CRS in the analyzed period;

ΔFDI_i – pace of change of the volume of foreign direct investment in the *i* CRS in the analyzed period.

The results of the conducted analysis (Table 3) testify to the higher sensitivity of economic sectors under research in the CRSs of Western Ukraine to the growth of foreign direct investment compared to the capital investment.

The attraction of capital and foreign direct investment was the most efficient in the industry. The most dynamic growth of the volume of sold industrial products was in Yaremche, Kolomyya, and Kalush. It is understandable from

Table 3. Elasticity of growth paces in main economic sectors of CRSs to the volumes of capital and foreign direct investment, 2012-2018

Cities of regional significance	Parameters							
	industry		trade		services		construction	
	$\Delta SIP/\Delta CI$	$\Delta SIP/\Delta FDI$	$\Delta RT/\Delta CI$	$\Delta RT/\Delta FDI$	$\Delta PS/\Delta CI$	$\Delta PS/\Delta FDI$	$\Delta ACW/\Delta CI$	$\Delta ACW/\Delta FDI$
Lvivska oblast								
Lviv	1.061	1.336	1.020	1.284	1.058	1.331	1.469	1.849
Boryslav	1.088	1.558	0.953	1.365	1.036	1.483	–	–
Drohobych	0.984	1.190	0.990	1.197	1.108	1.339	0.815	0.985
Morshyn	0.901	–	0.936	–	0.836	–	–	–
Novyi Rozdil	0.880	1.378	0.761	1.192	0.925	1.449	1.004	1.573
Sambir	0.970	1.238	0.911	1.163	1.139	1.453	0.899	1.147
Stryi	0.905	1.099	0.993	1.206	1.133	1.376	2.083	2.530
Truskavets	1.133	1.101	1.072	1.042	1.087	1.056	2.610	2.535
Chervohohrad	1.069	1.138	0.994	1.058	1.036	1.102	1.126	1.199
Total, cities of oblast	1.059	1.312	1.021	1.265	1.052	1.304	*	*
Volynska oblast								
Lutsk	1.124	1.390	1.017	1.257	1.130	1.396	1.801	2.227
Violodymyr-Volynskyi	0.952	1.485	0.919	1.433	1.079	1.683	0.808	1.261
Kovel	0.98	1.187	0.828	1.003	1.030	1.246	1.138	1.378
Novovolynsk	0.364	1.087	0.347	1.039	0.407	1.217	0.284	0.848
Total, cities of oblast	1.027	1.254	0.932	1.138	1.027	1.254	1.526	1.863
Ternopilska oblast								
Ternopil	0.998	1.288	0.865	1.115	0.992	1.280	0.990	1.277
Berezhany	0.687	1.125	0.512	0.838	0.73	1.195	0.415	0.679
Kremenets	–	–	0.743	1.121	0.869	1.310	0.519	0.783
Chortkiv	–	–	1.082	1.282	1.940	2.300	–	–
Total, cities of oblast	*	*	0.873	1.107	1.001	1.269	0.986	1.249
Ivano-Frankivska oblast								
Ivano-Frankivsk	1.028	0.992	0.963	0.929	1.065	1.028	1.107	1.068
Bolehiv	0.768	0.833	1.043	1.131	1.145	1.242	1.404	1.523
Burshtyn	1.174	–	1.116	–	1.166	–	1.942	–
Kalush	3.425	3.547	1.076	1.114	1.243	1.287	1.051	1.088
Kolomyya	3.809	4.543	1.013	1.208	0.916	1.092	0.921	1.099
Yaremche	12.093	4.885	0.936	0.378	1.047	0.423	–	–
Total, cities of oblast	1.228	1.259	1.013	1.038	1.106	1.133	1.139	*
Chernivetska oblast								
Chernivtsi	1.023	1.262	0.935	1.154	1.241	1.532	0.943	1.164
Novodnistrovsk	0.954	–	0.889	–	1.247	–	0.887	–
Total, cities of oblast	1.022	*	0.935	*	1.242	*	0.922	*

Table 3 – cont.

Cities of regional significance	Parameters							
	industry		trade		services		construction	
	$\Delta SIP/\Delta CI$	$\Delta SIP/\Delta FDI$	$\Delta RT/\Delta CI$	$\Delta RT/\Delta FDI$	$\Delta PS/\Delta CI$	$\Delta PS/\Delta FDI$	$\Delta ACW/\Delta CI$	$\Delta ACW/\Delta FDI$
Zakarpatska oblast								
Uzhorod	1.262	1.399	1.029	1.141	1.069	1.185	1.302	1.443
Berehove	0.852	1.182	0.832	1.154	0.927	1.286	–	–
Mukacheve	0.914	1.293	0.953	1.349	1.02	1.443	1.111	1.571
Hust	1.111	1.379	0.962	1.195	1.012	1.256	1.011	1.256
Chop	1.058	1.267	0.841	1.008	0.971	1.162	–	–
Total, cities of oblast	1.047	1.285	0.976	1.198	1.026	1.258	1.114	*
Rivnenska oblast								
Rivne	1.006	1.225	0.986	1.201	1.059	1.29	0.924	1.126
Dubno	0.498	1.417	0.489	1.391	0.625	1.778	0.463	1.318
Varash	0.731	–	0.724	–	0.591	–	0.892	–
Ostroh	0.776	–	0.862	–	1.428	–	1.958	–
Total, cities of oblast	0.988	*	0.955	*	1.028	*	0.94	*

ΔCI – pace of change of the volume of capital investment.

ΔFDI – pace of change of the volume of foreign direct investment.

* The column was not calculated because a substantial share of information was classified by the respective parameters.

Source: calculated by the authors based on the data of Main Statistical Offices in the respective oblasts of Ukraine (based on replies to public requests).

the viewpoint of the economic profile of the mentioned cities (Yaremche is the tourism center; Kolomyya – the industrial and tourism center; Kalush – the industrial center).

The interdependence of structural economic transformations in CRSs and respective region (in accordance with **the fifth stage** of the authors' methodological approach) will be analyzed by calculation of the correlation-regression dependences between the development parameters of economic sectors under research in CRSs and respective regional parameters in the examined period (on the example of Lvivska oblast, Table 4).

Table 4 shows that coefficients of correlation between the development parameters in the main economic sectors of CRSs and the same parameters in a region are high (over 0.99 points). It indicates the substantial impact of the cities' economic development on the dynamics of regional development. Meanwhile, Lviv as a center of business activity and capital concentration impacts the transformation of economic structure in Lvivska oblast the most among the CRSs under research.

Table 4. Role of development of main economic activity sectors in CRSs in the economy of Lvivska oblast, 2012-2018

Parameters	Coefficients of correlation by the parameters			
	sold industrial products	retail turnover of companies	provided services	accomplished construction works
Districts/region	0.9994	0.8848	0.9738	0.9989
CRS/region, in particular	0.9997	0.9966	0.9979	0.9997
Lviv/region	0.9967	0.9960	0.9932	0.9992
Boryslav/region	0.6765	0.9927	0.9392	0.4081
Drohobych/region	0.9696	0.9961	0.9868	*
Morshyn/region	0.9579	0.9944	0.6656	*
Novyi Rozdil/ region	0.9643	0.9923	0.8893	0.8826
Sambir/region	0.9107	0.9673	0.6474	0.1695
Stryi/region	0.9652	0.9886	0.7239	0.9590
Truskavets/region	0.9253	0.9655	0.8514	0.8308
Chervohohrad/ region	0.9702	0.9336	0.9248	0.8980

* The column was not calculated because a substantial share of information was classified by the respective parameters.

Source: calculated by the authors based on the data of Main Statistical Offices in the respective oblasts of Ukraine (based on replies to public requests).

Yet, regarding the industry, the availability of a substantial number of respective companies in CRSs threatens to deteriorate the quality of the environment in them. Thus, whereas the density of pollutant emissions from stationary sources per 1 sq. km. in 2018 was 15.3 tons in Sokalskyi district, in Chervonohrad it amounted to 664.7 tons, in Stryiskyi district – 6.7 tons, in Stryi – 34.8 tons, in Morshyn – 16.3 tons. Taking into account the abovementioned, the dispersion of business activity in space and relocation of some share of industrial production outside large cities are quite relevant. In addition to improving the environmental condition in CRSs, it will secure the boosted socio-economic development at the periphery.

Correlation analysis presented in Table 4 shows some centrifugal-zonal development nature of services and construction sectors (i.e. the level of impact of these sectors' development in CRSs on the respective regional parameters is somewhat falling with the growing distance of a CRS from the oblast center – Lviv). Meanwhile, if such nature of service sector development is less threatening (it only complicates the access of the region's residents to a broad range of services, while the basic services (healthcare, education, social care, etc.) remain accessible), the high concentration of the construction sector in a CRS:

– imposes a load on its housing economy, transport, and social infrastructure (hospitals, schools, kindergartens, etc.). There were only three times more engineering constructions built in 2018 against 2012 compared to 4.7 times more residential buildings and 3.4 times more non-residential ones;

– causes the growth in workforce supply in CRSs (labor market becomes over-saturated), which subsequently leads to the staff shortage at the periphery.

According to the **sixth stage** of the authors' methodological approach, we will carry out the regression analysis of the impact of structural economic transformations in CRSs on the GRP of Lvivska oblast in 2012-2018 based on the initial data from Table 5 (for the research we will use the logarithmic values of the parameters of main economic sectors).

The results of the regression analysis indicate a strong direct connection between the GRP in Lvivska oblast and independent variables that characterize structural transformations in the economy of CRSs in the region (R = 0.997). The coefficient of determination shows that the change in the GRP of Lvivska oblast by 99.4% is caused by the change in the structure of the economy in the CRSs of the region. The statistical error is 1.8%.

Table 5. Initial data for the regression analysis of the impact of structural economic transformations in CRSs on the GRP of Lvivska oblast, 2012-2017

Years	GRP of Lvivska oblast, mln. UAH (y)	CRSs in Lvivska oblast		
		Sold industrial products, mln. UAH (x_1)	Retail turnover of companies, mln. UAH (x_2)	Provided services, mln. UAH (x_3)
Actual values				
2012	61962	19341.9	14674.4	11307.2
2013	63329	19845.5	14745.6	11237.9
2014	72923	21755.8	17518.6	14743.5
2015	94690	30048.0	21596.3	23142.8
2016	114842	38462.2	25973.4	20048.6
2017	147404	46821.1	29040.4	25169.6
Logarithmic values				
2012	4.792	4.286	4.167	4.053
2013	4.802	4.298	4.169	4.051
2014	4.863	4.338	4.244	4.169
2015	4.976	4.478	4.334	4.364
2016	5.060	4.585	4.415	4.302
2017	5.169	4.670	4.463	4.401

Source: calculated by the authors based on the data of Main Statistical Offices in the respective oblasts of Ukraine (based on replies to public requests).

The regression equation generated in the course of the research is the following:

$$y = 0.76x_1 + 0.16x_2 + 0.05x_3 + 0.63, \quad (3)$$

where:

y – the GRP in the region, mln. UAH,

x_1 – sold industrial products in the CRSs of the region, mln. UAH;

x_2 – retail turnover of companies in the CRSs of the region, mln. UAH;

x_3 – provided services in the CRSs of the region, mln. UAH.

The regression equation shows that the volume of sold industrial products has the strongest impact on the forming of GRP in Lvivska oblast among the economic sectors under research. It is understandable from the viewpoint of the structure-forming role of the industry in forming of GVA in the region (in particular, in 2017, the share of industry in the GVA structure of Lvivska oblast was 22.9%, which was 5 p.p. more than in 2012).

The sector of services in the CRSs under research had the least impact on the change of GRP in Lvivska oblast. The increase of the volume of services provided in CRSs by 1% had secured the growth in the volume of GRP in the oblast only by 0.05% due to falling share of the services sector in the economic structure of the CRSs in the region in the period under research by 5.3 p.p. (from 78.7% in 2012 to 73.4% in 2018).

4. Conclusion

Testing of the authors' methodological approach to evaluation of the efficiency of the impact the economic structure transformation in the cities of regional significance has on their socio-economic development on the example of the cities of regional significance of the Western region has contributed to emphasizing the asymmetry of regional socio-economic development caused by the concentration of the business activity and capital in CRSs (which is displayed, in particular, in higher average annual growth paces of the CRSs' economy compared to the districts and respective oblasts in general); monocentricity of the development of CRSs with prevailing industrial production in most of them; slight elasticity of the pace of change of main economic activity sectors in CRSs of the Western region to average number of regular employees; higher sensitivity of CRSs' economy to growing foreign direct investment compared to capital investment; high level of the impact of structural changes in the CRSs' economy on the GRP. The fact that the structure of the economy in only half of CRSs in the Western region has transformed towards the development of the service economy, which ought to have corresponded to the post-industrial development of the country, is emphasized.

References

Derzhavna sluzhba statystyky Ukrayiny, 2019, Ekonomichna aktyvnist naselennya Ukrayiny 2018, Statystychnyy zbirnyk, Kyyiv, http://www.ukrstat.gov.ua/druk/publicat/kat_u/2019/zb/07/zb_EAN_2018.pdf [accessed: 8.10.2020] [in Ukrainian].

Leshchukh I., 2020, Tsentr-peryferiya: determinatsiya sfer vzayemodiyi oblasnoho tsentru ta rayoniv oblasti, *Efektyvna ekonomika*, vol. 6. http://www.economy.nayka.com.ua/?op=1&z=7948 [accessed: 8.10.2020], DOI: 10.32702/2307-2105-2020.6.57 [in Ukrainian].

Melnyk M.I. (ed.), 2020, *Strukturna transformatsiya ekonomiky mist Zakhidnoho rehionu Ukrayiny: peredumovy, chynnyky ta osoblyvosti: naukova dopovid*, Lviv: NAN Ukrayiny. DU "Instytut rehionalnykh doslidzhen imeni M. I. Dolishnoho NAN Ukrayiny" [in Ukrainian].

Transformacja struktury gospodarki miast o znaczeniu regionalnym: efektywność oddziaływania na rozwój społeczno-gospodarczy

Streszczenie. *W artykule zaproponowano podejście do oceny wpływu przemian struktury gospodarki miast o znaczeniu regionalnym na rozwój społeczno-gospodarczy regionu (obwodu). Analizę oparto na przykładzie miast o znaczeniu regionalnym na Zachodniej Ukrainie. W artykule zwrócono uwagę na asymetrię rozwoju społeczno-gospodarczego obwodów wynikającą z koncentracji działalności gospodarczej i kapitału w miastach o znaczeniu regionalnym; większy stopień wykorzystywania wzrostu bezpośrednich inwestycji zagranicznych przez gospodarki miast o znaczeniu regionalnym w porównaniu do inwestycji kapitałowych; znaczny wpływ zmian strukturalnych w gospodarce miast o znaczeniu regionalnym na wielkość produktu regionalnego brutto (PRB). Nastąpił rozwój miast o znaczeniu regionalnym z przewagą produkcji przemysłowej w większości z nich. Jednocześnie przekształcenie struktury gospodarczej miast o znaczeniu regionalnym na Zachodniej Ukrainie w kierunku rozwoju gospodarki usługowej (która powinna odpowiadać post-industrialnemu rozwojowi kraju) miało miejsce tylko w połowie badanych obwodów.*

Słowa kluczowe: *struktura gospodarcza, miasto o znaczeniu regionalnym, rozwój społeczno-gospodarczy, gospodarka regionalna, przemiany struktury gospodarczej*

Zeszyty Naukowe
Wyższej Szkoły Bankowej w Poznaniu
2021, vol. 92, no. 1
DOI: 10.5604/01.3001.0014.9163

Iryna Leshchukh

State Institution "Institute of Regional Research
n.a. M.I. Dolishniy of NAS of Ukraine" Lviv (Ukraine)
Department of Spatial Development
orcid.org/0000-0002-3860-0728
email: ira_leschukh@ukr.net

Characteristics and the level of shadow economic activity undertaken by Ukrainian financial services companies

Abstract. *The article describes a proposed approach to assessing the level of informal activity conducted by enterprises in Ukraine's sector of financial services. The author analyses hidden, informal and illegal activities of financial services enterprises, taking into account how these activities affect the efficiency of exploiting its potential to ensure the country's socio-economic growth and highlighting priority measures that need to be taken in order to create conditions for an efficient operation of financial services enterprises within the legal framework.*

Keywords: *shadow economy, shadow business, enterprise, financial services sector, banking services*

1. Introduction

The 2025 Financial Sector Development Strategy of Ukraine establishes the five strategic goals, the achievement of which is the priority of the Ukrainian financial sector's functioning in the next five years: achieving financial stability, securing macroeconomic development, financial inclusion, financial markets development, and innovative development. However, the shadow economy as the ground of fraudulent entrepreneurship, corruption, organized crime, etc. remains to be one of the most significant threats to the development of the financial sector in Ukraine. Yet the directions of public policy in systemic de-shadowing of the financial sector were provided neither in the previous Strategy (till 2020) nor in the current one (till 2025). Therefore, the research of preconditions and level

of shadow economic activity of the financial services companies in general and across regions is quite urgent to develop efficient de-shadowing mechanisms, search for the illegally removed assets and return them to the legal turnover, protect the property, provide financial-economic security, and improve the country's competitiveness in general.

2. Research methodology

The studies available in the domestic scientific literature on the shadow economy cover its scales and impact on socio-economic processes in general, i.e. the evaluation is conducted for the country's economy in general, while there is little research across sectors and types of activity, etc.

The methodology of calculation of the shadow economy level by enterprises' losses suggested by the Methodological Recommendations of the Shadow Economy Level Calculation approved by the Decree of the Ministry of Economy of Ukraine (now the Ministry of Economy, Trade and Agriculture Development of Ukraine) no. 123 as of 18 February 2009 is about the only approach that helps to estimate the shadow economy level across the types of economic activity (based on available and accessible statistical data) [Nakaz minekonomiky vid 18.02.2009 no. 123]. Moreover, the advantages of the method are that it is relatively easy to implement and that it covers an important aspect of the economic system – production.

Based on the mentioned Methodology, the level of shadow economic activity of the financial services companies in Ukraine is calculated by the formula (P_{SEi}):

$$P_{SE_i} = \frac{P_{SE\min} - P_{SE\max}}{2}, \tag{1}$$

where:

P_{SE_i} – level of shadow economic activity of the financial services companies in the i year;

$P_{SE\min}$ – ultimate minimum level of shadow economic activity of the financial services companies in the i year;

$P_{SE\max}$ – ultimate maximum level of shadow economic activity of the financial services companies in the i year.

The calculation of the ultimate maximum level of shadow economic activity of the financial services companies in the i year ($P_{SE\min}$) takes into account the following [Nakaz minekonomiky vid 18.02.2009 no. 123]:

Hypothesis 1: all loss-making companies are in fact the profit-making ones according to official statistical data, which is considered the overestimation of shadow economy volumes. Profitability of the loss-making companies is equal to the profitability of profit-making companies in the period under research;

Hypothesis 2: the ratio of expenses of profit-making and loss-making companies and the ratio of the number of such companies are identical.

Therefore:

$$P_{SE_{\min}} = \frac{P_{PE} \times R_{L/P} + L_{LE}}{VA} \times 100\%, \quad (2)$$

where:

P_{PE} – profit of the profit-making companies of the financial services sector in the i year, mln UAH;

$R_{L/P}$ – ratio of the number of loss-making and profit-making companies of the financial services sector in the i year;

L_{LE} – losses of the loss-making companies of the financial services sector in the the i year, mln UAH;

VA – added value of the financial services sector in the i year, mln UAH.

In this respect, taking into account the mentioned assumptions, the numerator of the formula (2) characterizes the volumes of shadow profit of financial services companies in the i year (mln. UAH).

The ultimate maximum level of the shadow economy in the financial services sector in the i year ($P_{SE_{\max}}$) is calculated based on an assumption that all profit-making companies show in their reports only the unbiased data, while all loss-making companies conceal the total volume of the added value of their products rather than only the income. Therefore:

$$P_{SE_{\max}} = \frac{n_{lm}}{n_{pm} + n_{lm}} \times 100\%, \quad (3)$$

where:

n_{lm} – number of loss-making companies in the financial services sector in the i year;

n_{pm} – number of profit-making companies in the financial services sector in the i year.

3. The main results of the study

Fig. 1 shows the results of calculations of the shadow economic activity level of the enterprises in the financial services sector (excluding the banks) made according to the methodology presented above.

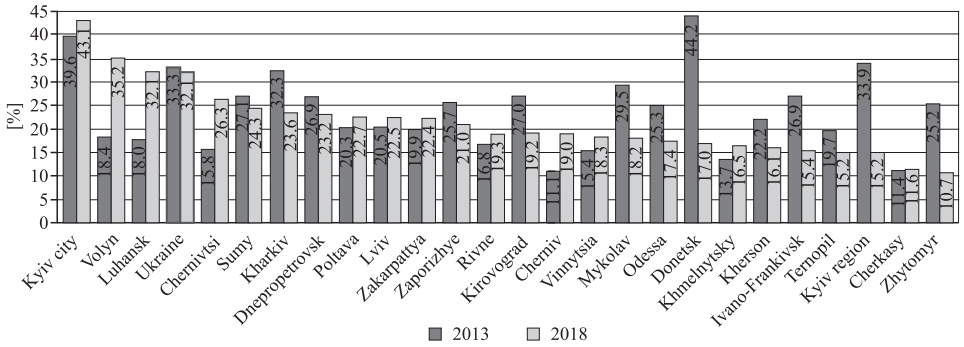


Fig. 1. Level of shadow economic activity of the enterprises in the financial services sector (excluding the banks) in Ukrainian regions in 2013 and 2018

Source: developed by the author.

Therefore, according to our calculations, the level of shadow economic activity of the enterprises in the financial services sector (excluding the banks) in Ukraine in 2018 was 32.1% of the GVA in the sector under research, having reduced by 1.2 p.p since 2013.

The differentiation of the shadow economy level in the financial services sector has increased by 1.8. points in the period under research (5.8 points in 2018 against 3.9 points in 2013).

Among Ukrainian regions, in the base year, the highest level of shadow economic activity of the financial services sector's companies was in Donetska oblast (44.2%) and in Kyiv (39.6%), while in the reporting period – in Kyiv (43.1%) and Volynska oblast (35.2%).

Substantial reduction of the shadow economic activity level of the financial services sector's companies (excluding the banks) in 2018 against 2013 was peculiar to Donetska oblast (from 44.2% down to 17%). Indeed, the volume of the shadow income per financial services sector's company has substantially decreased in the region in the period under research (from 7 mln. UAH down to 0.7 mln. UAH[1]) against the background of slight growth of the ratio of loss-making and profit-making enterprises in the financial sector (0.07 points).

The highest volume of the shadow income per financial services sector's company was recorded in Kyiv. Indeed, in 2018, the rate had grown since 2013 a bit more than twice and amounted to 10.3 mln. UAH[2]. Therefore, the shadow

[1] Calculated by the author on the basis of Methodical recommendations for calculating the level of the shadow economy, approved by the Ministry of Economy of Ukraine.

[2] Calculated by the author on the basis of Methodical recommendations for calculating the level of the shadow economy, approved by the Ministry of Economy of Ukraine.

economy level in the sector under research (excluding the banks) had increased by 3.5 p.p. – from 39.6% to 43.1%.

In general, the shadow activity of the enterprises of the financial services sector can be roughly divided into three types:

1) concealed – legal economic activity that is concealed or understated to avoid taxation;

2) informal – activity that is not registered, therefore, not subject to taxation;

3) illegal – activity prohibited by law (conversion, embezzlement of property, or its acquisition by abuse of authority; bribery, obtaining an unlawful benefit, etc).

Avoiding taxation, i.e. the deliberate concealing/understating of income from conducting business, is about the most important component of shadow economic activity of the financial services sector's companies. According to the analysts of Kyiv International Sociology Institute [*Tinova ekonomika v Ukrayini. Rezultaty doslidzhennya 2019 roku*], in 2018, the general rate for Ukrainian companies was 56.7% of the overall shadow economy volumes. Therefore, the growing level of the latter is considerably formed in conditions of the growing number of loss-making companies (coefficient of correlation $R = 0.904$)[3] and/or the reducing number of profit-making companies (coefficient of correlation $R = –0.904$)[4].

The high tax burden on the companies of the legal financial services sector stipulates their disadvantageous position from the economic point of view compared to the companies that use "shadow schemes" in their activity. Due to avoiding taxation, the activity of these companies can be of higher profitability compared to the legal sector companies. As a result, they can have temporary benefits in capital and labor force distribution [*Tendentsiyi tin'ovoyi ekonomiky v Ukrayini – 2015 rik*].

Avoiding taxation by insurance companies when real existing companies-beneficiaries transfer the non-cash funds for the supposedly provided insurance and reinsurance services to the accounts of the transit insurance companies, which, in turn, transfer the funds to the accounts of bogus insurance companies controlled by the participants of the "conversion" center is one of the most typical schemes on the insurance services market. Further, the funds are cashed, including through the accounts of straw individuals [*Serhiy Bilan rozpoviv…* 2016].

It is worth emphasizing that, according to the analysts, the growing tax burden and amount of social security contributions are the reasons for transferring the business into the shadow in 52% of cases in the developed countries [Pichuhina, Chorna 2015].

---

[3] Calculated by the author.

[4] Calcualted by the author.

The entities of *informal activity in financial sector* can include, for example, the wage workers forced to undertake activity that is not registered and conceal additional income, in particular due to high load on labor remuneration fund. Therefore, the activity is significantly related to shadow activity on the labor market in general as a primary link of the shadow economy. Indeed, according to the data [*Nezadeklarovana pratsya v Ukrayini…* 2018], in 2016, the financial services sector had the following trends:

– share of employees payed less than 50% of working hours was 4.3% (–13 p.p. compared to 2015);

– share of employees payed less than the minimum wages was 2.5% (+1.3 p.p. compared to 2015);

– share of employees payed about the minimum wages was 2.7% (–0.4 p.p. compared to 2015).

Therefore, the analysts [*Nezadeklarovana pratsya v Ukrayini…* 2018] assume that in 2016, 9.5% of financial sector employees (–12.1 p.p. compared to 2015) possibly worked over 50% of working hours and received some part of wages "in the envelope", i.e. they declared their work only partially.

Households that transfer certain funds and other material benefits between them through unofficial (informal) channels are also the entities of informal activity in the financial services sector. Mostly, the operations are related to temporary or permanent migration of population and are carried out by the households from abroad in favor of domestic households. Thus, whereas in 2010, 26.3% ($ 777 million)[5] of private money transfers came to Ukraine through informal channels, in 2018 the rate was 48.9%, and in 2019 – 49.7% ($ 5436 million and $ 5977 million respectively)[6].

Illegal (unlawful) activity in the financial sector. The economic paradox of Ukrainian realities lies in the fact that illegal (unlawful) activity is the component of ordinary entrepreneurship activity in the financial sector. Moreover, there is a symbiosis of shadow activity with authorities in the mentioned sector. Thus, according to the State Financial Monitoring Service of Ukraine [Derzhavna Sluzhba Finansovoho Monitorynhu Ukrayiny. Pidsumky roboty za 2013 rik], in 2018, out of 420 cases on unlawful financial operations related to the activity of "conversion" centers and enterprises with the features of bogusness involved in legalization (laundering) of income received by criminal means, public officials of various ranks were the targets of investigations by 53.6% of cases, 18.6% – government officials, and 6.7% – members of Parliament.

[5] In 2010, the substantial share of private transfers to Ukraine was carried out through the banks' corresponding accounts (50.5%) and international payment systems (36.2%).

[6] Calculated by the author based on data Statistics of foreign sector of Ukraine according to the methodology of the 6th edition of the «Balance of Payments and International Investment Position Manual», https://bank.gov.ua/files/ES/Perekaz_y.pdf [accessed: 8.10.2020] [in Ukrainian].

In 2017-2019, the substantial share of crimes in the financial services sector was committed by the companies of the group 64.9 "Providing other financial services excluding insurance and pension" (Table 1). It includes, in particular, the companies that provide services related to the allocation of funds (excluding granting of loans) – factoring services, swap arrangements, option contracts, and other hedging transactions.

The statistics on committed crimes by the companies of the group 64.3 "Trusts, funds, and similar financial entities" in 2016 is interesting. Thus, if the mentioned companies committed only 0.5% of crimes of the total number of crimes in the sector of financial and insurance activity, the share of financial damage caused by the crimes was 40.4% (UAH 70.8 million) of the total financial damage caused by the crimes in the sector under research. In this context, the founding of an investment firm (trust association, pension fund, insurance company, etc.) by criminal groups by the principles of a Ponzi scheme with the further abstraction of depositors' funds is the most common shadow financial operation.

A substantial share of crimes in the financial services sector accounted for the companies of the group 64.1 "Monetary intermediation"– from 22.2% in 2016 to 35.2% in 2019. The share of financial damage caused by the crimes accounted for 2.6% of the total financial damage caused by the crimes in the sector under research in 2016 and had grown up to 22.8% in 2018 (in 2019 – 1.8%).

The significant share of crimes in the sector of monetary intermediation in the period under research was committed by commercial and saving banks as well as credit unions (category 64.19 "Other types of monetary intermediation"). In 2019, it accounted for 78.5% of the total crimes committed in monetary intermediation, while in 2018 – 80.3%.

Outdated (inefficient) system of analysis of information on suspicious financial operations, inadequate detection and authorization of suspicious financial operations of national public officials, inadequate detection and inadequate elimination of the factors of shadow and offshoring activity of the financial system, high cash turnover, and outflow of financial capital from the country are among the most threatening problems of the domestic financial services sector from the viewpoint of promoting the *activity of the transit-conversion groups (the so-called "conversion" centers) and companies with features of bogusness involved in legalization (laundering) of income received by criminal means*. Thus, in 2013, the State Financial Monitoring Service of Ukraine sent 207 cases on financial operations related to money laundering to the law enforcement agencies, while in 2018 – 420 cases [Derzhavna Sluzhba Finansovoho Monitorynhu Ukrayiny. Pidsumky roboty za 2013 rik]. The amount of these unlawful financial operations was UAH 277.8 billion. In 2019, the rates were 211 cases for the total amount of UAH 41.8 billion.

Table 1.Information on crimes committed at the companies of the financial and insurance activity sector in 2016-2019

Indicators	Years															
	2016				2017				2018				2019			
	Criminal offenses		Material damage caused by criminal offenses		Criminal offenses		Material damage caused by criminal offenses		Criminal offenses		Material damage caused by criminal offenses		Criminal offenses		Material damage caused by criminal offenses	
	total, units	% to the total number of offenses in the financial and insurance sector	the amount of material damage, total, UAH million	% to the total number of offenses in the financial and insurance sector	total, units	% of the total amount of material damage caused by offenses in the financial and insurance sector	the amount of material damage, total, UAH million	% of the total amount of material damage caused by offenses in the financial and insurance sector	total, units	% to the total number of offenses in the financial and insurance sector	the amount of material damage, total, UAH million	% of the total amount of material damage caused by offenses in the financial and insurance sector	total, units	% to the total number of offenses in the financial and insurance sector	the amount of material damage, total, UAH million	% of the total amount of material damage caused by offenses in the financial and insurance sector
Financial and insurance activities	4983	–	175.1	–	**4624**	–	31.5	–	**3203**	–	30.5	–	**3203**	–	665.9	–
Monetary intermediation	**1104**	22.2	4.6	2.6	**1271**	27.5	3.7	11.7	**1127**	35.2	6.9	22.8	**1127**	35.2	11.8	1.8
Activities of holding companies	**5**	0.1	0.0	0.0	**3**	0.1	0.0	0.0	**1**	0.0	0.0	0.0	**1**	0.0	0.0	0.0
Trusts, funds and similar financial entities	**24**	0.5	70.8	40.4	**10**	0.2	0.1	0.3	**17**	0.5	0.0	0.0	**17**	0.5	0.0	0.0
Provision of other financial services, except insurance and pension provision	**3420**	68.6	90.7	51.8	**2746**	59.4	25.0	79.5	**1729**	54.0	18.1	59.3	**1729**	54.0	653.8	98.2
Insurance, reinsurance and private pension provision, except for compulsory social insurance	**137**	2.7	0.0	0.0	**185**	4.0	0.0	0.1	**137**	4.3	2.9	9.6	**137**	4.3	0.1	0.0
Ancillary activities in the areas of financial services and insurance	**293**	5.9	9.0	5.2	**409**	8.8	2.6	8.4	**192**	6.0	2.5	8.3	**192**	6.0	0.2	0.0

Source: compiled by the author according to the data Official website of the Prosecutor General's Office of Ukraine. Statistical information on the state of crime and the results of prosecutorial and investigative activities, https://old.gp.gov.ua/ua/stst2011.html?dir_id=113655&libid=100820 [accessed: 8.10.2020] [in Ukrainian].

Cash financial operations and financial operations related to foreign economic activity, depositing the accounts of the newly established companies, receiving/granting the financial assistance, operations conducted by the high-risk clients (public officials), and stealing the NBU refunding loans are the most common financial operations from the viewpoint of the income legalization (laundering). Electronic banking, private banking, and settlement of international trade transactions are the tools most commonly used for legalization (laundering) of income received by crime means.

The size of the "benefit" of the conversion centers in 2014-2015 was 7-9% of the converted amount. Nowadays, the cost of the services is 11-12% [*Serhiy Bilan rozpoviv*… 2016].

However, the schemes for obtaining illegalcash have changed lately. Whereas previously the conversion centers received cash mostly in one bank specifically involved in encashment, now the accounts of many economic entities opened in several banks are used, and the cash is withdrawn in small amounts (up to UAH 150 thous.) not only in bank cash offices but also via ATMs. Moreover, it is received from economic entities involved in the realization of trade-financial values for cash without recording in the companies' accounts. Overall, in 2017, the Tax Police of Ukraine liquidated 65 conversion centers (amount of "converted" funds was UAH 13.5 billion) [*My bachymo, yak zminylysya skhemy…* 2018], and in 2018 – 55 conversion centers (amount of "converted" funds» was UAH 12.1 billion) [Zvit Derzhavnoyi Sluzhby Finansovoho Monitorynhu Ukrayiny za 2018 rik].

4. Conclusions

The financial system reform in Ukraine is not finished, and the financial services sector remains to be one of the most problem-plagued from the viewpoint of consistency of the shadow activity development and expansion. The latter, in turn, stipulates the reduced residents' economic activity in the financial sector, the decline in production, and deteriorated financial security of the country in general. Therefore, the need to search for ways to eliminate the shadow activity of the companies in the financial services sector, on the one hand, and to create conditions for efficient activity in the legal economy, on the other hand, is of urgent importance nowadays. In our opinion, the key ways should be the following:

1) creation of favorable tax conditions to conduct business in the financial services sector, in particular, through stabilization of legal regulation of the taxations system, simplification of taxation, improving the efficiency of tax administration;

2) closing the gap between the level of deposit and credit rates and reducing the rates level in the economy in general to make the lending procedures more accessible for business;

3) improving the monetary discipline, in the first place, through securing the stable conditions on financial market by monitoring and increased control for the activity of financial intermediaries;

4) increased control for the financial markets in terms of countering the inefficient capital outflow through the circuit institutions;

5) countering cybercrime: detecting illegal online activity, prevention and protection from cyber strikes directed at bank electronic systems, combating crimes affecting the financial infrastructure and information system;

6) expansion of financial inclusion, etc.

Therefore, the real reduction of shadow activity in the financial services sector can take place in case of declining costs and the growing efficiency of the legal economy and the creation of equal conditions for the functioning of various business forms in the financial sector. Relaxing the fiscal pressure on the legal economy should be the key condition of such transformation that would create motivation to transfer the shadow operations into the legal domain.

References

Derzhavna Sluzhba Finansovoho Monitorynhu Ukrayiny. Pidsumky roboty za 2013 rik, Kyyiv [Report of the State Financial Monitoring Service of Ukraine for 2013], https://fiu.gov.ua/assets/userfiles/0350/zvity/zvit_2013_compressed.pdf [accessed: 8.10.2020] [in Ukrainian].

My bachymo, yak zminylysya skhemy z otrymannya hotivkovykh koshtiv. Interv″yu Serhiya Bilana zhurnalu «Visnyk. Reytynh», 2018 (October, 13) [We see how cash schemes have changed. Interview with Serhiy Bilan, Visnyk magazine. Rating], https://rating.zone/my-bachymo-iak-zminylysia-skhemy-z-otrymannia-hotivkovykh-koshtiv/ [accessed: 8.10.2020] [in Ukrainian].

Nakaz minekonomiky vid 18.02.2009 no. 123 "Pro zatverdzhennya metodychnykh rekomendatsiy rozrakhunku rivnya tinovoyi ekonomiky" [On approval of Methodical recommendations for calculating the level of the shadow economy: Order of the Ministry of Economy dated 18.02.2009 no. 123], https://www.me.gov.ua/LegislativeActs/Detail?lang=uk-UA&id=4bb297a0-c900-404f-8c6f-5f76f18b1503 [accessed: 8.10.2020] [in Ukrainian].

Nezadeklarovana pratsya v Ukrayini: formy proyavu, masshtaby ta shlyakhy yiyi podolannya [Undeclared work in Ukraine: forms of manifestation, scale and ways to overcome it: report], 2018, https://www.ilo.org/wcmsp5/groups/public/–ed_dialogue/–lab_admin/documents/projectdocumentation/wcms_630069.pdf [accessed: 8.10.2020] [in Ukrainian].

Official website of the Prosecutor General's Office of Ukraine. Statistical information on the state of crime and the results of prosecutorial and investigative activities, https://old.gp.gov.ua/ua/stst2011.html?dir_id=113655&libid=100820 [accessed: 8.10.2020] [in Ukrainian].

Pichuhina Yu.V., Chorna A.V., 2015, Spetsyfika funktsionuvannya tin′ovoyi ekonomiky YES [Specifics of shadow economy in EU], *Hlobalni ta natsional'ni problemy ekonomiky*, 5: 71-74 [in Ukrainian].

Serhiy Bilan rozpoviv pro naybilsh poshyreni pravoporushennya v kredytno-finansoviy sferi [Serhiy Bilan spoke about the most common offenses in the credit and financial sphere] (published on

December 6, 2016), http://sfs.gov.ua/media-tsentr/novini/276972.html [accessed: 8.10.2020] [in Ukrainian].

Statistics of the external sector of Ukraine according to the methodology of the 6th edition of the "Balance of Payments and International Investment Position Manual", https://bank.gov.ua/files/ES/Perekaz_y.pdf [accessed: 8.10.2020] [in Ukrainian].

Tendentsiyi tin'ovoyi ekonomiky v Ukrayini – 2015 rik [Trends in the shadow economy in Ukraine – 2015] https://www.slideshare.net/andrewvodianyi/ss-63702610 [accessed: 8.10.2020] [in Ukrainian].

Tinova ekonomika v Ukrayini. Rezultaty doslidzhennya 2019 roku [The shadow economy in Ukraine. The results of the 2019 study], http://kiis.com.ua/?lang=ukr&cat=reports&id=897&page=1&fbclid=IwAR1GSrnl6l4vk1GZE4QR9yekDt_C_NMIXJ-eA0mWArZpSC3DsCgwPsZ7unw [accessed: 8.10.2020] [in Ukrainian].

Zvit Derzhavnoyi Sluzhby Finansovoho Monitorynhu Ukrayiny za 2018 rik [Report of the State Financial Monitoring Service of Ukraine for 2018], https://finmonitoring.in.ua/wp-content/uploads/2019/04/SDFM_AnnualReport_2018.pdf [accessed: 8.10.2020] [in Ukrainian].

Charakterystyka i skala działalności gospodarczej w szarej strefie prowadzonej przez ukraińskie firmy świadczące usługi finansowe

Streszczenie. *Celem artykułu jest zaproponowanie podejścia do oceny poziomu szarej strefy w działalności ukraińskich przedsiębiorstw sektora usług finansowych. Autorka analizuje działalność w szarej strefie, biorąc pod uwagę, jak te działania wpływają na efektywność wykorzystania potencjału sektora finansowego z punktu widzenia zapewnienia rozwoju społeczno-gospodarczego kraju oraz wskazując na priorytetowe działania, które należy podjąć, aby stworzyć warunki dla sprawnego funkcjonowania przedsiębiorstw usług finansowych w ramach prawnych.*

Słowa kluczowe: *szara strefa, szara działalność, przedsiębiorstwo, sektor usług finansowych, usługi bankowe, działalność bankowa*

Zeszyty Naukowe
Wyższej Szkoły Bankowej w Poznaniu
2021, vol. 92, no. 1
DOI: 10.5604/01.3001.0014.9164

Yaroslav Kudria

State Institution "Institute of Regional Research
n.a. M.I. Dolishniy of NAS of Ukraine" Lviv (Ukraine)
Department of Problems of the Real Sector of the Economy of the Regions
orcid.org/0000-0001-6336-2410
email: swiss.inc.com@gmail.com

Economic effects of non-additive development of industrial enterprises: an analytical review of the process and structural transformations

Abstract. *The article presents a methodological approach to assessing the effects of non-additive development (NAD) of enterprises, which takes into account the impact of economic processes on the intensification of production activities of an enterprise and its socio-economic transformation. The author analyzed the current non-additive development of enterprises in the industrial sector of the Ukrainian economy by assessing the dynamics and identifying key trends depending on the main types of industrial activity. The results of the analysis were used to identify recent structural changes in the industrial sector.*

Keywords: *analysis, development, dynamics, enterprise, estimates, industry, tendency*

1. Introduction

It is important in achieving Ukraine's strategic goals its integration with developed countries with the priority of integration in foreign economic policy with European Union. A prospects for such integration are determined not only by the adaptation tools of integration interrelations of national economy in European space, but also immanence at the convergent stage of non-additive properties and vectorization of them to positive pole of the dual nature of non-adative economic system that promote integration processes.

Non-adative, as concept of economic system development, has characteristics abrupt dynamics of the processes of functioning, which is a prerequisite for non-adative qualitatively new levels of existence, determined by intangible creative

beginning. Effective management of development mechanisms highlights show the need to research of financial and integration processes that find their own reflection in the immanence of the non-adative state of industrial enterprises.

Achieving the non-adative state as a phenomenon of the new qualities system creates opportunities to overcome the crisis and their consequences under the influence of positive polarization of esults of the development of processes along the trajectory innovation function in the post-crisis period. Analytical tools detection of latent manifestations of non-adative properties of development industrial enterprises is the economic and mathematical modeling of processes by using the theory of fuzzy logic and correlations of results abrupt dynamics of functioning and interaction of industrial enterprises.

The positive non-adative properties of industrial enterprises determine their innovative development. The economy efficiency of functioning industrial enterprises directly depends on the increase of latent manifestations of the complex positive non-adative properties, which is characterized interrelation of innovations and system effect, non-adative and results of the non-adative, structural integrity, value of relationships in business processes, capitalization of financial costs. Thus, the issues related to strategic economic growth and the intensification of the innovation are quite relevant for domestic industrial enterprises.

That is why issues aimed at studying the processes of the evaluation and analysis of NAD of industrial enterprises need further research and is relevant for modern companies.

2. Analysis of publications of the problem

The study of literature showed that the phenomenon of convergence is considered as a communication and integration phenomenon, the result of which are the effects that occur at the junction of industries, and there is a possibility of new properties in the system [Frooman 1999: 28-34; Chu & Brown 2020: 101-105]. Any of the economic systems that achieve the effect of convergence are characterized by effects of non-adative. Their prolongation creates a favorable environment for the non-adative of system properties that were not inherent in parts before. At the same time, non-adative characterizes a set of system properties that were not inherent in components of system as a whole and its individual elements. It is a consequence of unpredictable bifurcation [Gakhovych 2012: 95; Willson, McKey & Cooper 2020: 267-274]. That's why achieving an non-adative effect in economic system is the easiest to explain by coordinated group activities. So, today the behavioral economics is basis for studying the non-adative properties of economic systems [Apstaine 2018: 92-93; Gregor & Tailor 2019: 112-123; Gurochkina 2020: 52-54].

In the information sources it is determined that the non-adative potential characterizes the probability of realization by enterprise of financial, economic and integration potentials, which exceeds the product of the probabilities of realization the component potentials [Buyak, Kulina & Pauchok 2011: 328-329; Sidorov 2018: 36-37]. A new qualities of economic system are manifested through the group activities of people, subjects of the economic relations in their social interaction, where the occurrence of unforeseen events in the economic system is attributed to the behavior of subjects [Gurochkina 2020: 62-63; Karnegy & Peterson 2020: 87-89; Kruger 2001: 312-320; Telnov 2005: 44].

The study of the behavioral aspects of economic entities in a competitive market is based on psychological factors and orderly preferences that can influence people's decisions in various situations, changing the economic system. At the same time, more attention is paid to situations where people behave differently than predicted by classical economic theory with its assumption of rationality and selfishness [Chu & Brown 2020: 121; Kruger 2001: 355-356; Yevdokimov & Gubska 2008].

A review of the literature revealed that the solution of the interaction of technology, economy growth and social progress has an impact on the formation of management decisions on promising strategic directions of enterprise development. Such ideas create mechanisms of interaction and contribute to NAD of industrial enterprises [Karnegy & Peterson 2020: 111; Willson, McKey & Cooper 2020: 308-309].

3. The purpose of the article

It is representation the analytical review of the main economic effects of the NAD of industrial enterprises, which provides study conditions the production and economic activities and structural transformations of enterprises in Ukraine at the basis of analysis results the main dynamics and trends of it.

4. Research methodology

The duality of non-adative is determined by technological normality or inconsistency. It affects the structural transformation of economic system of the enterprise from strong and adapted to unbalance with signs of dynamic chaos. The factors influencing the activation of non-adative properties are inversely proportional to the components of the economic security system of innovation potential the industrial enterprises. It is advisable to consider activation processes in terms

of motivators and demotivates, and, at the same time, signals of the non-adative and the results with different poles. We take into account that the development of industrial enterprises is carried out due to the results of activation of non-adative properties that promote innovative transformations. The above facts indicate that results of comparative evaluation are indicators of conformity of the conclusions of model of the dynamic chaos with a dual attractor and depends on the phase portrait of the industrial enterprise. Vectorization of dynamic changes provides an opportunity to reach a stable mode of the operation of industrial enterprises. Among the other, it is planned to analyze the dynamics of industrial enterprises profitability over the past decade.

5. Presentation of the main research results

The conceptual basis of the functional dependence of the non-adative properties of the economic system or industrial enterprise is focused on determining the impact of the level of economic security of the system (industrial enterprise) on non-adative properties that set the direction of stability and balance of the economic system. The proposed dependence involves the study of key factors influencing economic security and the performance of macrofunction of the system. This approach to assessing the non-adative properties of the economic system outlines the boundaries of the function and sets the type of the economic growth of system.

In order to identify non-adative properties, we consider the main stages of formation of the scheme of non-adative properties. It can be used not only in the value chain in mergers and acquisitions, but also the internal mechanism of industrial enterprise.

The generalization of research the scientific sources allowed to identify the main non-adative properties of the first kind of functioning and transformation of an enterprise within the value chain, when systemic effects are achieved. So the center of the scheme is the system properties of bifurcation of the potential of industrial enterprise development – innovation, standartization, adaptability, environmental and economic responsibility to stakeholders, etc. The positive results of non-adative properties, in our opinion, are static profitability and its stability taking into account time limits, integration and competence of management, ability to accumulate maximum added value, structured organization, capitalization (transformation of income into value), scaling.

Obtained forecasting results will allow to choose the strategy of adaptation of the industrial enterprise, which will be the basis of the mechanism of development of non-adative properties of the enterprise. The first stage in the formation of

the concept of modeling non-adative economic systems is to identify the objects of modeling, which can be an enterprise, association, cluster, territory, region, country, international industry system. The second stage contains research on a certain non-adative state of the system and its behavior in time and economic space. To do this, we use data on economic indicators of the system development, postulates on the general behavior of the system and the interaction of its components.

The main source of innovative development of industrial enterprises and non-adative properties in an unstable environment is financial support and intensification of financial processes. A system properties of bifurcation of industrial enterprise development potential are: innovation, standardization, adaptability, social, ecological, economic responsibility to stakeholders. Positive results of non-adative properties are static profitability and its stability taking into account time limits, integration, competence of management, ability to accumulate maximum possible added value, structured organization and so on. The identification of non-adative properties of an industrial enterprise is carried out by seven groups of indicators:

1) the concentrations of profitability, which characterize the ability of an industrial enterprise to accumulate financial resources over a period of time and are determined by changes in net financial result (net profit), equity, economic value added, the net operating profit less adjusted taxes and operating income net of taxes and the interest, gross income before interest, dividends, before taxes and depreciation on fixed assets and intangible assets the earnings before interest, taxes, depreciation and amortization ("A");

2) the level of integration that characterizes the company's ability to be a full partner in the association and stable relationships with partners and/or stakeholders, are determined by indicators of the adaptation and ability to operate under adverse conditions, achieve the necessary standards, change business activity, liquidity and solvency, especially the indicator of payment discipline and the volume of investment and non-financial resources;

3) the balance of the structure that characterizes the integrity of the enterprise and its stability, which is manifested in unchanged strategic positions;

4) the indicators of the changes in economy effect of financial leverage and financial stability, analytical assessments of interaction with stakeholders – Nash (Nash) equilibrium, player competence (the concordance) and the expert assessments of management quality, staff satisfaction with administrative levers;

5) capacity building which characterizes strengthening of a competitiveness, effective scaling, localization of production by structural units, the changes in capitalization and market share;

6) responsobility of enterprise which characterize the balanced activity and result of which is a combination of triple effect: the economic, social and

environmental, transition to a circular economy and the tax competitiveness of enterprise. The legal and tax responsibility of company is designed to ensure transparency, honesty and the tax discipline. Introduction of a closed cycle model of production, recycling or recycling and redesign;

7) the innovation of enterprise, which is characterized by the achievement of the latest product characteristics or the introduction of process innovations in production, indicators of the level of automation, innovation activity, financial support of innovation.

A tools for activating non-adative properties of industrial enterprise can be application and implementation of the: certification, 5 circular business models, 6 sigmas, kanban, value stream mapping, total productive maintenance, Toyota production system, just-in-time, etc.

In our opinion, it is necessary to characterize in more detail the specified indicators of blocks of activation of the non-adative properties of industrial enterprise. The first group of indicators is important for identification of non-adative properties as it indicates effectiveness of financial resources management.

The most important indicator of this group is "A" – measure of the enterprises profit, which ignores the payment of the taxes, investment costs and debt service. The calculation of this indicator is used to assess the company's ability to service loans. "A" began to count on the peak of the fashion of acquiring companies through debt financing – leveraged buyout and buyout of company by management buyout. It was also carried out the expense of borrowed funds. Such loans are raised to repurchase the asset and "A" allows to assess the company's ability to service the additional burden. At the same time, it is important for both the investor, the lender, and management to assess whether long-term cash payments affected the conduct of short-term actions in the enterprise, which meant investments (when depreciation does not affect balance of money in accounts). Given this feature of "A", it is advisable to use indicator for companies that make rare, but the large-scale investments with a long depreciation period.

So today "A" is used much more widely, as it characterizes free indicator of managerial manipulation (opposed to indicator of personnel management – a key performance indicator). Assess the development of enterprise, the inclusion of "A" indicator in main evaluation criteria is a basic novelty.

The second group includes indicators that characterize the level of involvement and integration in the joint activities of associations, clusters, strategic partnerships and which characterize the company's ability to be a full partner.

A method of determining indicators of results of the integration industrial enterprises involves the calculation of indicators for groups: the change in business activity; liquidity and solvency; business process assessment; payment discipline; adaptation of enterprise and, at the end, achievement of high standards and norms. In each group there are many coefficients, the set of which

allows to identify non-adative changes in integration of industrial enterprises into a single whole.

The basis of trust between partners is not only rhythmic interaction or the adaptation to the new rules of business between partners, but payment discipline. It is purshasing discipline – timely and accurate fulfillment by individuals and a legal entities of obligations to creditors and the others to pay money, including taxes to state and municipal budgets. Sometimes it is compliance with the forms and procedure of payments established by law, the other legal acts and agreements. It follows from this definition that payment discipline depends directly on the parties to transaction: sales, deliveries, commissions, etc. The payment discipline in industrial enterprise characterizes the timeliness and transparency of financial payments for obligations in full and just in time.

The third group consists of indicators that characterize the balance of interests and rights of enterprise, their stable activities in the process of joining forces, creating clusters and strategic partnerships.

The concordance coefficient, which characterizes the quality of the examination at the value of the indicator "0" indicates the inconsistency of the opinions of experts, at the value of the indicator "1" – the characterizes complete unanimity in the conclusions.

According to Nash's balance in the strategic interaction of two or more players, the participants anticipate the actions of rivals and implement their actions according to optimal development strategy. Feature is the interdependence of changes in this set of strategies. The individual players can not increase winnings by changing the choice of strategy unilaterally, as changes must also occur in strategic directions of the other participants in the game. Nash equilibrium – directions of strategic interaction [Sidorov 2018: 54-55]:

Hypothesis A. If there is an equilibrium in dominant strategies, it is Nash equilibrium.

Hypothesis B. If none of the strategies included in Nash equilibrium, it can be rejected when removing strongly dominated strategies. Theorems allow us to apply the procedure of removing the dominant strategies before finding Nash equilibrium.

Hypothesis C. If mixed extension of any game with finite number of strategies, there is always Nash equilibrium for mixed strategies.

Thus, Nash's equilibrium is a stable social agreement that characterizes the consistent rational actions of participants in decision of the game. That is why, to identify non-adative properties of enterprise, strategic irrational actions can be obtained by inverse induction and are called equilibria of empty threats (contrary to the assumption of rationality of players).

The fourth group includes indicators that characterize strengthening of the potential of industrial enterprise. It determined by indices of the competitiveness, scaling and localization, changes in capitalization and market share.

A capitalization involves the transformation of income into value. Peculiarity of the method is that the object of evaluation under study must have a stable income or a stable rate of change. Depending on the purposes of the valuation, the following indicators may be taken into account for income: profit before tax, net profit or free cash-flow. It is the total amount of net cash flows as a result of operating and investing activities, excluding financial activities, as the latter takes into account payment of dividends, return of investors' contributions. Free cash-flow is indicator that characterizes the amount of cash flow that investors can claim. The method of income capitalization provides for the use of the gross net approaches, respectively entity (gross value – based on total capital) and equity (net value – on equity).

Under the net approach, the value of enterprise is defined as the ratio of net profit to capitalization rate; under the gross approach, the value of enterprise is set as the difference between share from the division of profits to payment of interest on the weighted average cost of capital and the amount of borrowed capital.

The business scaling and economies of scale have undeniable advantages or positive effects. It is manifested in a decrease in average costs compared to an increase in production in the long run. The negative effect of scale include an increase in production costs (average costs) with increasing production of industrial products. In the model, when costs are divided into fixed and variable, the positive effect of scale is described by reducing the value of fixed costs per unit of output while maintaining the same number of variable costs while increasing the number of products.

The fifth group includes indicators that characterize the implementation of corporate social responsibility and determined indicators of social, environmental, economic effects and indicators of closed cycle production.

The construction, implementation and use of a circular model of production allow for economic assessment of amount the raw materials. At the same time it's calculated as the sum of volume extraction / production and the import of resources, excluding volume of exports. Accordingly, it looks like (1):

$$\rho = \sigma_{\upsilon} - \varsigma_{\upsilon} + \tau_{\upsilon}, \tag{1}$$

where:

ρ – the general economic and mathematical form of a circular model of production;

σ – the domestic production of raw materials, monetary units (m.u.);

ς – the export of raw materials, m.u.;

τ – the import of raw materials, m.u.;

υ – the raw materials that have been removed from the environment and physically entered the production cycle for further processing or consumption, m.u.

Integration processes give rise to global problems that require a concerted effort. Thus, for the International Organization for Standardization (ISO), the main issue is to achieve well-being of society through the model of "sustainable development".

A corporate responsibility is characterized by balanced activities, which is result in a combination of significant benefits, introduction of closed production, resource conservation models and tax discipline, it prevents the concealment of income of formally owned entities with low tax rates in offshore areas. The basis of tax discipline and the deoffshorization nature of behavior the economic entities is study theory of transfer pricing, controlled transactions and key principles of international cooperation. In our opinion, higher levels of legal and tax liability, activation of non-adative properties of thee system at micro level, as business leaders make management decisions that contribute to non-adative industrial development.

Process of redistribution of financial resources in tax planning system of multinational companies is gradually becoming more complicated. In the overall set of foreign economic cooperation of economic entities, the focus is on transfer pricing. To financially stabilize and ensure the transparency of doing business, the implementation of action plan in Ukraine has been introduced. Compliance with rules and regulations of tax law on the erosion of tax base between countries and redistribution of profits between related companies is basis for quality tax planning and timely adaptation of international business to tax innovations. The corporate social responsibility is designed to ensure the sustainable development of industrial enterprise throughout its life cycle.

The strategy for the smart, sustainable and inclusive growth, provides implementation of the next priorities [Frooman 1999: 29]: a reasonable economic growth based on knowledge and innovation; the sustainable growth (it is promote more resource-efficient and competitive economy; a comprehensive growth provides high employment in terms of territorial unity.

The main reasons that motivate companies pay special attention to the issues of social responsibility are: the globalization and associated intensification of competition, growe size and influence of companies, etc. [Melashich & Starinets 2017: 259-262].

A corporate social responsibility is a concept in which companies integrate social and environmental issues into their business and the stakeholder engagement on a voluntary basis [Gurochkina 2020: 189]. The corporate social responsibility, as a balanced activity that results in combination of triple effect, social and environmental, is characterized by transparent and ethical behavior that promotes sustainable development, namely as: promotes health and well-being of the society, meets stakeholder expectations and current legislation and international standards of conduct. Thus, the corporate social responsibility of the

organization is a strategy of doing business to create public goods, which allows you to get the other useful effects. On the positive side, corporation's socially responsible behavior improves the brand's reputation, reduces risks, hinders staff turnover and increases staff productivity, and strengthens the trust of both the consumer. The development of corporate social responsibility policy at domestic enterprises is gradually becoming more popular.

The evaluation of the activation of non-adative properties at the micro level leads to a comprehensive diagnosis between elements of economy systems and interaction of industrial enterprise with stakeholders.

So scientific and innovative potential is characterized by removal of obsolete facilities and the introduction into production of new science-intensive technologies, creation a new industries for in-depth processing and manufacturing of high quality end products (including on the basis of points "growth"). It is as well as the ability to achieve high-tech status in world markets for such products and to resist threats in field of science, technology and innovation. Such potentials types of industrial enterprise are important for activating and applaying a non-adative properties.

The main task of structural restructuring domestic industrial enterprises involves the innovative basis. It is the removal of obsolete capacity and the introduction of new high-tech technologies, the creation of new productions for in-depth processing and production of high quality final industrial products, the energy efficiency and the intensification of energy saving policy production models. Implementation of these measures will be able to create multiplier effect for the entire economy of Ukraine, giving it a strong innovative impetus and helping to strengthen economic security.

In general, the non-adative state of system is evaluated as a set of properties that it can have only, if the integration of certain components and their interaction with each other. The peculiarity of a non-adative is unpredictable behavior and activity of such elements (financial, innovative, integration, social, environmental, etc.).

The non-adative is manifested through the factors of interaction and effectiveness of system in a certain the composition of active ingredients. Achieving qualitative changes in the system is called "non-adative". Quantitative changes, – a "results", – identify the indicators of development at micro level, which are determined by algebraic addition of original elements. As usually, countries with growing economy, that are on path from the group of developing countries to the group of developed, are called non-adative. However, a transition and abrupt path of sustainable, innovative development can be recurrent as this property is fundamental to dissipative dynamical systems.

Thus, assessment of the activation of non-adative properties at micro level leads to a comprehensive diagnosis and monitoring of elements and interac-

tion of industrial enterprise with stakeholders. Processes of the mergers and acquisitions of industrial enterprises occupy a larger share in formation of gross domestic product not only in industrialized countries, but also in countries with non-adative economies.

In our days industry is one of the strategic components of the country's economy. The current state of functioning in Ukrainian industry, its financial support and development are quite complex, as it is due to a number of problems. But, despite the availability of social and intellectual potentials, low competitiveness, import dependence and raw material orientation, lack of financial resources and significant public debt weigh on the mechanisms of industrial development. Therefore, determining the role of industry in Ukraine economy of and its main drivers of activation non-adative properties in instability, which can significantly improve the situation of Ukrainian industrial producers, is extremely important to ensure the positive effects of non-adative situation.

Examining the volume of financial support for development of industrial enterprises in the non-adative economy, we should pay attention to the stability of the national currency and indices of industrial production. According to State Statistics Service of Ukraine (SU) [State Statistics Committee of Ukraine 2020], the dynamics of exchange rate indicates next gradual depreciation the national currency: UAH exchange rate vs. USD in 2020 amounted to 23.68, compared to 2007 (5.05 UAH), which is 18.2 UAH more than 3.6 in times.

The indicators of dynamics the inflation indices characterized by constant fluctuations. At the same time, in 2012 there was a deflation of 99.8% in Ukraine, which is characterized lower prices on goods and services, reduced business activity. However, significant inflation is observed in 2015 to 143.3%. It should be noted that during this period of time there was no significant impact on industry. In 2016 the trend of the industrial production index changed – in 2016 it amounted to 103.1%, when in previous years it was below the threshold value. As of 2020, due to deterioration of performance in industry, there was a decline in the industrial production index to 9%. This is 91.6% compared to previous 2019. There is no doubt that the devaluation of the national currency is one of the factors influencing the index of investment attractiveness. This means that the Ukrainian labor potential has become more than 3 in times "cheaper", accessible to the foreign investors. Under such conditions, the economic interests are leveled. Investigating the financial and integration mechanisms of industrial development, in non-adative economy there is an expediency to consider indices of industrial production by type of activity.

In 2014-2019 fluctuations of the industrial production indices by types of activity were recorded [State Statistics Committee of Ukraine 2020]. Thus, for example, in 2016-2018 there was a positive trend of growth the indicators and in 2019 there was a decrease in the volume index which is 99.5%. The volume

of industrial production is decreasing, which is a negative trend. Instead, the values of the indicator of the volume of sold industrial products until 2018 had growing dynamics. But, unfortunately, in 2019 sales slowed down and showed a decrease of 2.78 mill. UAH.

The realization of Ukraine's industrial potential since 2014 has had a positive growing dynamics, but in 2019 it showed a decline. The dynamics slowed down to 1.1% compared to 2018. Inflation indices are characterized by constant fluctuations: in 2012, deflation of 99.8% was observed in Ukraine. It was characterized by lower prices for a goods and services and business activity. A significant inflation was observed in 2015 to 143.3%. It should be noted that during this period it did not have a significant impact on industry. In 2016, the trend of the dynamics of the industrial production index changed – it amounted to 103.1%, when all previous years it was below the threshold value. As of 2020, due to the deterioration of results in industry, there was a decline in the industrial production index to 9%, which was 91.6% compared to 2019. The main reasons for the decrease in sales of industrial products or the actual realization of Ukraine's industrial potential competition in the markets and the non-competitiveness of the innovative potential of the industrial producer, which is associated with insufficient financial support for innovation, credit difficulties and weak opportunities to attract the foreign investment, due to changes in government and a political instability. In particular, for the first time in the history of the independent Ukrainian state in 2018, a mono-majority was elected in Ukraine. Accordingly, such changes had consequences, given that the most peoples did not have sufficient experience in public finance management, fuel, energy, science, medicine and the other sectors of the national economy. After five years of growth, industrial production decreased to 1.8%, including electricity, gas and steam supply decreased to 4.1%, and in the processing industry – to 2%. Production volumes in the mining industry have not changed, in the processing industry in 2019, the positive dynamics of indicators is observed in high-tech industries, such as: pharmaceutical (growth of 5.1%), production of computers, electronic and optical products (to 4.3%), chemical (to 3.3%), production of food, beverages and tobacco and furniture, other products, repair and installation (to 0.2%).

The low level of innovative potential of industrial production begins with significant losses of previous periods of business partners in the other economic activities, as industry is one of first to form value chains. As a result, it is inextricably linked to integration business processes. So, according to SU [State Statistics Committee of Ukraine 2020], the number of industrial enterprises implementing innovations is constantly changing. The record was 16.6% in 2016, in 2017 there was a decrease to 14.3%, in 2018 it was 15.6%, and the lowest is in 2005. Therefore, the main reason for industry failures is the mismatch the level of innovation potential of the Ukrainian industrial producer to world standards

and a consistently low share of innovation-active enterprises, at the same time, with significant debt burdens on both the state budget and industrial production.

Today the dynamics of the indicators of financing the innovative activity of industrial enterprises today remains in a larger volume – it is the own working capital of enterprises and organizations. The expenditures for implementation of innovative activities of the industrial enterprises of Ukraine increased rapidly in 2016 and amounted to a record 2.32 mill. UAH, which is almost twice less than in 2018 – 12.18 mill. UAH. This gave a high indicator of the results of the introduction of innovative technologies and innovations with a value of 16.6% in 2016 (according to SU [State Statistics Committee of Ukraine 2020], 3489 units of the new technological processes were introduced).

The largest part in the structure of financing belongs to funds from own sources of industrial enterprises, in second place are the other sources and in third – the state budget and non-resident investors. The largest amount of funds allocated from the state budget in 2018 amounted to 6.39 bill. UAH, in 2019 – 5.56 bill. UAH. It should be noted that the trend of financing Ukrainian industry from non-resident investors changed in 2014, when there was a sharp decline in foreign support for domestic innovation.

In addition to the lack of financial security, morally and physically obsolete equipment (70%) national industrial products do not fully meet the requirements of the world market, namely: quality, environmental performance and high level of resource consumption (material and energy consumption), which negatively affects profitability industrial enterprises.

The precondition for the such problems is insufficient innovation activity of industrial enterprises, low level of innovation, in fact, use of waste-free and low-waste, energy-efficient and resource-saving technologies is not ensured, closed production cycle and non production technologies are not implemented in the country. According to the official data of SU [State Statistics Committee of Ukraine 2020], following key trends and problems can be identified. Thus, the number of industrial enterprises implementing innovations during the study period is constantly fluctuating with a record 16.6% in 2013. In 2017, there was a decrease in the indicator; its value was 14.3%, later in 2018 – 15.6%. At the same time, there is a constant fluctuation of values, but there is no significant increase. The main indicator of the number of innovatively active enterprises in the total number of industrial enterprises is also growing: in 2016 – 18.9% and then again there is a decrease to 16.4% in 2018.

Examining indicators of the number of innovation-active enterprises in Ukraine that try to use the innovative model of development, it should be noted that their successes are insignificant. Despite fact that Ukraine has a sufficient number of scientific staff and relevant potential, there is not enough experience in creating and implementing an innovative product. The reasons for the negative

dynamics of strategically important indicators for state regulation are the lack of state support for innovation activity of industrial enterprises and organizations. It is extremely important to create the conditions for innovative development to ensure the effectiveness of the mechanism of state support, effective regulation of innovative activities of industrial enterprises.

The net profit of the industrial enterprises in 2010-2018 has an unstable dynamics. According to SU [State Statistics Committee of Ukraine 2020], we observe after a significant loss in 2014 (–178.73 mill. UAH), in 2015 (–188.26 mill. UAH), in 2016 (–247.24 mill. UAH) there was a rapid improvement indicators of profitability the industrial enterprises in 2017 (–56.12 mill. UAH) and in 2018 (–109.28 mill. UAH). In this case, we assume the presence of non-adative properties in industrial enterprises of Ukraine, as significant wave-like dynamics of the net profit indicates non-adative development, which is characterized by a long interval, with insufficient funding and uncompetitive industrial products.

All this indicates certain irrationality in management, as reducing the volume of sales and financing increases net profit of industrial enterprises in 2017-2018 maximum allowable threshold values of constant fluctuations in the economic dynamics of industrial enterprises.

Net profits of mining and quarrying enterprises for the period 2010-1018 were abrupt. The significant deterioration of the situation in 2014-2015 is primarily due to changes in the market of industrial products. For example, there was a change in the target orientation to ensure the interests of European and Asian industries, creating new value-added industrial chains. At the initial stage of military aggression in eastern Ukraine, the national industry was in a state of the considerable turbulence. The government has made a logical decision to sever trade and economic ties with Russia Federation, which has significantly affected the financial and economic performance of industrial enterprises.

In 2015, the indicator of net profit from a negative value (–23.12 mill. UAH) changed to 18.02 mill. UAH in 2016. An absolute amount of deviation the indicator in 2016, compared to 2015, amounted to 41.1 mill. UAH (177.96%), and in 2017 to (–41.8 mill. UAH), compared to 2016, which is 231.98% increase. In order to restore the profitable activities of industrial enterprises, a set of business relations is gradually being established to interact with the new partners and markets for the sale and marketing of industrial products are being mastered. In the mining industry, such a strategy is easily implemented, as products are minerals: coal, gas, ore, stone, sand, clay etc. They have a stable demand not only in the domestic market, but also abroad. The most popular today are minerals extracted, both open and underground (gypsum, anhydrite and limestone). The net profit of manufacturing enterprises has a similar pace of the development: for the period in 2010-2018 the dynamics is abrupt. However, unlike mining, the manufacturing industry must ensure the competitiveness to

ensure profitability, enhancing its economic potential by deep processing to concentrate value added.

The dynamics did not recover after the crisis period and remains negative, in terms of financial results, the most industrial enterprises remain unprofitable. The largest share of the unprofitable industrial enterprises remains in the water supply, sewerage, waste management. In order to increase profitability and the level of economic efficiency, which is relevant for the industry of Ukraine, there is concept of a circular economy. The official information from SU [State Statistics Committee of Ukraine 2020] shows, that in terms of waste recycling over the past eight years, Ukrainian realities of development of a circular economy for waste I-III hazards from economic activities of enterprises have had little success. According to various data on waste of hazard classes' I-IV, taking into account the waste generated in households, the general indicators reach the volumes of landfills from 4% to 7% of the country.

Over the last decade, the profitability of industrial enterprises has been characterized by a wavy nature. Over the past two years, net income has begun to grow through mining and quarrying, somewhat outpaced by manufacturing. However, other types of industrial activity remain unprofitable, which has an extremely negative impact on the development of industry as a whole.

Changes in the foreign economic activity of the country had a significant impact on the financial and economic results of industrial enterprises. To prevent significant indicators of unprofitability of the industrial enterprises, it is extremely important to implement foreign experience in the implementation of a concession agreements and innovations of low-waste technologies, energy efficiency and the resource conservation, with the introduction of closed production cycles.

In Ukraine, the dynamics of waste management is unstable; the analysis of SU [State Statistics Committee of Ukraine 2020] includes data on disposal, incineration and the disposal in specially designated areas, but only a small proportion is recyclable.

Regarding the indicators of the total amount of waste accumulated during the entire period of operation, in specially designated places (I-IV-th hazard classes), it should be noted that the volume in 2010 was 13.26 mill. tons. In 2010 this indicator decreased to –0.3 mill. tons (–2.22%) and in 2018 (–0.12 mill. tons). Regarding the dynamics of indicators the waste management of economic activities, enterprises pollute the environment less for households. Thus, in 2010 the amount of waste amounted to 16236 tons, and in 2018 was (–0.12 mill. tons), which is less to 0.4 mill. tons or (–24.8%). This indicates a trend of decreasing waste in enterprises, compared to the households over the last eight years. Therefore, we shall dwell in more detail on the main reasons for this.

Analysis of the dynamics of registered business entities in the economy of Ukraine in 2012-2018 shows an increase in their number during this period of

time. Thus, during 2012-2015, there was an increase in the number of registered entities from 1.6 mill. units in 2012 to 1.97 mill. units in 2015 (23.42%). Despite the negative dynamics of the number of registered business entities in 2016-2017, when there was a decrease in their number to 1.86 mill. units in 2016 and up to 1.87 mill. units in 2017. But in 2018 there was an increase in the number of registered business entities to 1.93 mill. units. By the way, their number increased to 14.97%, compared to 2012. Regarding the number of economically active enterprises in Ukraine, the number of economically active enterprises in 2018, compared to 2012, increased from 622 538 to 666 986 units (7.14%).

In 2018, the dynamics of innovation implementation in industrial enterprises allows us to conclude that innovative development is carried out at an extensive pace, as the share of enterprises that implemented innovations in total number of industrial enterprises was 15.6%. And the share of sold innovative products in the total volume of sold products of industrial enterprises amounted to 0.8%. All this with the introduction into production of innovative products in the amount of 3843 units. This is an extremely low rate of innovation in industrial enterprises. Compared to 2000, only 15% of all industrial enterprises introduced innovations, which made it possible to introduce 15 323 units into production of innovative products and result was the share of sold innovative products of 9.4%. Latter significantly exceeds figure of 0.8% in 2018. At the same time, given that the number of active enterprises is growing at low rates of innovation processes and technological innovations in industrial enterprises, we can say that industrial enterprises, especially processing, are much more inclined and have greater potential to implement the circular economy model.

The trend of reducing waste may be associated with intensification of the introduction of the circular economy. Regarding the partial utilization of waste, there is an increase in the secondary use of blast furnace slag, steelmaking and a ferroalloy production. But, despite this, the problem still remains acute [Gakhovych 2012: 96; Gurochkina 2020: 222].

Analyzing the indicators of waste management in structure of their generation (hazard I-IV), without taking into account total amount of the waste accumulated during operation, in specially designated areas, we can conclude that disposal is only a third of waste generation, more the halves are simply removed to specially designated areas. It should be noted that only in 2010 the total value of utilization of waste in specially designated places in the structure of indicators of their generation was 113.57% and waste management exceeded their generation to 13.57%. This means that 13.57% was processed from the volume of savings for previous years. After all this part is not transported to specially designated places. A residual difference between the generation and the total value of waste management is accumulated in the annual indicators of loading of specially designated places for waste, which pollutes the environment.

The most of the waste is taken to landfills, after which probability of their recycling is significantly reduced due to existing problem of lack of proper sorting and separation of the required amount of raw materials for further processing. Therefore, the important and main task of structural restructuring of industrial enterprises on an innovative basis is the removal of obsolete capacity, introduction of the new science-intensive technologies, a productions for in-depth processing and production of high quality final industrial products, energy efficiency and energy saving policy in industry production models.

Return to the official data of SU [State Statistics Committee of Ukraine 2020], the volume of waste generation by types of economic activity and households in 2010-2018 over the last eight years decreased to 70 216 tons. In 2018 it increased to 0.35 mill. tons, compared since 2010, when 0.42 mill. tons of waste were generated, which is to 16.62% less. The most waste is generated by following groups: mining and quarrying, which are generated during the excavation work in the process of creating mines and quarries; wastes from coal beneficiation processed at concentrators and briquette factories. In the second place – processing industry with 31 522 tons in 2018. So, in our opinion, it should be noted a significant reduction waste generation in 2018 to 33.88%, compared to 2010. Significantly reduced waste generation in the other economic activities in 2018 to 69.74%, compared to 2010.

According to the results of industrial enterprises, waste was generated in 2018, 0.339 mill. tons per year, while most of them belongs to companies in mining industry. In 2016 the rate of formation was much lower than in 2018. It is primarily due to reduction in production, which affected the reduction of the net profit of industrial enterprises in 2016. Regarding the treatment of household, similar waste that generated in Ukraine in process of human life and activity are not used at the place of accumulation, it should be noted that they collect twice as much as they remove.

To the results of comparative dynamics of waste generation, it is determined that there is a tendency to exceed the waste generation over in three times. This characterizes Ukrainian production as “dirty”, as multi-waste with significant indicators of resource consumption. In order to prevent pollution and strengthen environmental protection, it is extremely important to move to the circular type of production. So such decision supply minimizing waste through innovative processes, products that should ensure and strengthen competitiveness of industrial enterprises. In order to ensure better policy of environmental protection and the management of household and similar waste in Ukraine, it is extremely important to financially support the processes of utilization and implementation of waste-free production or the circular economy.

The current expenditures and the capital investments for protection are quite important indicators of the effectiveness of environmental protection. Thus, as we

can see during 2010-2016, the volume of capital investments increased, catching up with the value of current costs of the environmental protection. However, in 2016 there was a significant reduction and the figure decreased to 10.07 mill. UAH with the current expenditures of 24.31 mill. UAH. They were covered by the public funds and international donors. The main barriers to innovative development in state are the lack of financial support for research, development institutions from the state and lack of a strong enough base of institutions that control the rational use of innovative capital of enterprises.

Current costs, capital investments in waste management are important indicators of the effectiveness of waste management policy. As for the waste management, in percentage terms there is even larger gap between the indicators of current expenditures and capital investments in the waste management (more current expenditures to 8 in times). According to the various estimates, today the need (difference between current expenditures and capital investments in the waste management) is 76.48 mill. UAH, the average value of capital investment required for development of the circular economy was calculated in range of 3% of the gross domestic product. There is a widespread opinion among experts about extremely unsatisfactory state of the national economy. This was due to a shortage of funds not only in industrial enterprises, but in the state as a whole. There have been repeated proposals to comprehensively modernize industry, to improve the business climate and ensure sustainable economic growth, etc. But all of the "effective" reforms lead to deterioration of economy due to the incompleteness.

6. Conclusion

Today, the industry of Ukraine is in difficult operating conditions due to low financial security of innovation activity. It is associated with a low level of investment attractiveness. The negative trend is exacerbated by instability of the economic situation, national currency and raiding, which are the main prerequisites for reducing investment flows. The depreciation of the national currency is the factors influencing on the index of investment attractiveness, as the labor potential of domestic industrial enterprises has depreciated more than three in times and has become more accessible to foreign investors. Under such conditions, the economic interests of society are leveled. National industrial products don't fully meet the requirements of the world market: quality, environmental performance, high level of resource consumption (material and energy), which negatively affects the profitability of industrial enterprises.

The dynamics of investment capital revealed a decrease in level of investment activity. In the structure of direct investment in industry, the investment-attractive

processing industry remains. So, according to the dynamics of growth the direct investment by types of processing industry in terms of technological levels, a significant concentration of share capital remains at the highest technological levels, such as in the production of chemicals, pharmaceuticals and engineering. This trend confirms the priority areas for attracting investment in advanced technologies. These activities will grow rapidly, which will have a multiplier economy effect for the other industrial and economic activities.

References

Apstaine D., 2018, *Economic and mathematical modeling of development processes of business systems*, Boston: McGraw-Hill.

Buyak L., Kulina N., Pauchok V., 2011, Matematychna model′ planovoho vplyvu na tsinu spozhyvchykh tovariv u rynkoviy ekonomitsi [Mathematical model of planned influence on the price of consumer goods in a market economy], *Naukovyy Visnyk NLTU Ukrayiny*, 21(11): 326-333 [in Ukrainian].

Chu L., Brown D., 2020, *Development of economic systems on the basis of synergetic: theory, models, strategies*, Routledge: Taylor and Francis.

Frooman J., 1999, Stakeholder influence strategies, *Academy of Management Review*, 24(2): 28-34.

Gakhovych N., 2012, Ekolohizatsiya promyslovoho vyrobnytstva yak neobkhidna umova podolannya dysproportsiyi [Ecologization of industrial production as a necessary condition for overcoming disproportion], *Svitova ekonomichna dysproportsiya: osoblyvosti, tendentsiyi, vplyv na ekonomiku Ukrayiny*, 8(36): 94-98 [in Ukrainian].

Gregor R.-P., Tailor W., 2019, *Tools, methods and models for optimizing the economic development of industrial enterprise*, USA: Institutional Shareholder Services.

Gurochkina V., 2020, *Mekhanizmy rozvytku promyslovykh pidpryyemstv v emerdzhentniy ekonomitsi* [Mechanisms of development of industrial enterprises in emergent economy], Khmelnutsk: HNU [in Ukrainian].

Karnegy T., Peterson L., 2020, *Emergency economics: theory and practice*, Nebraska: Nebraska University.

Kruger O., 2001, *Organizational and economic development of emergent systems: analysis and prospects*, Bonn: Central Press.

Melashich J., Starinets I., 2017, *Korporatyvna sotsial'na vidpovidal'nist' yak element stratehiyi pidpryyemstva: mozhlyvosti ta ryzyky* [Corporate social responsibility as an element of enterprise strategy: opportunities and risks], *Economy of Ukraine*, 8: 259-262.

Sidorov M., 2018, *Modelyuvannya ta prohnozuvannya sotsial'nykh protsesiv* [Modeling and forecasting of social processes], Kyiv: Nauka [in Ukrainian].

State Statistics Committee of Ukraine 2020, www.ukrstat.gov.ua [accessed: 31.12.2020].

Telnov A., 2005, *Upravlinnia yakistyu pratsi na promyslovykh pidpryiemstvakh* [Labor quality management in industrial enterprises], Khmelnutsk: HNU [in Ukrainian].

Willson J., McKey R., Cooper A., 2020, *Management of non-additive development of enterprise in the global economy*, New York: Business Press.

Yevdokimov F., Gubska M., 2008, *Sotsial'nyy potentsial yak funktsiya innovatsiynoyi modeli ekonomichnoho rozvytku pidpryyemstva* [Social potential as a function of the innovative model of economic development of the enterprise], *Marketynh: Teoriya i Praktyka*, 14: 68-76 [in Ukrainian].

Ekonomiczne efekty nieaddytywnego rozwoju przedsiębiorstw przemysłowych: analityczny przegląd procesów i transformacji strukturalnych

Streszczenie. *W artykule przedstawiono metodologiczne podejście do oceny efektów nieaddytywnego rozwoju przedsiębiorstwa, w którym uwzględnia się wpływ procesów ekonomicznych na aktywizację działalności produkcyjnej przedsiębiorstwa i jego transformacji ekonomiczno-społecznej. Autor przeprowadził analizę współczesnego stanu nieaddytywnego rozwoju przedsiębiorstw na przykładzie podmiotów sektora przemysłowego Ukrainy, dokonując oceny dynamiki oraz identyfikując kluczowe tendencje w funkcjonowaniu przedsiębiorstw w zależności od głównych rodzajów działalności przemysłowej. Wyniki analizy umożliwiły określenie najnowszych zmian strukturalnych w przemyśle.*

Słowa kluczowe: *analiza, branża, dynamika, przedsiębiorczość, rozwój, szacunki, tendencja*

Zeszyty Naukowe
Wyższej Szkoły Bankowej w Poznaniu
2021, vol. 92, no. 1
DOI: 10.5604/01.3001.0014.9165

Iryna Pasinovych

Lviv Polytechnic National University (Ukraine)
Management and International Business Department
orcid.org/0000-0003-4899-7498
email: irunchyk@hotmail.com

Global trends regarding competence requirements for managers

Abstract. *The article outlines priority directions of modern management, including the need to ensure the stability of companies, the formation of corporate culture, taking into account insights from behavioral economics. The author demonstrates the growing importance of a systemic approach and democratization in management and outlines key global trends in management systems, which include globalization, implementation of the principles of sustainable development, challenges associated with volatility, uncertainty, complexity and ambiguity, rapid technological development, changes in office and managerial work. Against the background of a comparative description of industrial and post-industrial society the author shows that the human capital is currently a key resource and knowledge is the driving force of development. Given these new requirements, key competencies of a modern manager are presented.*

Keywords: *management, manager, sustainability, values, corporate culture, post-industrial society, digital technologies*

1. Introduction

Among the many areas of management, the main one is business management or management of organizations − a systematic management of the company. Business − a form of economic activity based on the principles of economic freedom, economic responsibility, risk-taking, which focuses on obtaining a positive financial result, which is seen as a reward for owners and the main source of development. The success of a business, both small and large, primarily depends on the professionalism of managers, because the company's behavior is the result of management decisions.

The profound changes that are taking place in economic and social life are changing the established ways of doing business and making new demands on the competencies of managers. An additional challenge for managers was the COVID-19 pandemic, which became a test for both business and management systems.

2. Formulation of the problem

The article outlines the priority directions of modern management, including the need to ensure the stability of companies, the formation of corporate culture, taking into account insights from behavioral economics.

3. Presentation

In the context of business, management is the science and art of winning the competition. It acquires a new look − today compete not only goods and services (their novelty is losing relevance, and markets are in short supply), but also the efficiency of decision-making to enter the market to ensure delivery of goods or services to consumers. Business is a movement, who moves fast, wins. According to Klaus Schwab, "Gone are the days when a big fish ate a small one. In the post-crisis world, fast fish will dominate, while slow fish will die out" [Schwab 2016].

Today, the business environment is more changeable and dynamic than ever, and the business itself is undergoing systemic transformations. Preconditions have been formed for the reorientation of companies to maximize financial results in the interests of owners (shareholder capitalism) to a harmonious combination of profitability with the interests of many stakeholders (stakeholder capitalism). The latter is the basis of the concept of corporate social responsibility. In line with these challenges, the company's social and environmental performance is no less important than financial.

Management is the purposeful action on an object to ensure its sustainability, change in condition or behavior due to changing circumstances. In turn, stability characterizes the reaction of the object to certain external influences, its ability to adapt to their action without significant loss of functionality. Ensuring the sustainability of the management object is one of the main management priorities today. This problem is especially relevant in the context of COVID-19, when many businesses have not passed the sustainability test.

In today's world, sustainable success depends not only on what companies produce, but also on how they do it. The importance of values in business is growing. It is the values of business that become the basis of the competitive advantage of Table XXI business. Companies with their own value system, which employs employees and consumers, achieve high efficiency in the long run. Company values (corporate or fundamental values) are the main beliefs on which the business is based; basic principles used in interaction with various internal and external stakeholders. Employees and customers prefer companies whose values coincide with their own. The main values that will be needed in business today and in the future: focus on consumer needs and individualization of demand, honesty and transparency, guarantees of safety and quality.

It is important for the manager to formulate the values around which the work of the team will be built. Then choose a team whose members would share these values. Next − to help each participant find their place, and if necessary − to give a block of knowledge and not interfere with the implementation of the plan, showing confidence in subordinates. It is also important to create transparent and understandable rules of the game.

Any business is first of all a projection of values and vision of the owner, so it is important to separately assess whether the manager and the owner resonate at the value level. If the values of the owner and the manager do not match, it will inevitably lead to conflicts. Also, the company's values should be implemented in recruitment as part of its HR strategy, which, in turn, is part of the overall business strategy. This makes the task of setting values an important factor in driving sales and attracting better employees.

Values form the basis of the company's corporate culture. Building a strong corporate culture has become a global managerial trend around the world. A company in modern conditions cannot exist without its own culture. If it is not consciously created, it will arise in the process of formation and work. The involvement of employees, the establishment of long-term relationships with partners, and the company's image depend on the corporate culture. Corporate culture is formed with its development and is shared by all team members.

Corporate culture is a system of material and spiritual values that reflect the individuality of the organization, manifested in the behavior, interaction and communication of employees with each other and with the external environment. Corporate culture consists of ideas, fundamental values and views that are shared by all members of the organization. It includes the style of behavior, and the style of communication with customers and colleagues, and the activity of employees, their interest, level of motivation and more. The purpose of corporate culture is to ensure high profitability of the firm by improving human resource management [Tarasova, Marinova 2013].

The fundamental aspect of management is the human factor, the relationship between people. After all, all people in the organization work together and have common goals, and management itself is a process of managing the behavior of other people in the interests of achieving these goals. In this respect, management means encouraging people to act in a certain way or to follow a certain course. To manage people professionally and effectively, a manager must have knowledge of psychology, have emotional intelligence, be an effective communicator. The methodology of modern management is based on the theory of behavioral economics (Behavioral economics). This theory explains how people behave and make decisions in situations of uncertainty when they cannot assess the risks and probabilities of future events.

Behavioral economics is a theoretical concept that emerged at the intersection of economics and psychology. The role of psychological factors in driving can be judged from the words of Henry Ford [2007]: "If we learned to resolve psychological conflicts in the process of work, in the next ten years I could reduce the cost of their cars more than I could in the last 15 years" .

Classical theory was based on the concept of "economic man", on the assumption that it acts rationally (*homo economicus*). It was believed that a rational person maximizes utility at the level of consumption, profits − at the enterprise level and so on. In contrast to classical theory, behavioral economics proves that in many situations a person behaves irrationally, economic decisions are often influenced by stereotypes of thinking, prejudice, illusions of perception or ordinary emotions. Behavioral economics pays attention to situations when people behave differently than classical theory predicts, demonstrating dynamically inconsistent behavior, which greatly complicates the process of running a company.

Modern management, which puts the person at the center, must take into account the position of the behavioral economy, although it has both supporters and opponents. Representatives of behavioral science consider management as a process of human interaction. According to her, managers, interacting with people, should use the achievements of psychology and sociology. According to behavioral economics, in many situations, managers should not expect rational behavior, but it can anticipate manifestations of irrationality and direct them in the direction necessary for the company. Based on this concept, the leader can work more effectively with people and influence their behavior. Yes, it is useful to learn to understand and anticipate the actions of partners or competitors, the aspirations of subordinates who may deviate from rational behavior. Today, a valuable employee should not be kept at work only with a high salary with a social package, he is no less important such intangible things as a sense of belonging, recognition, respect − so building a system of motivation, you should take into account these factors.

Among the requirements for modern management should be emphasized systematization and democratization. These are not new characteristics of management, but in modern conditions they acquire special importance.

System management. The manager must think systematically. "Systems thinking is the most suitable tool in the field of management to counter paradoxes. It is the tendency to analyze and synthesize, the ability to separate the essential from the insignificant, to dialectically cover the phenomenon as a whole, in all the variety of elements that make it up, and the connections between them" [Skibitska 2010]. Problems in management are due primarily to the fact that when making management decisions, managers consider a particular problem in isolation, not related to many other aspects of the company. A systematic approach to management helps to minimize the risks of making the wrong decisions. To think "systemically" means that when assessing a problem, many factors that affect it should be taken into account. The antithesis of systems thinking is linear thinking, which aims to find the causes and culprits, to determine the cause-and-effect relationships.

Democratization of management (participatory management) is based on the use of the law of decentralization of management. Management should be not only professional, but also democratic, in the best interests of the people. The administrative-command type of management was based on strict subordination and limited people, the power of the leader grew with the new position, but it was limited. In contrast, democratic governance involves the active role of employees in management processes, their high awareness, the involvement of a significant number of employees in management decisions (including through the transfer of property) (shares and other securities), the introduction of innovations in management structures Democratization of management is based on the relationship between the leader and subordinates, when the actions of the leader cause a positive response.

Among the global trends that have an impact on management systems in organizations, we highlight the following:

– formation of post-industrial society and knowledge economy;
– globalization;
– transition to sustainable development;
– VUCA conditions;
– crisis of meanings and "Big Why?";
– rapid technological development and the need for innovation;
– changes in office work and work of the manager.

1. Formation of post-industrial society and knowledge economy. The analysis of comparative characteristics showed that the differences between industrial and post-industrial society are deep, systemic in nature, which is manifested in both

approaches to the organization of production and management. The comparative characteristics of these two concepts on a number of grounds are given in the Table 1.

In a post-industrial society, the main resource is human capital, and the driving force of development is knowledge. As a result, the volume and content of management activity changes, in comparison with the conveyor production of the times of the founder of scientific management F. Taylor. This requires different approaches to management, a different culture and philosophy of management.

The industrial age was dominated by bureaucracy − clear vertical hierarchies, command and control. This approach can give good results, but in the very short term. Nowadays, in the post-industrial era, thanks to the Internet, the latest tools of interaction and communication, bureaucracy is being replaced by human relations in order to achieve its goals. To do this, the most important thing is to create an environment in which everyone can show their best when there is feedback between the manager and subordinates.

2. Globalization is manifested primarily in the formation of a single socio-economic, political, cultural and information space; allows countries to share experiences and learn from each other, taking advantage of the progress made and taking into account the difficulties they face. There is a need to solve management problems not on the scale of the enterprise, but networks of interconnected organizations, often located in different parts of the world. It is possible to share expertise with a colleague from another part of the world online, open a company and find suppliers and customers without leaving your office.

Globalization means competition without borders, actualizes strategic approaches in business and management. In times of globalization, the practice of attracting foreign professionals with experience who are ready to share this experience as members of supervisory boards is becoming more widespread.

3. Transition to sustainable development. Sustainable development is an integral part of international competition and a basis for access to world markets. The largest corporate responsibility initiative, the UN Global Compact, has 10,500 members who report annually on their progress towards sustainable development. Therefore, managers need to focus not only on profit maximization, but also on a wide range of tasks that are defined by the Sustainable Development Goals.

4. We live in the world of VUCA (V − variability; U − uncertainty; C − complexity; A − ambiguity) [Horney 2015]. The world of VUCA means that a person's ability to adapt to new circumstances, to adapt existing experience, constantly learning; to be productive in conditions of uncertainty and ambiguity is the key not even to competitiveness, but to survival.

Awareness of VUCA principles usually forms the ability of the organization: to anticipate problems and conditions of their spread, to understand the consequences of actions and actions, to understand and appreciate the interdependence

Table 1. Comparative characteristics of industrial and post-industrial society

Sign	Industrial society	Post-industrial society
Factors economic growth	Accumulation of capital in materialized form, natural population growth, technological progress and productivity growth	Introduction of innovations, modern technologies, development of knowledge, information and intangible assets; loss of relevance of forecasts for the global crisis due to the depletion of natural resources
Nature production relations	Dominance of large mechanized production. Prevalence of manual labor and material capital. Technocratic organization of production and labor	Deindustrialization. Services, science, education, etc. prevail. Rapid development of information technology and unmanned production. High production culture
Nature production activities and need specialists	Sectoral division of the economy, production activities are carried out at the enterprise or industry level; needs highly specialized specialists	Universalization of activity. Production activity has a multisectoral nature, is implemented within the territorial cluster, which includes suppliers, associates, etc .; there is a need for highly qualified specialists with systematic thinking
Labor organization	Passive receipt of instructions within the hierarchical organization of labor; there is a large management apparatus to control employees; the emphasis is on finding specific solutions and performing the tasks obtained	Employees must take responsibility for defining and solving tasks, which requires an understanding of the broad context of the work performed; employees face non-standard tasks that they need to analyze and solve on their own
The key competitive factor capacity of enterprises	Reducing costs, entering new markets, expanding production, diversifying production	Generation of new ideas, non-standard thinking, “production” of knowledge and constant training of staff
Type applied technologies	Machine technology	Intelligent, scientific and information technologies based on knowledge
Motivation to work	Priority of lower order needs (material)	Priority of higher order needs (spiritual)
The object of the most effective investment	The object of the most effective investment	Human capital as a carrier of creative potential
The role of knowledge	Public good, a condition for professional activity	Strategic resource of society, the factor of creating competitive advantages, the source of the most democratic power, business

Source: developed by the author.

of variables, to be ready for alternative realities and challenges, to interpret solutions and explain opportunities [Suhayl, Manoj 2015]. VUCA conditions require rapid management action in accordance with the unpredictable transformations that occur in the organization's environment. In such conditions, there is nothing stable, that is, it is a question of stable instability, and organizations and any other socio-economic systems have only one chance of survival − continuous adaptation to new conditions.

5. Crisis of meanings and "Big Why?". The modern world is experiencing a crisis of meaning. In business, this is manifested by inconsistent consumer loyalty, on the one hand, and low employee involvement, on the other. In such a world, the company must find its purpose. Appointment is the same "big why?". The meaning of the company's existence, the argumentation of its right to exist. That is why today there is an urgent demand for a unifying superstructure − "company ideology". Appointment sets the direction for the employee, and ideology is a deep conviction in this direction. Managers often use the instructions: "you have to do the right thing" and "do the right thing" and everything will be fine. It is "ideology" that helps each employee to find this guideline, navigator of what is right for a particular company now and in the future, and apply it in every action.

6. Rapid technological development and the need for innovation. The rapid development of new technologies does not allow companies that do not innovate − such players lose their positions and are forced to cede the market to more innovative competitors. The only way out of the situation of constant technological development of the modern world is the introduction of innovations in the company's activities. Innovation means not only radically new initiatives, but also iterative improvements of existing products and processes, including management.

Extensive use of digital technologies means, among other things, the humanization of labor processes, because as a result, employees spend the time they would spend on routine, technical work, to perform creative, creative tasks, communications. The manager must maximize this potential and use it for the benefit of the organization.

There is a "softening" of the economy − a significant increase in knowledge intensity of modern production while dominating the creative potential of workers, their professionalism and erudition; intellectualization of economic processes − knowledge and unique skills become the main source of enterprise development and business value growth. Therefore, it is important for companies to attract and retain the most talented managers, constantly train and develop staff.

7. Changes in office work and work of the manager. The above-mentioned globalization and technological innovations are changing the established approaches to the organization of the manager's work and the activities of subor-

dinates. Personnel management methods are also changing. The following are changes that require a rethinking of some management practices.

a) Emergence of new forms of employment (Gig economy, part-time economy, remote employment). Due to the widespread use of digital technologies, cloud services in particular, it has become possible to actively use new forms of employment − freelance and remote work. The challenge for managers is to learn how to effectively manage teams with both office staff and freelancers and remote workers.

The number of freelancers in the modern world is growing rapidly, they do not have long-term and formalized contracts with employers. Their earnings are volatile. In addition, these freelancers often live outside the country where they earn money. There is a need to develop flexible working conditions and pay. The response to remote employment has been an increase in coworking. Coworking in a broad sense is a model of organizing the work of people, often freelancers, with different types of employment in a single workspace; in the narrow sense, it is a collective office space where people with different professions and interests, who own or have different companies, work. It is important for today's managers to learn how to effectively manage remote employees and teams, in particular to motivate and control them.

b) Global migration and mixing of nations. In a globalized world, it is common to form teams of people with different views on work processes and life in general. Managers are increasingly forming teams of professionals of different nationalities, competencies and gender. This requires tolerance from managers, the ability to communicate with people from different cultures and worldviews.

c) Use of artificial intelligence (AI) in management. At the heart of AI methods is the ability to self-study and work not on pre-defined teams, but on the results of situation analysis. AI is indispensable for business: it allows you to study the audience, look for customers, assess the quality of employees, look for the causes of defects in products, replace routine manual work with automated, find new knowledge that will help make effective decisions [Shakhovska 2020]. AI helps managers to raise the quality of business processes to a new level and optimize the activities of enterprises. In particular, with the help of appropriate programs, the staff of organizations can establish rapid interaction with customers. An example of this is the use of chatbots, which respond instantly to requests and promptly answer consumer questions. Artificial intelligence is also a reliable helper in the financial sphere.

d) Robotization of office work. Robotization will apply to both technological processes and office work. Routine, repetitive operations that can be algorithmized will be performed by robots. It transforms office life (Office 2.0). According to research by the McKinsey Global Institute, it is possible to automate 50% of work tasks and 30% of actions in six out of ten professions. In order not to

lose their jobs, experts from the World Economic Forum advise to develop the priority skills that modern man must possess. Among them − comprehensive problem solving, develop critical thinking, emotional intelligence and creativity. It is especially important to have these traits in a manager who works with people and should ensure high efficiency of the company.

e) Digital technologies and the use of cloud services. Digital technologies are gradually spreading to all areas of business life. They simplify work, eliminate unnecessary operations, speed up processes, moreover, there are business models that are completely built on the basis of digital technologies. Therefore, digital competence is extremely important for modern managers, because digital technologies open up huge opportunities for business, forcing it to transform.

Tools that allow you to evaluate staff in real time are becoming more common. For example, through special mobile applications that allow internal and external customers to leave feedback and comments on the work of each employee within the projects in which they are involved. There may be different frequency and different evaluation metrics for different staff levels.

In business, especially large ones, there are huge arrays of information that are processed by managers at a certain level. This led to the emergence and use of cloud technology. Cloud technology is a set of tools that perform calculations using remote servers and programs without directly involving the resources of the user's computer. The main convenience of working with cloud services − quick access to information from any device connected to the Internet. Work becomes mobile, there is no need to stay in the office late if there is additional work − you can enter the online office and work from your home computer.

The above contributed to the formation of new management structures − network management. A network structure is a form of organizing collective efforts based on the voluntary interaction of its members based on the combination of their interests, resources, competencies and capabilities. The network brings together independent, self-reliant actors to pursue specific self-interests through a common mission. In such an interaction, there is a special culture of consensus, which is based primarily on trust.

In response to changes in the organization of business processes and their management, organizational design and organizational modeling have emerged. It consists in moving away from stable organizational structures of the classical type (linear, linear-functional, matrix) and the transition to flexible organizational structures. A pool of freelancers and outsourcing partner companies can be formed to attract individual projects or support on a permanent basis.

In the new organizational structures there is a transition to the formation of cross-functional project teams, the life cycle of which is determined by the life cycle of the created product. Each structural unit or line of business may have its own organizational structure of teams, which varies depending on the

needs of the business. The general organizational structure ceases to exist as such. This allows you to quickly change team members, their roles, functions and processes.

To correspond to the dynamics of development, such structures can be regularly reviewed, for example, every six months. As well as viewing job descriptions for each team member. Areas of responsibility and roles can change, adapting to specific business tasks. Accordingly, even the top management team may undergo changes: it will include the team leaders of those projects that are a priority at the moment. And when priorities and projects change, their leaders change, and thus the composition of the company's board of directors.

Company managers must respond to objectively existing trends.

A manager is a person who professionally performs managerial functions; is a representative of a special profession who has the necessary knowledge of the principles and methods of people management.

In the first decades of the twentieth century. In the West, there was a "managerial revolution" that marked two phenomena: the transfer of power in large corporations from owners (Ford, Morgan, Carnegie, Krupp, Siemens, Daimler) to hired managers, and the growing influence of large corporations on government decisions. The term itself was introduced in 1941 by J. Bernheim in his book The Managerial Revolution, in which he proved that the capitalist class is being supplanted by the ruling class. Today, this trend − the transition from entrepreneurial to professional management, when the owner-entrepreneur hires a professional manager (manager) on predetermined terms − is only intensifying.

Around 2010, a semantic interpretation of the manager's role began. If earlier the manager was considered exclusively from the position of the communicator, the manager, today the manager turns to the multidisciplinary expert. An effective manager must understand finance, personnel management (HR), be a strategist, a person who understands technology, knows innovation.

The manager of the XXI century is a specialist who is engaged in creative, intellectual work (desire and ability to constantly update knowledge, possession of a sense of new, ability to manage risks), focused on solving social (leadership style, sociability) and economic (interest in minimizing costs, achieving high corporate results) tasks. At the same time, the competencies that provided sustainable growth yesterday may not be enough today. What until recently was a manager's strength can now become a limiting factor. The task of modern management is to mix competencies and correlate them with an adequate assessment of the situation.

A special responsibility lies with top managers, management elite of the company. A top manager is not only an official, but also a leader, on whom the culture of the organization and the quality of the operational team depend; a two-way communication generator between the owner and the team. Since a top

Table 2. Necessary qualities of a top manager

Professional	Personal
Successful experience in the relevant field (at least 10 years). Analytical and strategic thinking. High self-organization and time management skills. Critical thinking (work properly with information and analyze everything, including their own decisions). Responsibility. Initiative. Leadership qualities. Ability to "ignite" the team, make it believe in the success of the whole company. Flexibility and efficiency in decision making. Dominance, the desire for power (he is not a modest performer, but one who seeks to manage and direct). Delegation. Ability to teach others.	Self-confidence. Physical and mental health. Optimism. Sociability. Stress resistance. Purposefulness. Focus on results. The desire for new knowledge. Persuasiveness in communication and influence on others. Charisma, the ability to attract people. Courage, determination, ability to take risks

Source: developed by the authors.

manager is a high and responsible position, he must have not only the necessary professional but also personal qualities (Table 2).

If hard Skills (technical skills, professional) form the foundation for the effective performance of employee duties, then soft Skills form the necessary infrastructure for productive and coordinated work in a team. Soft Skills is a set of skills that are not part of the professional specialization and relate directly to the communication and organizational aspects of the employee and the organization as a whole. These include proactivity, the ability to make quick decisions, the ability to think critically, sociability, the ability to find the information you need, analyze the rapidly changing market, think creatively, have emotional intelligence and more.

In June 2020, the International Association of Business Schools in an organized panel discussion with experienced CEOs of the world discussed the impact of the coronary crisis on economies and companies, participants concluded that with the onset of the crisis it is Soft Skills, in particular, flexibility, empathy, self-confidence, the ability to avoid burnout, have become key to the sustainability of companies. Analysis of global trends shows that the management of interpersonal relationships − the dominant competence of the manager in the XXI century, And intra-corporate communication − the key to competitive advantage.

It is extremely important for a modern manager to learn quickly and instantly apply knowledge in practice. This skill is already in demand today and will be

one of the key ones in the future. English has a term for it: "just-in-time learning" − learning exactly on time.

4. Conclusions

The modern context requires special qualities and competencies from the manager. The study identified three groups of managerial competencies: those related to people (disclosure of creative potential of employees, the formation of their sense of loyalty and belonging to the company, the ability to organize work in multicultural teams); creation of company ideology and formation of corporate culture; development of digital competencies and formation of flexible organizational structures. Also the key skills of the manager of the XXI table. will be the speed of making the most effective decisions in the time limit and the ability to change.

The current situation in the world requires managers to continuous training and self-development; ability to develop strategies based on the principles of sustainable development, the ability to manage themselves and use their own creative potential.

References

Ford H., 2007, *My Life and Work*, Digireads.com (first published 1922).

Horney N., 2015, *Leadership Agility in a VUCA World: Update – 2015*, http://leadership-agility.net/wp-content/uploads/2015/01/Leadership-Agility-in-a-VUCA-World-1-12-15.pdf [accessed: 12.01.2021].

Schwab K., 2016, *The fourth industrial revolution*, World Economic Forum.

Shakhovska N., 2020 (August, 26), *Vid fantastyky do real'nosti*, https://zn.ua/ukr/tech/vid-fantastiki-do-realnosti.html [accessed: 12.01.2021] [in Ukrainian].

Skibitska L.I., 2010, *Orhanizatsiya pratsi menedzhera. Navchalnyy posibnyk*, Kyyiv: "Tsentr uchbovoyi literatury" [in Ukrainian].

Suhayl A., Manoj J. 2015, *The VUCA Company*, Mumbai: Jaico Publishing House.

Tarasova O.V., Marinova S.S., 2013, Korporatyvna kul′tura yak instrument efektyvnoho menedzhmentu pidpryyemstva, *Ekonomika Kharchovoyi Promyslovosti*, 3(19): 28-32, http://nbuv.gov.ua/UJRN/echp_2013_3_8 [accessed: 12.01.2021] [in Ukrainian].

Globalne trendy w zakresie wymagań kompetencyjnych dla menedżerów

Streszczenie. *W artykule nakreślono priorytetowe kierunki nowoczesnego zarządzania, w tym potrzebę zapewnienia stabilności firm, kształtowanie kultury korporacyjnej, z uwzględnieniem spostrzeżeń wynikających z ekonomii behawioralnej. Autorka ukazuje rosnące znaczenie podejścia systemowego i demokratyzacji w zarządzaniu oraz opisuje kluczowe światowe trendy w syste-*

mach zarządzania, do których należą: globalizacja, wdrażanie zasad zrównoważonego rozwoju, wyzwania wynikające ze zmienności, niepewności, złożoności i niejednoznaczności, szybki rozwój technologiczny, zmiany w pracy biurowej i kierowniczej. Na tle porównawczego opisu społeczeństwa przemysłowego i postindustrialnego autorka pokazuje, że kapitał ludzki jest obecnie zasobem kluczowym, a wiedza jest siłą napędową rozwoju. Wobec tych nowych wymagań przedstawiono kluczowe kompetencje współczesnego menedżera.

***Słowa kluczowe**: zarządzanie, menedżer, rozwój zrównoważony, wartości, kultura korporacyjna, społeczeństwo postindustrialne, technologie cyfrowe*

Editorial requirements

I. Size of manuscript – up to 40 000 characters (roughly 22 pages, 1800 characters per page) including tables and figures. The size of one attachment cannot be larger than 20 MB.

II. Required files

1. Files with the main part of the manuscript (without authors' data, format *.doc):
- title of the article in English and Polish
- concise and factual abstract in English and Polish, from 150 to 300 words, prepared according to structure:
  – purpose
  – methods
  – results
  – conclusions
- keywords in English and Polish (up to 8 words)
- JEL codes: code 1; code 2; code 3 (maximal 3 codes, according to the website of American Economic Association: https://www.aeaweb.org/econlit/jelCodes.php)
- introduction
- body text – organized into chapters/sections, each with a unique title
- conclusion (findings, recommendations)
- bibliography – complete list of referenced sources

2. Files with the title page including authors' data (format *.doc):
- author's first and last name
- academic degree/title
- organization/institution (if applicable)
- ORCID number
- email address
- mailing address

3. Tables
- numbered consecutively and consistently using Arabic numerals
- include a caption and a reference to the data source (e.g. *own research*)
- tables should be referenced in the text by their number rather than expressions such as "above" or "below" (e.g. *cf. Table 1*, not: *see table above/below*)
- do not include blank cells
- any abbreviations used must be expanded below the table

4. Figures, photos and graphics
- editable (formats: *.jpg, *.tif or *.xls)
- photographs – supply source files (preferably *.tif); minimum resolution: 300 dpi
- all figures should be numbered consecutively using Arabic numerals
- for any artwork that has already been published elsewhere, indicate the original source (or otherwise state Source: *own research*)
- apply no lettering in white against black background, whether in bold or italics, and no black fills or excess frames
- if the figure is referenced in the text, use its number rather than expressions such as "above" or "below" (e.g. *cf. Fig. 1*, not: *see figure above/below*)
- provide explanations of any abbreviations used

III. Body text
- margins: 2.5 cm each
- continuous throughout the text, using Arabic numerals, placed at the bottom of page (footer)
- typeface: Times New Roman, 12 pts
- line spacing: 1.5 line
- highlights or emphasis: apply **bold** print
- foreign (non-vernacular) words and expressions: *italicized*
- people's names: give full name (including all given names and last name) at first mention; for any further references – quote last name only
- abbreviations and acronyms: when first used, give the complete phrase (name), including its abbreviation in brackets; onwards – use abbreviation only

IV. In-text citations – APA style (see: APA reference guide, https://www.scribbr.com/apa-style/apa-seventh-edition-changes/)
- are placed within the text and include the author's surname and year of publication:
  Jafari (2003) or: (Jafari, 2010)
- Direct quotes should also contain the page number:
  Jafari (2003, p. 24) or: (Jafari, 2003, p. 24)
- **In the case of two and three authors,** all surnames should be listed with either „and" or „&" placed before the last one:
  Smith and White (2018)... or: (Smith & White, 2018)
  Beggs, Ross and Goodwin (2008)... or: (Beggs, Ross, & Goodwin, 2008)
- **In the case of more than three authors** – only the first author's surname should be given, followed by „et al.":
  Jafari et al. (2018)... or: (Jafari et al., 2018)
- **If the author/editor is unknown**, the first few words of the reference should be used:
  – **if this is the title of a book, periodical or report**, it should be italicised:
  (*Guide to citation*, 2020)
  – **if this is the title of an article, chapter or a website,** it should be placed in quotation marks:
  ("APA Citation", 2020)
- Citing multiple works:
  – **by the same author**:
  Jafari (2015, 2017, 2020) or (Jafari, 2015, 2017, 2020)
  – **by two or more authors**, they should be listed alphabetically by the first author:
  (Jafari & Black, 2010; White, Green, & Brown 2020)
  – **if the author published multiple works in one year,** each work should be cited with consecutive letters of the alphabet following the year, e.g.:
  (Jafari, 2014a, 2014b)
- **Other references containing any additional comments or explanations**, **references to legislation**, court rulings and decisions, as well as links to websites that are provided outside the main body of the text must be numbered consecutively and placed at the bottom of the page (as footnotes) using 10 pts font with single line spacing
- **Citing secondary sources** (only in exceptional cases):
  Jafari (2010) as cited in Black (2016) or (Jafari, 2010, as cited in Black 2016)

V. Reference list
A reference list should be ordered alphabetically by first author's / editor's surname or by title, in the case of works whose author/editor is unknown, and in the case of authors with multiple works, they should be listed chronologically by year of publication.

- **Referencing a journal article**

The basic format is: Author surname, Initial(s)., (Year), Article title (not italicised), Journal title (italicised), Volume (italicised) (issue or part number), page numbers, DOI:

Oppermann, M. J. (2000). Tourism Destination Loyalty. *Journal of Travel Research*, *39*(1), 78-84. https://doi.org/10.1177%2F004728750003900110

- **Referencing a book**

The basic format is: Author/Editor surname, Initial(s)., (copyright year), *Book title* (italicised), edition number (in brackets). Publisher. DOI or URL:

Kotler, P., Bowen, J. T., Makens, J., & Baloglu, S. (2017). *Marketing for Hospitality and Tourism* (7th ed.). Pearson Education. https://doi.org/10.1177%2F0047287507303976

- **Chapter in an edited book**

The basic format is: Surname of the chapter's author, initial(s)., Copyright year, Chapter title (not italicised), In, Editor initial(s)., Surname + (Ed.) or Editor initial(s)., surnames (separated by "&") + (Eds.), *Edited book title* (italicised), edition number and page range (in brackets). Publisher. DOI or URL:

Scott, N. R., & Le, D. A. (2017). Tourism Experience: A Review. In N. R. Scott & J. Gao (Eds.), *Visitor Experience Design* (2nd ed., pp. 30-52). CABI. https://doi.org/10.1080/10645578.2016.1144023

- **Referencing an e-book**

Mitchell, J. A., Thomson, M., & Coyne, R. P. (2017). *A guide to citation*. https://www.mendeley.com/reference-management/reference-manager

- **Referencing a chapter in an e-book**

Troy, B. N. (2015). APA citation rules. In S. T. Williams (Ed.). *A guide to citation rules* (2nd ed., pp. 50-95). https://www.mendeley.com/reference-management/reference-manager

- **Referencing an entire website created by a corporation, institution or group**

Use the following format: Corporation/group/organization name. (year website was last updated/published, month day if given). Title of website. URL:

WHO (2014, November 14). World Health Organization. https://www.who.int/

- **Referencing a single web page**

Use the following format: author surname, initial(s). (year, month day). Page title (italicised). Site name. URL:

Mitchell, J. A., Thomson, M., & Coyne, R. P. (2017, January 25). *APA citation. How and when to reference*. https://www.howandwhentoreference.com/APAcitation

Wymogi edytorskie

I. Objętość manuskryptu – do 1 arkusza wydawniczego wraz z rysunkami i tabelami (40 tys. znaków ze spacjami, tj. ok. 20 stron). Rozmiar jednego załącznika nie może być większy niż 20 MB.

II. Wymagane pliki

1. Część główna manuskryptu – bez danych identyfikujących autorów (w formacie Word):
- tytuł artykułu po angielsku i polsku
- zwięzłe i rzeczowe streszczenie po angielsku i polsku, od 150 do 300 słów, przygotowane zgodnie ze strukturą:
  – cel
  – metody
  – wyniki
  – wnioski
- słowa kluczowe po angielsku i polsku (do 8 słów)
- kody JEL – kod 1; kod 2; kod 3 (maksymalnie 3 kody, według strony American Economic Association https://www.aeaweb.org/econlit/jelCodes.php)
- wstęp
- tekst główny podzielony na rozdziały opatrzone tytułami
- zakończenie (wnioski)
- bibliografia

2. Strona tytułowa manuskryptu, dane autorów (w formacie Word)
- imię i nazwisko autora
- stopień/tytuł naukowy
- afiliacja
- numer ORCID
- e-mail
- adres korespondencyjny

3. Tabele (w formacie Word)
- ponumerowane, opatrzone tytułem oraz źródłem (np. opracowanie własne)
- z odwołaniem w tekście (np. *zob. tab. 1*, a nie: *zob. tabela poniżej/powyżej*)
- każda rubryka wypełniona treścią
- skróty użyte w tabeli – objaśnione pod nią

4. Ryciny, zdjęcia, wykresy itp. (*.jpg, *.tif lub *.xls)
- edytowalne, rozdzielczość zdjęć min. 300 dpi
- opatrzone numerem oraz źródłem (np. *opracowanie własne*)
- pozbawione napisów: półgrubych, wersalikami, białych na czarnym tle, czarnych wypełnień, dodatkowych ramek
- z odwołaniem w tekście (np. *zob. rys. 1*, a nie: *zob. rysunek poniżej/powyżej*)
- z objaśnieniem użytych skrótów

III. Tekst główny
- marginesy: 2,5 cm z każdej strony
- numeracja stron – ciągła, u dołu strony
- czcionka Times New Roman z polskimi znakami, 12 pkt
- odstęp między wierszami – 1,5 wiersza
- wyróżnienia – pismem półgrubym
- słowa obcojęzyczne – kursywą
- nazwiska użyte po raz pierwszy – pełne imię i nazwisko, kolejne przywołanie – samo nazwisko
- skróty – za pierwszym razem pełny termin, a skrót w nawiasie; dalej – tylko skrót

IV. Przypisy bibliograficzne – według stylu APA 7 (zob. reference guide APA, https://www.scribbr.com/apa-style/apa-seventh-edition-changes/)
- Umieszczone w tekście, zawierają nazwisko autora i rok publikacji:
  Jafari (2003) lub: (Jafari, 2010)
- Cytowanie dokładne tekstów wziętych w cudzysłów:
  Jafari (2003, p. 24) lub: (Jafari, 2003, p. 24)
- **Cytowanie dwóch i trzech autorów** – podajemy nazwiska wszystkich autorów, a przed ostatnim wstawiamy „and" lub „&":
  Smith and White (2018)... lub: (Smith & White, 2018)
  Beggs, Ross and Goodwin (2008)... lub: (Beggs, Ross, & Goodwin, 2008)
- **Cytowanie więcej niż trzech autorów**:
  – podajemy nazwisko pierwszego autora i „et al.":
  Jafari et al. (2018)... lub: (Jafari et al., 2018)
- **Brak nazwiska autora/redaktora** – podajemy kilka pierwszych słów tytułu pracy:
  – jeżeli jest to **tytuł książki, periodyku lub raportu** – kursywą:
  (*Guide to citation*, 2020)
  – jeżeli jest to **tytuł artykułu, rozdział lub strona internetowa** – w cudzysłowie:
  ("APA Citation", 2020)
- **Cytowanie więcej niż jednej publikacji**:
  – **jednego autora**:
  Jafari (2015, 2017, 2020) lub (Jafari, 2015, 2017, 2020)
  – **dwóch i więcej autorów** – należy je wymienić w kolejności alfabetycznej:
  (Jafari & Black, 2010; White, Green, & Brown 2020)
  – **jeśli autor wydał w danym roku więcej niż jedną publikację,** to po dacie należy dodać kolejne litery alfabetu, np.
  (Jafari, 2014a, 2014b)
- **Przypisy objaśniające, polemiczne, uzupełniające tekst główny** – numerowane kolejno i umieszczone u dołu strony, czcionka 10 pkt, interlinia pojedyncza.
- **Cytowanie źródeł za innym autorem** (jedynie w szczególnych przypadkach):
  Jafari (2010) as cited in Black (2016) lub (Jafari, 2010, as cited in Black 2016)

V. Bibliografia
Uporządkowana alfabetycznie według nazwisk autorów/redaktorów i tytułów prac niemających autora/redaktora, a jeśli jest więcej prac jednego autora, to należy je zestawić chronologicznie wg dat wydania.

- **Artykuł w czasopiśmie**

Zawiera: nazwisko autora, inicjały imienia, rok, tytuł artykułu (prosto), tytuł czasopisma (kursywą), tom (kursywą) i nr czasopisma, zakres stron, DOI:

Oppermann, M. J. (2000). Tourism Destination Loyalty. *Journal of Travel Research*, *39*(1), 78-84. https://doi.org/10.1177%2F004728750003900110

- **Pozycja książkowa**

Zawiera: nazwisko autora/redaktora, inicjał imienia, rok praw autorskich, tytuł książki (kursywą), numer wydania (w nawiasie), wydawnictwo, DOI lub URL:

Kotler, P., Bowen, J. T., Makens, J., & Baloglu, S. (2017). *Marketing for Hospitality and Tourism* (7th ed.). Pearson Education. https://doi.org/10.1177%2F0047287507303976

- **Rozdział pracy zbiorowej**

Zawiera: nazwisko autora rozdziału, inicjał imienia, rok praw autorskich, tytuł rozdziału (prosto), In, inicjał imienia, nazwisko redaktora + (Ed./Eds.), tytuł pracy zbiorowej (kursywą), numer wydania i zakres stron (w nawiasie), wydawnictwo, DOI lub URL:

Scott, N. R., & Le, D. A. (2017). Tourism Experience: A Review. In N. R. Scott & J. Gao (Eds.), *Visitor Experience Design* (2nd ed., pp. 30-52). CABI. https://doi.org/10.1080/10645578.2016.1144023

- **E-book**
  Mitchell, J.A., Thomson, M., & Coyne, R.P. (2017). *A guide to citation*. https://www.mendeley.com/reference-management/reference-manager
- **Rozdział z e-booka**
  Troy, B.N. (2015). APA citation rules. In S.T. Williams (Ed.). *A guide to citation rules* (2nd ed., pp. 50-95). https://www.mendeley.com/reference-management/reference-manager
- **Cały portal internetowy korporacji/grupy/organizacji**

Zawiera: nazwę korporacji/grupy/organizacji. (rok ostatniej aktualizacji, dzień miesiąca, jeśli podano). Tytuł portalu internetowego. URL:

  WHO. (2014, 14 listopada). World Health Organization. https://www.who.int/

- **Pojedyncza strona internetowa**

Zawiera: nazwisko, inicjał autora. (rok, miesiąc, dzień). Tytuł artykułu (kursywą). Tytuł portalu internetowego. URL:

  Mitchell, J.A., Thomson, M., & Coyne, R.P. (2017, January 25). *APA citation*. *How and when to reference*. https://www.howandwhentoreference.com/APAcitation