CONTENTS

Vol. 3, No. 2, 2016

UDC 657.4:658.12

O. Kuzmin
Doctor of Economic Sciences, Professor

M. Yastrubskyy
PhD in Economics, Associate Professor,
Lviv Polytechnic National University

PECULIARITIES OF HIGHER EDUCATIONAL ESTABLISHMENTS FUNDING ACCOUNTING: NATIONAL AND FOREIGN EXPERIENCE

Abstract. The article actualizes issues of funding for efficient scientific, research and development, educational activity during the reform period. The focus on integration of science and education, based on the education quality improvement, requires implementation of new models for the scientific and educational process funding. For the purpose of development of such models, we offer to compare foreign experience of leading educational institutions, represented by the Harvard University, and Taras Shevchenko National University of Kyiv. The majority of higher educational establishments in Ukraine are funded from the state budget within the governmental order. The money, provided to the educational institutions for the state-funded places, essentially form the universities profit. At the same time, the comparative analysis of the budgets of the leading world's university and a national institution of higher education with the privileged funding shows incomparable allocation of funds. The difference in the practice of planning, accounting, control and analysis of financial, informational and material flows generates principal distinctions in the obtained results. The problems of higher educational institutions' economy and management are directly related to financial assurance of the educational process. The models and approaches to funding higher educational establishments in the mode and forms they function now require reforming. It is suggested to apply financial levers due to their interconnection with the factors of efficiency, taken as a basis during the educational establishment's activity assessment. In terms of scope, there emerges a necessity for elaboration of higher educational institutions development strategy, focused on the needs of society and economy.

Keywords: scientific research funding, sources of funding, university, budgeting, endowment, funding model, higher educational establishment.

Literature review. Having reviewed the national and foreign sources that highlight the issue of higher educational establishments funding, we discovered an interesting trend of higher education funding description. When the scientists consider the issue of the higher education funding, they normally focus on deepening the existing models, stressing on the budget foundation of funding.

Government agencies have slightly different approach to the issue of funding. Considering the financial aspect, they focus on the issues of education reform, de-centralization, the concept of the new Ukrainian school, including higher education school. Thus, after the round-table discussion of "Priority Directions of Activity in the Sphere of Education and Science", within the frames of considering the project of Middle-Term Plan of Priority Actions of the Government for 2017–2020, they took the decision to increase the budget funding of research activities with the aim to form a new research management and financing system and to create conditions for technological breakthrough [1].

In general, the issues of funding higher educational establishments were discussed in the works of the leading Ukrainian and foreign researchers and public officials, among them being G. Becker [2], L. Hrynevych, T. Boholib, V. Heyets and others.

Modern researchers emphasize the fact that the resource support from the government and private sector in conducting scientific research will allow increasing the rating of the national higher educational establishments, and this envisages implementation of the policy, which would stimulate research of the world level [3].

The objective is to study and compare financial support of research and educational activities of the leading Ukrainian and foreign higher educational institutions at the present stage.

Materials of research. The focus on improvement of the quality of education, declared

by the Cabinet of Ministers of Ukraine, implies integration of science and education, creation of technological science parks, transition to project-based financing of research [4]. Each of these components provides for securing appropriate financial instruments that ensure its implementation.

The state uses financial-credit and tax instruments to create the economically favorable conditions for effective carrying out scientific, research and development activities in accordance with the legislation of Ukraine; ensuring by 2025 the increase in science funding from all sources to 3 percent of gross domestic product – the figure determined by the Lisbon Strategy of the European Union [5]. The Law of Ukraine On Scientific, Research and Development Activities also provides for budget funding of the scientific, research and development activities in the amount of minimum 1.7 % of the GDP of Ukraine. The law defines the forms and methods of state regulation and management of scientific as well as research and development activities.

The dynamics of funding higher educational establishments in Ukraine has its regularities, caused, first of all, by the state's internal situation. We will focus on the public higher educational institutions as they make the basis of the higher education system in the country, and they altogether manage to perform the reasonable tasks they are set.

At present, Ukraine is trying to find the best model of financial support for the system of higher education, thus foreign experience of the world's leading higher educational institutions is very relevant.

According to the Times Higher Education World University Rankings (THE WUR), compiled annually since 2004, the 2016-2017 list of twenty world's best higher educational establishments includes 15 educational institutions from the USA. It should be mentioned that the ranking compilers focus specifically on the quality of the education received.

Rating of the world's universities, compiled each year, is based on 13 indicators reflecting the five pillars of universities: education (30 %), research work (30 %), quoting (30 %), internationalization (7.5 %), involvement funds from industry (2.5 %) [6].

The list of leaders permanently includes Harvard University – the most famous and prestigious US educational institution, whose history dates back to 1636. It is therefore appropriate to refer to the experience of building financial security schemes of the institution.

The components of financing received by Harvard University are as follows. The total annual income of the university is 3billion USD, the largest source of financing being private donations (31 %), and students' tuition fees (minus scholarships and grants they received) constituting 21 %. The next important components of the university financing are the actual incomes from intellectual property and its business activities (20 %) ("Other incomes"), the incomes from state grants and contracts (17 %), gifts to university (about 7 %), the funds from non-governmental grants and contracts (4 %).

An important role in funding different university programs – both educational and scientific – is played by endowments that are donations made by various institutions and individuals for the university development purposes. The market cost of endowments, formalized as non-profit funds managed by Harvard University, is about 40 billion USD.

Given the available university budget, the expenses are allocated in the following way. From the overall amount of 3 billion USD, the biggest amount (26 %) is spent on financing the educational process. Second in priority are the expenses for scientific research funding (19 %); institutional expenses are third in importance (18 %); 12 % of funding is allotted for additional services maintenance; 12 % goes for the scientists support; maintenance of libraries takes 6 % of the budget; expenses for scholarships to students and scientists take 3 %, and the cost of student infrastructure support constitutes 3 % of the budget [7].

Distribution of incomes and expenses by items is provided in Table 1.

According to the results of the world QS Higher Education System Strength Rankings 2016, Ukraine occupies the 45th place among the countries with the best higher education system, having received 16.6 points out of 100 [8].

The ranking of the top world universities includes two Ukrainian higher educational establishments: Taras Shevchenko National University of Kyiv and V.N. Karazin Kharkiv National University. Funding of Taras Shevchenko National University of Kyiv is privileged. Thus this university financing can be taken as a model. Let us consider the items of income and expenses of Taras Shevchenko National University of Kyiv budget taking data of the 2016 financial year.

Table 1

Items of Income and Expenses of the Harvard University Budget

Items of income		Items of expense	
Item name	Amount, million USD	Item name	Amount, million USD
Private donations	930	Educational process	780
Students tuition fees	630	Scientific research	570
Intellectual property and business activities	600	Institutional expenses	540
Governmental grants and contracts	510	Additional services maintenance	360
Gifts to University	210	Support to scientists	360
Non-governmental grants and contracts	120	Maintenance of libraries	180
		Scholarships to students and scientists	90
		Support of student infrastructure	90
Total	3000		2970

According to official data, in 2016 the funding of Taras Shevchenko National University of Kyiv was 1,132.5 million UAH. Funding of the common fund constitutes 765.9 million UAH, or 67.6 %, and of the special fund – 366.6 million UAH, or 32.4 % of the overall funding.

The receipts from the State Budget of Ukraine (general fund), according to all the budget programs, were directed to payment of wages with benefits – 577.7 million UAH that is 75.4 %; payment for utility services – 15.67 million UAH that is 2.15 % of the total funding; payment of scholarships and other payments to people make 20.6 %, or 158.05 million UAH; business trip expenses constitute 280 thousand UAH (0.04 %); expenses of purchasing food products – 8.56 million UAH, or 1.1 %; use of goods and services – 3.3 million UAH (0.4 %); costs of purchasing equipment and products of long-term use – 2.27 million UAH (0.3 %); costs of arranging conferences – 70 thousand UAH (0.01 %).

In fact, in 2016 the receipts of the special fund by all the budget programs (educational and scientific activities, tuition in vocational schools and colleges) constituted 366.6 million UAH. Revenues to the special fund for training specialists were 344.1 million UAH. Incomes to the special fund to the item “Research, scientific and R&D projects, scientific activities” were 18,531.0 thousand UAH. Receipts from funding grant agreements for the period amounted to 775.7 thousand UAH.

The money of the special fund from the incomings for training of specialists was directed to wages – 176.4 million UAH (59.74 %); utilities – 68.7 million UAH (23.3 %); food products – 16.2 million UAH (5.5 %); current repairs, capital repairs, reconstruction, construction – 4.6 million UAH (1.6 %); household goods, materials for current repair works – 5.07 million UAH (1.72 %); facilities, materials, equipment and inventory – 3.1 million UAH (1.05 %). Each of other expense items does not exceed 1 %.

The money of special fund, received for research, scientific and R&D projects in the amount of 12.95 million UAH, was spent on wages – 8.2 million UAH (63.3 %); purchase of materials – 0.6 million UAH (4.9 %); payment for utility services and energy supplies – 0.2 million UAH (1.7 %); payment for services of the associate contractors in research and development projects – 1.6 million UAH (12.1 %); taxes – 1.9 million UAH (15.1 %); equipment for research and development projects – 0.2 million UAH

(1.3 %); travel allowances – 0.05 million UAH (0.3 %); payment for services and participation in exhibitions and conferences – 0.2 million UAH (1.3 %) [9].

As it is obvious from the data provided, the system of funding and its spending is characterized by the clearly defined trends stipulated, first of all, by the government regulation of the process.

The list of income and expense items according to the common and special fund of Taras Shevchenko National University of Kyiv is systematized in Table 2.

Table 2

Items of Income and Expense of the Budget of Taras Shevchenko National University of Kyiv in 2016

Items of income		Items of expense	
Item name	Amount, million UAH	Item name	Amount, million UAH
Total revenues in the common fund:	765.9	Expenses from the common fund:	765.9
		– wages	577.7
– training of specialists of the 3rd–4th level of accreditation	612.47	– utility services	15.67
– training of specialists of the 1st–2nd level of accreditation	19.48	– scholarships and other payments to people	158.05
– provision of general and enhanced education by boarding schools	16.49	– travel allowances	0.28
– research and R&D projects	74.91	– food products	8.56
– international research and development cooperation	0.07	– use of goods and services	3.3
		– purchase of equipment	2.27
		– holding conferences	0.07
Total revenues in the special fund:	366.6	Expenses from the special fund:	
		– wages	185.9
– training of specialists	344.1	– utility services	69.92
– doing research, scientific and R&D projects performed	18.53	– food products	17.5
– funding grant agreements	0.78	– current repairs, capital repairs	4.6
		– household goods, materials	5.07
		– equipment and inventory	3.1
		– taxes	1.9

Most revenues of the university's special fund are received from training students – 67.8 % of the total amount. The receipts from research, scientific developments, and research and development projects, as well asscientific activities constitute 5.05 % of the total amount earned. The charitable contributions, grants, gifts, payment orders constitute 5 % of the total amount, and in the consolidated budget of the institution this figure is about 1.5 %.

If we compare the same items of income and expense of the leading US university and the leading Ukrainian university, we can note the difference in the ideological and legislative foundations on which the budgets of these educational institutions are based. This

demonstrates the impossibility of direct borrowing or copying budgeting forms of domestic institutions of higher education from the experience of world leaders in higher education.

Since the main evaluation criteria are an international student and teacher mobility, the number of international scholarship programs, the level of research, contributions to innovation, citation of scientific articles, level of educational services, it is just in these areas that it is appropriate to concentrate when forming the budget, thereby stimulating the growth of these indicators due to financial reasons.

It should be mentioned that there are no financial factors of impact, directly stated in the list of ranking criteria, but they are implicitly present in every, if not most, of them. Thus, the criterion of "ratio of students and the number of faculties", which is assigned 20 % of the ranking factor, takes into account a measure of the number of teaching staff to the number of students. In the absence of an international standard, this index aims to identify universities that are able to provide training to small groups and a good level of personal control. [10]. It is clear that this factor is directly related to the salaries and the number of teaching staff.

The criterion of academic reputation, which takes 40 % of the ranking factor, is measured using a global survey, in which a group of scientists is asked to identify the educational institutions, where, in their opinion, the most productive work in their field is carried out. It is clear, that the work effectiveness is greatly dependent on ensuring adequate conditions for research, including material and technical base, assurance of mobility, and other factors that directly depend on funding.

Therefore, financial instruments are interrelated with the factors of effectiveness that are taken as a basis for evaluation of an educational institution. This suggests the need to build a model of financing that even with limited supportive environment would provide a maximum evaluation figure. However, the figure itself is not a goal but rather an indicator of success in progressive development, and sustainability of an educational institution in a competitive market.

At the stage of reforming higher education, there is proposed a new system of governance and financing of science that involves the formation of National Council of Science and Technology, National Research Foundation, the formation of the legal framework for the establishment of state key laboratories and other innovations. The emphasis is on grant funding for research and developments.

Following the results of independent audit performed in 2016 by the experts from the EU in the framework of Horizon 2020 project, there were provided the recommendations, under which scientific and technological innovation system of Ukraine, the principles of its financing and activities need changes and the availability of sound development strategy; and science should focus on the needs of society and the economy [11].

Conclusions and perspectives for further research. The research presented in the article is a component of the comprehensive study on the issue of financing higher educational institutions of Ukraine, and displays the picture of financing at the samples of the leading national and foreign educational institutions. Increase of budget financing of scientific activities, declared by the government [12], provides for developing the relevant plan and determining time limits for bringing such financing to the statutory level. This proves that the research is topical as taking appropriate decisions implies performing relevant calculations, taking into account many factors of influence that, taken together, will ensure the efficiency of financial investments.

The development of the regulatory framework should take into account the effective factors able to bring Ukrainian universities in the category of leading internationally. Which programs exactly require priority funding should be determined by thorough research. The subject will be further developed in the subsequent publications.

References

1. *Ministry in cooperation with experts complements the Government's plan regarding the financing scientific and innovative activity development: Source: http://news.meta.ua/cluster:52853121-MON-splno-z-ekspertami-dopovnili-plan-Uriadu-shchodo-fnansuvannia-nauki-ta-rozvitku-nnovatsino-dialnost./*
2. *Becker G. S. Economic view of life // World economic thought. Through the prism of time. 5T. / Topred. comp. G. G. Fetisov, A. G. Khodorkov.– T. V: In 2 kN. Worldwide recognition. Lectures of the Nobel winners; resp. edited by G. G. Fetisov. /*

G. S. Becker. – M. : Thought, 2004. – Bck. 1. – P. 688–706.

3. *Yastrubskyy M. Y. Financial support of Autonomous research institutions of Ukraine in terms of reforming / N. I. Yastrubskyy // Journal of National University Lviv Polytechnic/ – 2016 No. 846. – P. 190–196.*
4. *About the Program of activity of Cabinet of Ministers of Ukraine resolution of the Verkhovna Rada of Ukraine No. 26-VIII from 11.12.2014.*
5. *About scientific and scientific-technical activity : Law of Ukraine Supreme Council (VVR), 2016, No. 3, P. 25 Source: http://zakon5.rada.gov.ua/laws/show/848-19/page4*
6. *National University rankings: Source: http://unirating.ru/news.asp?lnt=7&id=608*
7. *The cost of training, funding Harvard: Source: http://usedu.ru/harvard-university/8-stoimost-obucheniya-finansirovanie-garvarda.html*
8. *Ukraine is in the TOP 50 countries with the best universities: Source: http://korrespondent.net/ukraine/3685635-ukrayna-v-top-50-stran-s-luchshei-systemoi-vuzov*
9. *KNU of Taras Shevchenko. Official website: Source: http://www.univ.kiev.ua/*
10. *Ranking of world universities 2016: Source: http://total-rating.ru/1609-reyting-universitetov-mira-2016.html*
11. *Homework for 2017: the government's plans to reform higher education and comments polytechnics: Source: http://lpnu.ua/news/2017/domashnye-zavdannya-na-2017-y-plany-uryadu-shchodo-reformuvannya-vyshchoyi-osvity-i*
12. *Ministry in cooperation with experts complements the Government's plan regarding the financing scientific and innovative activity development: Source: http://narodnarada.info/news/mon-spilno-ekspertami-dopovnili-plan-uryadu-news-48907.html*

Vol. 3, No. 2, 2016

UDC 339.5:330.23

A. Kisiołek
Wielkopolska Higher School of Social Sciences
and Economics in Środa Wielkopolska (Poland)

THE CONDITION OF THE POLISH RESIDENTIAL HOUSING MARKET IN 2015–2016

Abstract. The building sector is one of the key sectors of the national economy. The article presents a general condition of the residential building market in Poland. In the course of the discussion it is emphasised that the sector depends on the absorption of the EU funds as well as the direction set out by the concept of sustainable building. Among other things, the article also provides the data regarding the development of residential housing in the specific voivodeships, the number of building permits issued and the (PMR) Construction Climate Index. Finally, the influence of the building sector on the development of the Polish economy is explicitly marked.

Keywords: building market, economic situation of the building sector, construction-assembly production, residential housing, developer market.

Formulation of the problem

The building sector is experiencing changes related to the problem of competitiveness (unstable market, unpredictable future economic situation), the implementation of modern, "sustainable" technology as well as the need to ensure the quality of the building objects at all stages, i.e., design, construction and exploitation.

The building market in Poland, including the residential housing sector, is one of the key sectors of the domestic economy and, as such, is often used as a yardstick to measure against in the discussions regarding its present conditions and prospects for development. The dynamics of this sector is strictly contingent upon the absorption of EU funds as well as the most recent trends related to the implementation of the concept of sustainable development present in all EU member states. Therefore, an analysis of its condition is crucial not only for economists, but also engineers, in both the micro- and macroeconomic aspect.

Analysis of recent research and publications

The condition of the building market is frequently discussed in the academic literature. At the same time, the building industry, considered a macroeconomic spinning wheel for the Polish economy, is often taken as a litmus test for the analysis of its economic condition in general. Scientific reports focus predominantly on the trends and directions of development of sustainable building, which, according to L. Czarnecki and M. Kaproń, constitutes "the building industry of the future" [1, p. 72–73]. The issue is also discussed by Z. Paszkowski [2, p. 194], M. Piasecki [3, p. 34], or A. Pabian, the author of an interesting concept of sustainable building process [4, p. 50].

Problems relating to the economic condition of the Polish building sector, specifically, residential housing, although seemingly less popular, are discussed, among others, in "Materiały Budowlane", (a monthly journal, articles by M. Kowalska or J. Koblyarz), or "Inżynier Budownictwa" (published by the Polish Chamber of Building Engineers, articles by M. Wielgo).

The purpose of the article is to carry out a consolidated analysis of the economic condition of the residential building sector in Poland in the period 2015–2016.

Presentation of the main material

According to the statistics of the Main Statistical Office, in 2015 140.710 flats were commissioned, which is 3.2 % more than in 2014. However, the ostensible growth is a consequence of the falls experienced in the two previous years, compared to the results obtained in 2012. In order to have a more objective picture, one should consider the fact that in 2014 143, 2 thousand flats were commissioned, which is 1.4 % less than in 2013 (145.1 thousand) which, in turn constitutes a fall by 5.1 % compared with 2012 [5, p. 66]. The detailed statistics are provided in Table 1.

The forecast for 2016 looks optimistic, as the number of flats under construction is

168,4 thousand, i.e., 14 % more than in 2015 [5, p. 66]. However, this single fact does not constitute a sufficient basis for any predictions concerning the future economic condition. Crucially, it is the building permits issued in a given period that should be considered the most telling indicator, as they underlie future investments. The analysis of the relevant data in this respect will be presented here in the course of the chapter.

Table 1

Residential housing in period Jan. – Dec. 2015 in selected voivodeships

Voivodeship	Flats		Usable space		Average usable space of flat [m²]	Number of flats under construction
	absolute values	I – XII 2014 = = 100	[m²]	I – XII 2014 = = 100		
1	2	3	4	5	6	7
Total (level A)						
POLAND	**147 710**	**103.2**	**14 797 089**	**102.5**	**100.2**	**168 403**
dolnośląskie	13 959	100.0	1243300	99.0	89.1	16 860
kujawsko-pomorskie	6 715	107.5	669 114	106.9	99.6	6 631
lubelskie	6 248	109.7	659 020	105.5	105.5	7 653
lubuskie	3230	96.3	312 394	100.5	96.7	4 000
łódzkie	7 167	110.2	815 622	10.6	113.8	7 498
małopolskie	14 723	94.2	1 572 593	98.6	106.8	19 373
mazowieckie	29 095	94.9	2 664 364	94.9	91.6	34 964
opolskie	1 731	89.5	224 523	92.1	129.7	1 613
podkarpackie	7 645	118.8	830 814	110.7	108.7	7 159
podlaskie	4 772	113.7	481 082	108.1	100.8	4 746
pomorskie	13 123	120.5	1 140 337	111.6	86.9	13 925
Śląskie	10 138	104.0	1 219 811	103.5	120.3	11 066
świętokrzyskie	3 355	95.0	373 854	102.9	111.4	3 168
warmińsko-mazurskie	4 351	100.6	417 884	100.8	96.0	4 300
wielkopolskie	16 168	110.5	1 661 073	109.9	102.7	18 715
zachodniopomorskie	5 290	97.7	511 304	98.5	96.7	6 732
Individual housing (level B)						
POLSKA	**79 731**	**104.7**	**10 815 836**	**103.0**	**135.7**	**78 855**
dolnośląskie	5 762	101.1	760 097	98.6	131.9	5 404
kujawsko-pomorskie	3 986	105.0	16 200	104.5	129.5	3 595
lubelskie	4 407	104.2	553 624	102.1	125.6	4 406
lubuskie	1 814	103.2	231 587	104.0	127.7	1 711
łódzkie	4 917	104.3	666 851	101.0	135.6	4 933
małopolskie	8 385	98.9	1 212 353	100.9	144.6	8 626
mazowieckie	11 975	106.2	1 647 596	100.6	137.6	10 717

Continuation of table 1

1	2	3	4	5	6	7
opolskie	1 400	99.2	203 737	96.3	145.5	1 292
podkarpackie	5 373	107.1	706 148	105.4	131.4	5 066
podlaskie	2 139	99.7	335 642	101.1	156.9	2 281
pomorskie	5 083	106.7	694 835	104.6	136.7	5 438
śląskie	7 282	106.5	1 036 793	105.7	142.4	7 675
świętokrzyskie	2 454	102.9	323 994	106.5	132.0	2 495
warmińsko-mazurskie	2 302	98.2	304 373	99.1	132.2	2 289
wielkopolskie	9 355	113.6	1 238 093	110.8	132.3	9 496
zachodniopomorskie	3 097	101.8	383 913	99.1	124.0	3 431
Cooperative housing (level C)						
POLAND	**2 052**	**58.8**	**115 876**	**58.2**	**56.5**	**1 285**
dolnośląskie	60	56.1	5 073	82.8	84.6	136
kujawsko-pomorskie	–	–	–	–	–	–
lubelskie	108	46.6	5 924	48.4	54.9	299
lubuskie	131	72.0	6 399	65.4	48.8	123
łódzkie	91	69.5	6 451	95.5	70.9	113
małopolskie	–	–	–	–	–	25
mazowieckie	528	39.3	30 181	35.9	57.2	70
opolskie	–	–	–	–	–	–
podkarpackie	375	69.8	20 445	68.5	54.5	249
podlaskie	69	–	3 367	–	48.8	–
pomorskie	225	88.9	12 303	94.1	54.7	–
śląskie	80	333.3	5 474	416.6	68.4	57
świętokrzyskie	39	8.5	2 076	8.7	53.2	50
warmińsko-mazurskie	156	421.6	7 501	489.6	48.1	–
wielkopolskie	72	66.7	3 812	63.9	52.9	36
zachodniopomorskie	118	157.3	6 870	149.5	58.2	127
Premises for sale or lease (level D)						
POLAND	**62 448**	**105.7**	**3 702 108**	**105.2**	**59.3**	**86 498**
dolnośląskie	8 022	109.8	473 114	108.0	59.0	10 810
kujawsko-pomorskie	2 201	103.7	126 547	107.5	57.5	2 874
lubelskie	476	132.5	88 937	137.3	60.3	2 808
lubuskie	1 201	98.6	69 602	104.3	58.0	2 131
łódzkie	1 980	138.3	133 211	154.7	67.3	2 349
małopolskie	6 185	87.3	354 694	90.6	57.3	10 645

End of table 1

1	2	3	4	5	6	7
mazowieckie	16 163	94.2	966 722	92.8	59.8	24 082
opolskie	327	85.4	20 626	87.8	63.1	321
podkarpackie	1 729	219.4	95 410	208.4	55.2	1 818
podlaskie	2 460	127.6	137 421	127.5	55.9	2 438
pomorskie	7 408	133.3	415 613	126.1	56.1	8 281
śląskie	2 558	96.9	168 503	90.5	65.9	3 210
świętokrzyskie	742	143.5	42 713	156.4	57.6	615
warmińsko-mazurskie	1 815	101.7	100 683	102.4	55.5	1 966
wielkopolskie	6 423	106.7	404 913	108.0	63.0	9 025
zachodniopomorskie	1 758	87.5	103 399	90.7	58.8	3 125

Source: [5, p. 66–67]

The analysis of the data provided in Table 1 leads to interesting conclusions with respect to the "regionalisation" of the economic condition concerning the main categories, i.e., individual building, cooperative building, as well as construction of objects for sale or lease.

The analysis of Level A based on the aggregate numbers of commissioned flats in 2015 reveals that the leading building regions in Poland are the following voivodeships: mazowieckie (over 29 thousand commissioned flats), wielkopolskie (over 16 thousand commissioned flats), małopolskie (14.7 thousand commissioned flats) and śląskie (10.1 thousand commissioned flats). It is possible to observe significant disproportions between the specific regions, e.g., the three voivodeships with the smallest number of commissioned flats, significantly below the results obtained by the abovementioned ones, are lubuskie (3.2 commissioned flats), świętokrzyskie (3.3 thousand commissioned flats) and warmińsko-mazurskie (4.3 commissioned flats). The smallest real number of commissioned flats was noted in opolskie (1.7 thousand), yet, given the size of the voivodeship, the results are hardly comparable to the biggest ones.

In terms of market dynamics at Level A (Table 1) – general statistics, voivodeships pomorskie (20.5 %), podkarpackie (18.8 %) and podlaskie (13.7 %) fared the best.

As for Level B (Table 1) – individual building sector, the leading regions were mazowieckie (11.9 thousand commissioned flats), wielkopolskie (9.3 thousand commissioned flats) and małopolskie (8.3 thousand commissioned flats), with the dynamics exceeding the level of 13 % noted in wielkopolskie. In turn, at Level D – building for sale and lease (dominated by developers) mazowieckie (16.1 thousand commissioned flats), dolnośląskie (8 thousand commissioned flats) and pomorskie (7.4 commissioned flats) took the lead. At this point, it should be observed that in terms of market dynamics, the most noticeable stimulation was noted in podkarpackie (119.4 % growth with respect to 2014), świętokrzyskie (43.5 % growth), łódzkie (38.3 % growth), pomorskie (33.3 % growth) and lubelskie (32.5 % growth). Leading regions aside, the data seem to suggest that the most significant agitation was felt in the developers' sector. A conclusion along these lines may also be drawn given the so-called low-base effect.

The structure of the market in 2015 considering the main forms of residential housing is presented in Table 2. Its major segments are individual housing (54 %) and building for sale and lease (42 %). The share of other forms noted and registered by the Main Statistical Office, i.e., cooperative building, public building society construction, municipal building or workplace-related building is marginal (1.4 %, 0.9 %, 1.2 %, 0.3 %, respectively).

Table 2

Number of commissioned flats in period Jan. – Dec. 2015

Forms of residential housing	Jan. – Dec. 2015 r.			
	Absolute values	Structure [%]	Jan.-Dec. 2014 = 100	Average flat space [m²]
Total	**147 710**	**100.0**	**103.2**	**100.2**
Individual	79 731	54.0	104.7	135.7
For sale or lease	62 448	42.2	105.7	59.3
Cooperative	2 052	1.4	58.8	56.5
Building society	1 300	0.9	75.8	49.2
Municipal	1 735	1.2	79.7	40.5
Workplace-related	444	0.3	75.3	65.4

Source: [5, p. 68]

The statistical data concerning the issuance of building permits constitute one of the key factors in the analysis of the current condition of the entire construction market (not only the residential housing sector). According to the statistics of the Main Office of Building Supervision (GUNB), 183.766 building permits for the construction of 209.687 objects were issued in 2015, which constitutes a decrease by almost 4.9 % in comparison to 2014 and indicates a negative, downward trend in the period from 2010 to 2015 [6, p. 136]. The detailed statistics presented in diagram 1 look far from impressive and call for a thorough analysis of the present situation and prospects for the future of the construction market. In the period under consideration, the biggest number of permits was noted in 2011 (221.033, i.e., over 20 % more than in 2015) [6, p. 136]. The fall is significant and cannot be explained away by using simple arguments, such as amendments to the construction law allowing some investors to operate on the basis of notification and not solely upon building permits (which formerly used to be the case).

On 28 June 2015, revised regulations of the Act of 7 July 1994 – Construction Law (Official Journal of Laws 2013, item 1409, as amended) took effect. As reported in the Factsheet of the Main Statistical Office of Building Supervision, pursuant to article 29 paragraph 1 points 1a, 2b and 19a, „detached single-family buildings whose impact zone is limited to the plot or plots on which they were designed, detached one-storey transformer station or container transformer station buildings with the space up to 35 m^2, as well as water supply, sewage, heating, telecommunications and electrical energy (rated voltage max. 1 kV) networks may be constructed on the basis of notification" [6, p. 136].

Yet, in the second half of 2015, the number of single-family building construction notifications was only 4.868, which does not make up for the negative image of the statistics presented. At this point, it should be noted that the legislator expected the number of permits to reach approximately 30.000 annually [4].

A significant number of the abovementioned building permits, i.e., the total of 78.994 in 2015, concerns residential buildings, which allowed preserving a minimal increase tendency for the period 2014–2015, reaching the level of 3.3 % and 1.8 %, respectively.

In turn, in 2015 more building permits for the construction of multi-family residential buildings were issued compared with the period of 2010–2015, the number being 3,936. Detailed information concerning the number of building permits for the construction of single- and multi-family residential buildings issued in the period of 2010–2015 is provided in Diagram 2.

The statistics regarding the multi-family residential buildings plausibly indicate not only the market dynamics, but also a specific shift in consumer trends from the construction of traditional, single-family buildings in the economic system towards the purchase of apartments on the developer market. This section of the market has experienced record growth in recent years. According to the information collected by Dziennik Gazeta Prawna, in 2015 developers in Poland started the construction of 86,500 flats, compared with 2014 – 69.700 and 2013 – 51.300. The progress is thus noticeable, and the statistics indicate an unprecedented growth, which is why the market has seen the stabilization of offer prices

accompanied simultaneously with the growth of transaction prices. Based on the data provided by Narodowy Bank Polski, M. Kwiatkowska reports that an average transaction price in the 2nd quarter of 2016 increased by 1.6 % compared with the analogous period of 2015, which, given the unchanged offer price levels, served to decrease the difference between offer and transaction prices to 3.7 % in mid-2016 (the analogous difference in 2015 was 5.2 %) According to the author of the quoted text, offer prices stabilized due to a significant number of flats, while the level of transaction prices depends on the growing production costs as well as the fact that the developers include finishing works in their offer to meet their clients' expectations [8, A13]. The number of flats, which the developers started to build in between January – June, January – December 2010–2016, is presented in Diagram 3.

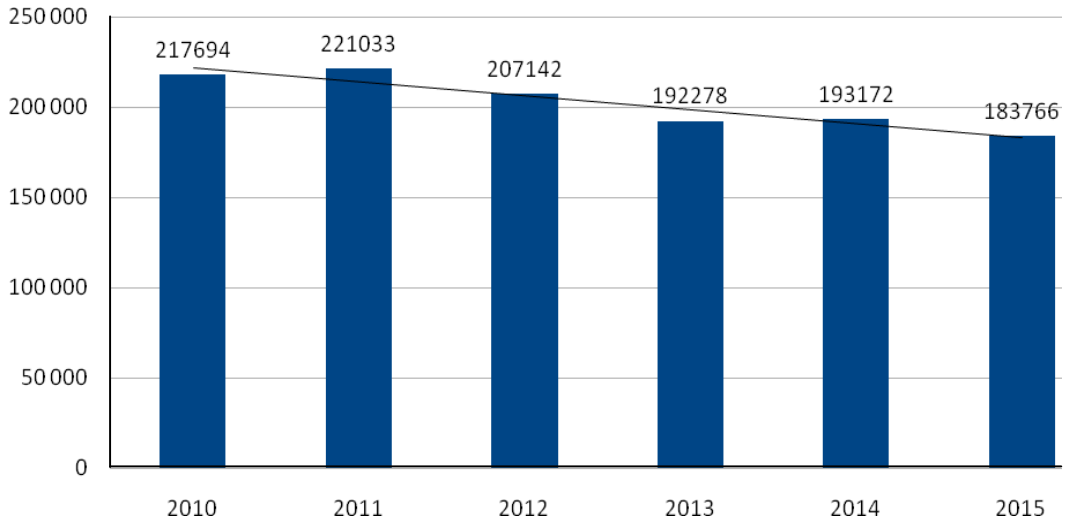

Diagram 1. Building permits issued in 2010–2015

Source: [6, p. 136]

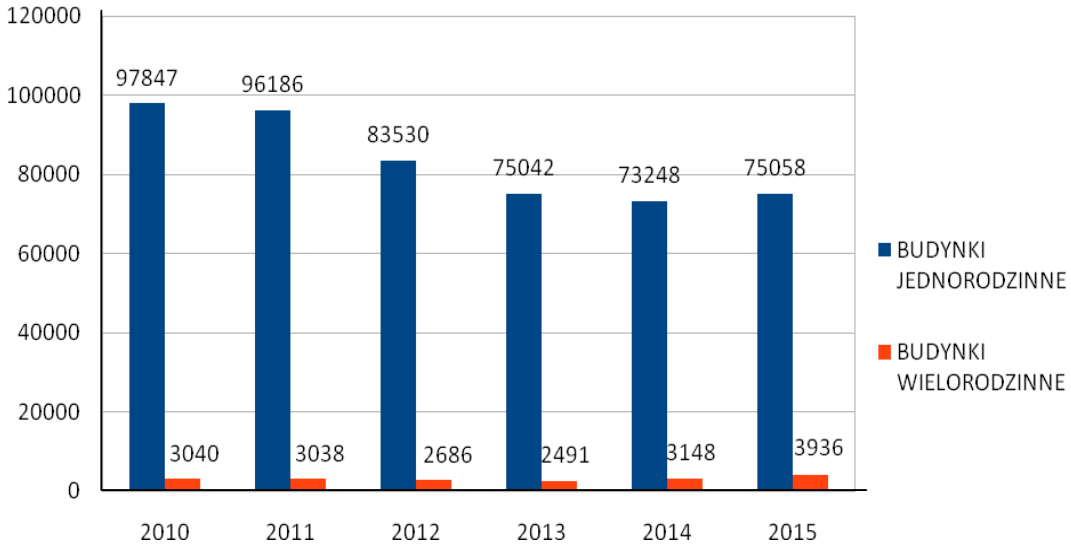

Diagram 2. Number of building permits for the construction of single- and multi-family residential buildings issued in the period of 2010–2015.

Source: [6, p. 136]

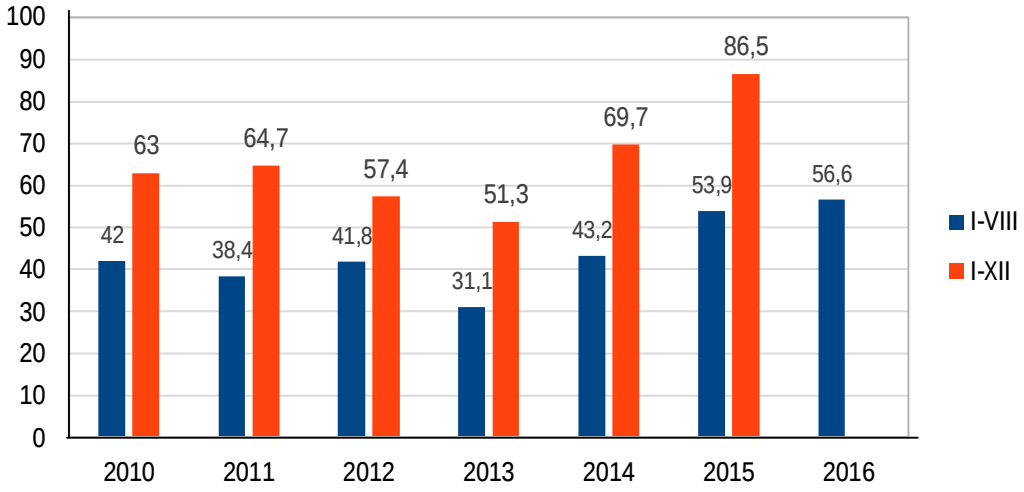

Diagram 3. Flats under construction in 2010 - 2016 (in thousands)

Source: [8, p. A13]

Despite relatively good economic conditions characterizing the first half of 2016 (economic growth, low interest rates, i.e. cheap credits, the approval of the EU budget till 2020) [8, A13], the overall assessment of the market dynamics gives rise to concern, especially when the current situation and the nearest future are taken into consideration. The analysis of the trends over the period of a few years as well as the image of political instability in the international arena force rather conservative forecasts for the future of the construction market and put the current statistics in the center of attention. According to the statistics of the Main Statistical Office for the period of January – September 2016, the sale of building – assembly production (measured in fixed prices) of enterprises with more than 9 employees decreased by 14.9 %. This seems to be the continuation of the annual trend, as the downward tendency was noted in both the 1st and the 2nd quarter of 2016 (13.3 % and 11.9 %, respectively). Decreased dynamics was noted in all sectors of the building industry, the most severe fall experienced in civil engineering (18.9 %), resulting directly from delays in the organization of procurement procedures for these investments. A conspicuous decrease also affected companies rendering specialist construction services (14.3 %) as well as those that specialize in the construction of buildings (11.3 %). Here, companies specializing in the erection of residential and non-residential buildings, the most numerous group in the sector, suffered the most (9.7 %) [9, p. 163]. The detailed statistics are presented in Table 3.

Table 3

Sales dynamics of building-assembly production in enterprises with more than 9 employees in the period from January to September 2016 (measured in fixed prices)

Details	2015				2016			
	I–III	**I–VI**	**I–IX**	**IX**	**I–III**	**I–VI**	**I–IX**	IX
	analogous period in the preceding year = 100							
Total:	**103.5**	**101.0**	**102.0**	**97.5**	**86.7**	**88.1**	**85.1**	**84.7**
Including:								
investment construction works	98.8	98.6	99.2	94.2	87.4	88.4	85.1	85.6
repair / renovation works	113.6	105.7	107.3	103.5	85.5	87.6	85.1	83.1
Sections:								
construction of buildings	99.6	99.7	102.1	92.0	91.4	92.3	88.7	91.4
construction of civil engineering facilities	108.5	102.2	100.9	99.7	79.3	83.0	81.1	77.5
specialist building works	103.8	101.3	103.4	100.8	88.4	88.8	85.7	88.9

Source: [9, p. 163]

The data presented are unequivocally negative. According to B. Tomczak (Market Research and Analysis Center), in 2016 the volume of investments turned out to be most disappointing, since it is investments, not consumption, that guarantee constant GDP growth. According to the Market Research and Analysis Center, investments fell by 1.8 % in the 1st quarter and 4.9 % in the 2nd quarter of 2016 as a consequence of delays in public procurement, which is financed from the EU new budget perspective for 2014–2020. Market analysts consider the decrease to be indicative of the fact that the Polish economy heavily depends on the EU funds [10, p. 64].

While considering the current condition of the building sector, it is interesting to analyse the so-called Construction Climate Index, run for years by PMR. In order to compile a report entitled "The building sector in Poland – 2nd half of 2016. Analysis and forecasts for years 2016–2021", a sample of 200 biggest Polish construction companies (specialist managerial and operational level) were surveyed. The results of the survey are presented in Diagram 4.

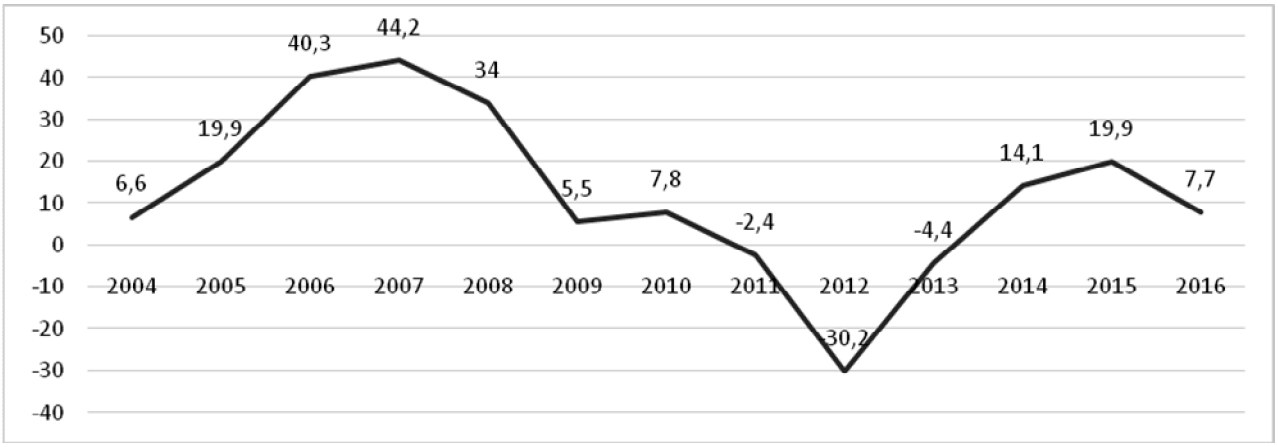

Diagram 4. PMR Construction Climate in Poland Index, 3rd quarter 2004 – 3rd quarter 2016 (data in points)

Explanation: The value of the index for July 2014 is calculated based on five variables and does not allow for the estimate of the order portfolio. The index is theoretically delimited by values -100 (extremely bad climate) to +100 (ideal condition of the construction market). In practice, the index values may fluctuate within the range of -60 to + 60. In case the index is above 50, the market situation may be considered to be very good, whereas value -50 is indicative of a very bad situation. The index is based on the estimate and predictions of big construction companies regarding their own financial situation as well as the situation on the market as a whole.

For August 2016, opinions of 114 respondents were taken into consideration. The mean values for the specific questions constituting the index were calculated except areas where no data were available.

Source: [11, p. 56]

The value of the Construction Climate Index in September 2016 was 7.7 points, which, compared with the 3rd quarter of 2015 (19.9 points), indicates bearish economic mood. The Index value in September 2016 is comparable to the values of 2010 and marks a change of trends in comparison to those in 2014 and 2015. It should be pointed out that given the methodology assumed by PMR, the value of the index discussed here was worse in all the three segments of the construction market, i.e., residential housing, non-residential construction and engineer construction. The falls were noted both with respect to 2015 and 2014.The detailed data are represented in Diagram 5.

The analysis of Diagrams 4 and 5 indicates the beginning of falls of the Construction Climate Index. It is hard to predict whether this tendency will continue or whether, as the PMR analysts suggest, it is a 'transitional technical correction" which is going to change with the inflow of the EU funds related to planned, yet delayed investments [11, p. 56].

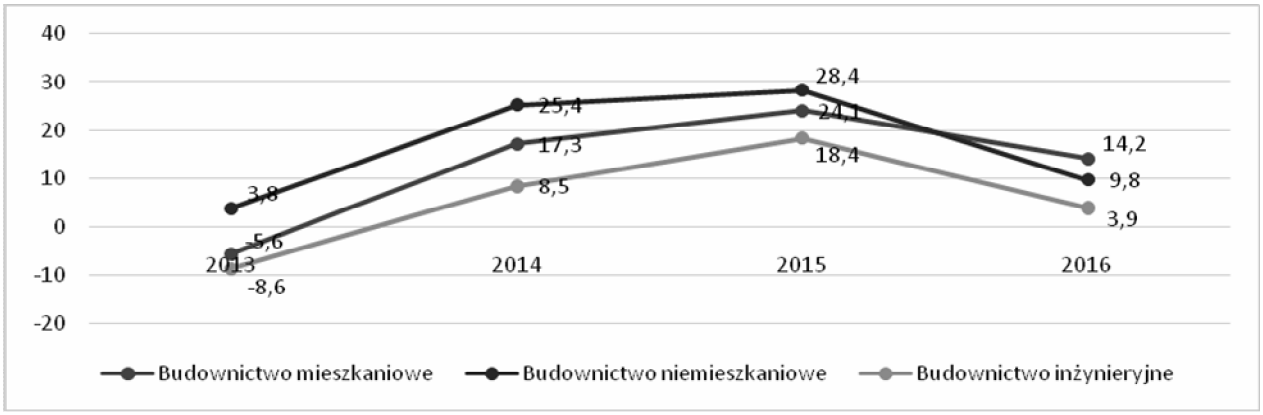

Diagram 5. PMR Construction Climate Index in Poland, 3rd quarter of 2013 – 3rd quarter of 2016, divided into segments of construction market (data in points)

Source: [11, p. 56]

Conclusions and perspectives for further research

According to the analysts of the Market Research and Analysis Centre (CBiAR), the falls noted in the first three quarters of 2016 will not be made up for given the delays (also mentioned here). Unless the market situation changes, one can expect the improvement of the economic conditions on the construction market no earlier than in 2018. Yet another factor pointed out by analysts is the increase of prices of building materials, which may drive a number of companies taking part in tenders bankrupt should they overlook this aspect in their tender bids. The CBiAR analysts also indicate that the reliability of the forecasts of the development of the economic conditions of the construction market in Poland is further affected by the domestic economic and political situation. Finally, they point out that any potential rise in the value of the indicators in 2017 will rather be the consequence of the lowering of the reference base for 2016 [10, p. 65].

Further study of the development tendencies of the economic conditions of the construction market should focus on the level of implementation of the objectives of sustainable construction, realisation of government initiatives in the sphere of residential housing as well as long-term analysis of the residential needs in Poland in comparison to the standards noted in other EU member states.

References

1. *Czarnecki L., Kaproń M. (2012) Budownictwo przyszłości ≡ zrównoważone budownictwo / L. Czarnecki, M.Kaproń// Materiały Budowlane. – 2012. – No. 1.*
2. *Czarnecki L., Paszkowski Z. (2015) Utrzymanie budynków i rewitalizacja obszarów miejskich zgodnie z zasadami zrównoważonego rozwoju / L.Czarnecki, Z. Paszkowski // XXX Jubileuszowe Ogólnopolskie Warsztaty Projektanta Konstrukcji – Szczyrk.–2015.*
3. *Piasecki M. (2010) Metoda oceny budynku pod kątem zrównoważonego rozwoju / M. Piasecki // Materiały Budowlane – 2010. – No. 5.*
4. *Pabian A. (2012) Budowlany proces inwestycyjny w koncepcji sustainability / A. Pabian // Przegląd Budowlany – 2012. – No. 10.*
5. *Kowalska M. (2016) Efekty budownictwa mieszkaniowego w 2015 r. / M. Kowalska // Materiały budowlane – 2016. – No. 2.*
6. *Ruch budowlany w 2015 roku (2016) Informator Głównego Urzędu Nadzoru Budowlanego – Materiały Budowlane – 2016. – No. 4.*
7. *Wielgo M. (2016) Co się dzieje z budownictwem? / M. Wielgo // [Electronic resource]. – Access mode: http://www.inzynierbudownictwa.pl/wydarzenia,o_tym_sie_mowi,artykul,co_sie_dzieje_z_budownictwem_,9138*
8. *Kwiatkowska M. (2016) Rekordowe budowy / M. Kwiatkowska // Dziennik Gazeta Prawna – 27.09.2016. – No. 187. (4334).*
9. *Kobylarz J. (2016) Sprzedaż produkcji budowlano-montażowej i produkcja sprzedana budownictwa w okresie trzech kwartałów 2016 roku /J. Kobylarz // Materiały Budowlane – 2016. – No. 11.*
10. *Tomczak B. (2016) Rok 2017 – wyzwanie dla branży budowlanej? / B. Tomczak // Builder – 2016. – No. 12. (233).*
11. *Sosna B. (2016) Rok dobrych prognoz / B. Sosna // Builder – 2016. – No. 12. (233).*

Vol. 3, No. 2, 2016

UDC 657.1:658.011

I. Yaremko
Doctor of Economic Sciences, Full Professor,

N. Podolchak
Doctor of Economic Sciences, Full Professor

L. Pylypenko
Doctor of Economic Sciences, Associate Professor

O. Tyvonchuk
PhD in Economics, Associate Professor
Lviv Polytechnic National University

CONCEPTUAL MODEL OF ADAPTIVE BALANCE SHEET FORMAT OF CORPORATIONS IN POSTINDUSTRIAL ECONOMY

Abstract Financial reporting is one of the main tools for providing information to market agents about business performance and financial position of corporations. The current format of financial reporting envisaged by the international and national standardization systems and other mandatory documents limits the possibility of complete and objective representation of corporations' economic potential. The major deficiencies of the current format of financial reporting include the inability of faithful representation of intangible factors of corporations' economic potential, as well as ignoring capital obsolescence due to the high level of dynamism of economic development.

The article presents the conceptual and methodological approaches to address the above problems. The application of intellectual capital maintenance concept in financial reporting framework permits to formulate methodological guidelines for adequate representation of intangible component of corporation economic potential on the balance sheet. The methodological approaches to moral depreciation of fixed capital disclosure in financial reporting, based on the provisions of organic balance sheet theory, are substantiated.

Keywords: financial reporting, format of financial reporting, concepts of capital maintenance, economic potential of corporations, moral depreciation.

Formulation of the problem. Financial reporting is traditionally considered to be the main public formalized information tool for disclosing financial position and operating results of business entities. However, the format of public financial reporting being used in modern practice is not able to meet the information needs and demands of users, especially regarding the identification of the long-term development potential of corporations.

The low level of reporting format consistency with business conditions in post-industrial economy is caused, primarily, by the theoretical and methodological limitations in representing the key factors generating economic benefits, among which the factors of intangible (information and intellectual) type play a determining role. Overall, in the last 8 years the market capitalization of the leading high-tech corporations has increased by 3–7 times (Apple Inc. – from 76.83 billion USD to 596.99 billion USD, Alphabet Inc. – from 95.31 billion USD to 514.92 billion USD, Facebook – from 56.13 billion USD to 326.36 billion USD), while this indicator for corporations of other sectors has the declining trend. The NASDAQ index of stock market, which specializes in high-technology stocks, even did not respond to the crisis of 2008. On the contrary, during 2008–2009 it increased by 4 %. Analysis of the market capitalization of the leading high-tech corporations (postindustrial type companies) has shown that almost 70–90 % of their value is formed by intangible factors, which aren't presented in the system of accounting and financial reporting. The reports also do not reflect the moral depreciation of fixed capital that is a substantial flaw in conditions of highly dynamic technology development and technological aging.

Nowadays the system of indicators of public financial reporting, the balance sheet, in particular, remains the only tool for information support,

which complies with the common principles of its formalization. However, the reporting format must be adjusted to the users' needs in order to restore confidence in reporting as an instrument of informing the public about financial position and performance of market entities. This requires substantial revision and improvement of methodological basis of its formation.

Analysis of recent research and publications. The issues of the theory and methodology of financial reporting of corporations and its adaptation to the current conditions of the economy have been studied in the works of many Ukrainian and foreign scientists. Significant contributions have been made by M. Bondar, O. Bradul, F. Butynets, Z. Hutsaylyuk, V. Zhuk, S. Zubilevych, L. Kindratska, H. Kireytsev, M. Koryahin, V. Kostyuchenko, J. Krupka, P. Kutsyk, S. Lehenchuk, L. Lovinska, N. Lokhanova, N. Malyuga V. Parkhomenko, O. Petruk, W. Sopko, P. Homyn, Y. Tsal-Tsalko, L. Chyzhevska, M. Chumachenko, V. Shevchuk and others. Methodological and organizational issues of financial reporting were the subject of dissertation study of such Ukrainian scientists as J. Ivakhiv, O. Korobko, V. Kulyk, T. Kucherenko, M. Luchko, A. Meysh, A. Ozeran, I. Sadovska, I. Semchuk, O. Kharlamova, J. Sheverya, V. Yudenko etc.

Fundamental theoretical principles of financial reporting were disclosed in the balance sheet theories – static (H. Simon), dynamic (E. Shmalenbach), organic (F. Schmidt) and econometric (P. Chompa). The existing problems in theory and methodology of financial reporting formation, analysis and verification were investigated by the following foreign scholars: N. Antill, J. Baetge, M. F. Van Breda, S. Di Piazza, R. Ecclz, V. Kovalyov, B. Lev, V. McKenzie, M. Matthews, V. Palij, M. Perera, Y. Sokolov, E. Hendriksen, K. Tsygankov.

Despite the considerable amount of research done into the corporate financial reporting development, the problem of its adequacy to current business conditions remains insufficiently investigated.

The purpose of the article is to substantiate the conceptual model of the balance sheet adaptive format, capable to satisfy the information needs of postindustrial companies' stakeholders.

Presentation of the main material. It would be reasonable to look at financial reporting as a model, which, through the abstraction of accounting and reporting methodology paradigm, reflects statics and dynamics of company's capital size and structure. Formal and informative presentation of the company's capital with the account of its components interrelation in financial reporting determines the reporting format.

The format of financial reporting is not just a list of items and their groups (sections) placed in different statements. It is a projection of capital accounting methodology on the requests of society for information. The results of the research [11] have proved that the conceptual model of the format of postindustrial corporations public financial reporting should be based on the emphasis of key criteria, dominating in users information requests (Fig. 1). Such substantiation, with the account of the subject of financial reporting, covers the concepts of capital preservation in its various forms (financial, physical and intellectual) and the theory (paradigm) of capital augmentation – accounting income concepts (accounting interpretation of capital increase from the standpoint of the owner, entity, residual equity, enterprise and fund theories). The theoretical basis of financial reporting format is formed, first of all, by the fundamental balance sheet theories (static, dynamic, organic and econometric) and content accounting theories (economic, sociological, ethical, institutional and others).

Development of the corporations' balance sheet format being relevant to post-industrial economy has been realized by improving the existing balance sheet formats with consideration of their shortcomings described above. The proposed format has been elaborated on the basis of the balance sheet format (Fig. 2), established by the National Regulation (Standard) of Accounting 1 "General Requirements for Financial Reporting" [3], which declares the compliance with the International Financial Reporting Standards. International Financial Reporting Standards, including IAS 1 "Presentation of Financial Statements" [9], do not contain direct descriptions of the balance sheet content. The standards determine only the information (line items) to be presented. So the domestic form of balance sheet has been taken as a basis.

Given the geopolitical circumstances, in particular The Ukraine–European Union Association Agreement and, in this regard, taken by the government commitment to harmonize legislation and regulations, improvement of the financial reporting format should be done with the consideration of EU regulations in this area. At present, the actual imperative that regulates the financial reporting format of the EU economic entities is Directive 2013/34/EU of 26 June 2013 [13]. This Directive implies two alternatives: the horizontal and vertical layout of the balance sheet. Since according to NR(S)A 1 the balance sheet has horizontal layout, the analysis of the balance sheet format according to Directive 2013/34/EU was also done by horizontal layout (Fig. 3).

The analysis of the balance sheet format in accordance with the Directive 2013/34/EU immediately draws attention to "unconventional" position of unpaid capital. The discussions on the position of unpaid capital on the balance sheet have been carrying on for a long time. The unpaid capital of corporation, by its economic essence, is a shareholders' receivable on the shares issued by the corporation. Perhaps it is due to this consideration that the item "Subscribed capital unpaid" is shown in assets side of the balance sheet regulated by the Directive 2013/34/EU. However, application of the method of gross representation of the balance of equity (share) capital, in our view, is unreasonable. Unlike other types of receivables arising from the assets and capital circulation, the shareholders' debt is a short-received means of share capital. Such share capital has no productive energy, it exists only legally (formally), while economically (actually) it does not exist. Therefore, we consider that it would be correct to reflect unpaid capital as a regulator of subscribed capital in Liabilities of the balance sheet.

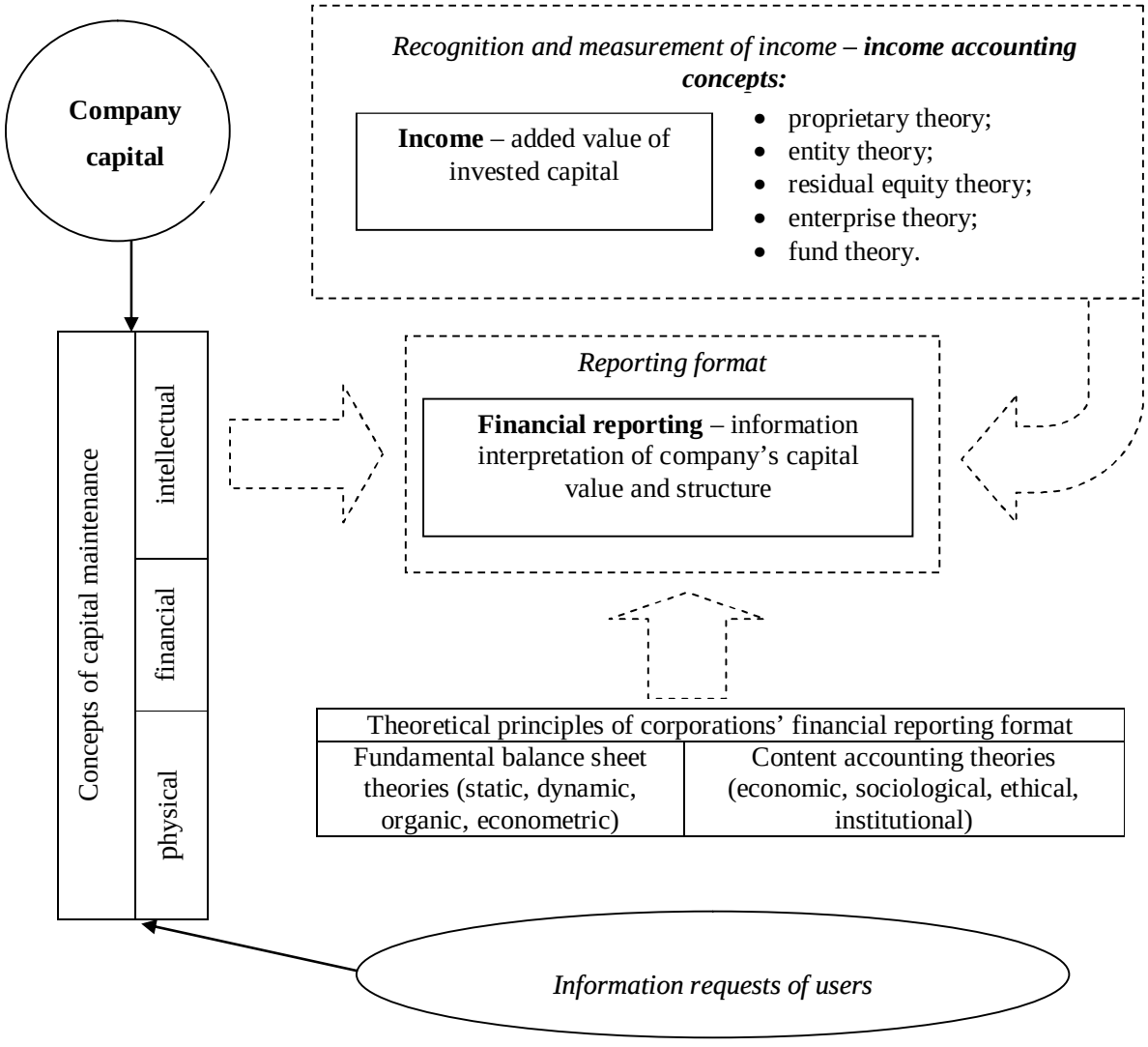

Fig. 1. Conceptual basis of financial reporting format of postindustrial corporations

BALANCE SHEET (Statement of financial position)	
Assets	**Owners' equity and liabilities**
I. Non-current assets Intangible assets Capital expenditures in progress Property, plant and equipment Investment properties Long-term biological assets Long-term financial investments Long-term receivables Deferred tax assets Other non-current assets	**I. Owners' equity** Registered (share) capital Revaluation capital Additional paid-in capital Reserve capital Retained earnings (Non-covered loss) Unpaid capital Withdrawn capital
	II. Long-term liabilities and provisions Deferred tax liabilities Long-term bank loans Other long-term liabilities Long-term provisions Earmarked financing
II. Current assets Inventories Current biological assets Receivables for products, goods, works and services Receivables for settlements Other current receivables Current financial investments Cash and cash equivalents Prepaid expenses Other current assets	**III. Current liabilities and provisions** Short-term bank loans Current payables Current provisions Deferred revenues Other current liabilities
III. Non-current assets held for sale and disposal groups	**IV. Liabilities related to non-current assets held for sale and disposal groups**
Total	**Total**

Fig. 2. The form of the balance sheet in compliance with National Regulation (Standard) of Accounting 1 "General Requirements for Financial Reporting"

Note: source [3]

BALANCE SHEET	
Assets	**Capital, reserves and liabilities**
A. Subscribed capital unpaid	**A. Capital and reserves** I. Subscribed capital II. Share premium account III. Revaluation reserve IV. Reserves V. Profit or loss brought forward VI. Profit or loss for the financial year
B. Formation expenses	
C. Fixed assets I. Intangible assets II. Tangible assets III. Financial assets	
D. Current assets I. Stocks II. Debtors III. Investments IV. Cash at bank and in hand	**B. Provisions**
	C. Creditors
	D. Accruals and deferred income
E. Prepayments and accrued income	**Balance sheet total**
Balance sheet total	

Fig. 3. Horizontal layout of the balance sheet in accordance with the Directive 2013/34/EU

Note: source [13]

One more drawback of the balance sheet form in accordance with the Directive 2013/34/EU is the absence of liabilities' separation by their maturities that complicates the analysis of the balance sheet liquidity and corporation solvency.

The advantage of this balance sheet is the possibility to recognize intangible assets created by the entity itself, provided that the national law permits such an opportunity. However, the principles for recognition and measurement of internally generated intangible assets remain unclear.

Directive 2013/34/EU actually contains only a description of the financial statements and certain concepts of their presentation and disclosure, but does not reveal integrated methodology for their preparation and therefore has fragmentary content. In particular, this Directive does not solve the abovementioned important problems of capital objective representation in financial reporting:

– concerning intellectual potential – under the current balance sheet format there can be proposed two options of reflecting intellectual potential: 1) to reflect it only in Assets side of the balance sheet in "Intangible assets" item line at historical cost, but in this case, the balance sheet total would be underestimated; 2) to present it in Assets in "Intangible assets" item line at the market (fair) value and in Liabilities with revaluation surplus in the line "Revaluation reserve". Yet in this case the level of informativeness of "Revaluation reserve" item regarding risk analysis would be significantly reduced (for this item it is also necessary to present revaluation reserves for non-current tangible assets as well as for intangible assets and financial instruments);

– concerning methodological dualism in assets and capital assessment – Directive 2013/34/EU provides for the possibility of applying the accounting technique of revaluation does not solve the problem because the indexation (which is the most common method of revaluation) is aimed only at eliminating the effects of inflation, but it could not ensure the reproduction of company assets and capital, capital preservation in all its forms with the account of physical and moral depreciation of assets.

All these limitations have been considered while developing the adaptive balance sheet format of corporation (Fig. 4).

The proposed format of the balance sheet of the corporation has several fundamental characteristics different from other types of structural constructions, in particular:

1) all the capital, which, from the corporate and legal standpoint, belongs to shareholders, is grouped in the section "Shareholders' capital". Besides the direct contributions of the shareholders (total nominal value of shares – shareholders (subscribed) capital, adjusted for shareholders' debt and the value of withdrawn shares), it includes components of the corporation's equity not subject to distribution, namely, additional capital (formed as share premium, revaluation of assets in accounting procedures of physical capital preservation, revaluation of financial assets and liabilities in hedging transactions etc.), reserves of capital (reserve capital formed in accordance with the statutory and mandatory requirements and accounting reserves for the shareholders' capital insurance), intellectual capital, as well as the component that can be distributed among the shareholders – income capital – retained earnings of the previous periods and the earned income of the reporting period;

2) although it is not quite clearly visible from the layout of the balance sheet, but proposed format is built on the fundamental dualistic approach to financial and physical capital maintenance. The overall change of the section "Shareholders' capital" total amount reflects its augmentation for the reporting period that actually represents the total economic income of the corporation (excluding payments to the shareholders). However, only a part of it is subject to a possible distribution among shareholders. This is income capital and, in exceptional circumstances (the lack of income capital for dividends on preferred shares payment), reserve capital;

3) 3) along with financial and physical components, it contains a representation of intellectual component of the corporation economic potential in accordance with the concept of intellectual capital maintenance. Such representation implies the reflection of intellectual assets in the Assets side of the balance sheet at fair (market) value, and in Liabilities in section "Shareholders' capital" there is presented intellectual capital according to the methodological principles described in [11];

BALANCE SHEET OF CORPORATION	
Assets	**Capital, reserves and liabilities**
I. Non-current assets Intellectual assets Property, plant and equipment Investment property Capital **expenditures** in progress Long-term biological assets Long-term financial investments Long-term receivables Deferred tax assets Other non-current assets	**I. Shareholders' capital** Subscribed capital Unpaid capital Withdrawn capital Additional capital Reserve of capital, including *– Reserve for moral (technological) depreciation of fixed capital* Reserve capital Income capital Intellectual capital
II. Current assets Inventories Current biological assets Receivables for products, goods, works and services Receivables for settlements Other current receivables Current financial investments *Cash and cash equivalents* Other current assets	**II. Long-term liabilities and provisions** Deferred tax liabilities Long-term bank loans Other long-term liabilities Long-term provisions Earmarked financing **III. Current liabilities and provisions** Short-term bank loans Current payables Current provisions Deferred revenues Other current liabilities
III. Prepaid expenses	
Total	**Total**

Fig. 4. The layout of the balance sheet of the corporation (own development)

Note: proposed by the authors

4) it takes into consideration such an important part of post-industrial corporations' assets as prepaid expenses. On the one hand, they serve as the foundation for the formation of corporation intellectual potential, on the other – it may contain "toxic" assets that would not yield economic benefits in the future. From the point of view of liquidity it is inappropriate to combine these assets with the current ones in one section of the balance sheet. However, they do not form the fixed capital in terms of economic return. Therefore, it is proposed to present these assets in a separate section.

The order of items of Assets and Liabilities sides in the balance sheet (in ascending order of liquidity level / descending order of maturity or vice versa) is not essential for the balance sheet analysis. Creditors are primarily interested in highly liquid assets for solvency assessment, while investors in the post-industrial economy should first of all focus their attention on intangible components of assets and capital, which are the main factor in generating added value and economic benefits. The American practice of disclosure of financial information in reporting implies assets' layout in descending order of liquidity and liabilities' layout in ascending order of maturity. European accounting and reporting regulations mainly determine the reverse order of the assets and liabilities layout on the balance sheet.

Conclusions. The analysis of the content and origin of the deficiencies of current corporate financial reporting format have showed that their overcoming requires the development of conceptual and methodological approaches to accounting of capital. Following the results of the

analysis, we proposed to supplement the generally accepted theoretical basis of financial reporting with some provisions of the organic balance sheet theory adapted to current business conditions, including reproduction value approach to capital evaluation. The proposed adaptation of the approach to the reproductive value measurement in conditions of post-industrial economy involves the formation of reserves on the balance sheets of corporations for moral (technological) depreciation of fixed assets. This will enable to create protective accounting mechanisms against fixed capital impairment caused not only by inflation, but also mainly by its moral depreciation. This also contributes to a more objective characteristic of share capital of corporations in their general purpose financial statements. Applying the concept of intellectual capital maintenance in the conceptual and theoretical basis of financial reporting enables complete representation of intangible (intellectual and information) component of corporations' economic potential.

Thus, by introducing intellectual capital maintenance concept and reproductive value approach to the assets evaluation into the accounting and reporting methodology balance sheet format it was proposed to supplement Assets side of the balance sheet with the item "Intellectual assets" and Liabilities – with the items "Intellectual capital" and "Reserve for moral (technological) depreciation of fixed capital". The inclusion of these items does not just complement the reporting format, but also improves fundamentally its representative capacity, allows reducing the gap between the book and market value of corporations' capital.

References

1. *Baetge J. Bilanzen / J. Baetge, H.J. Kirsch, S. Thiele. – Überarbeitete Auflage, IDW Verlag, Düsseldorf, 2014. – 944 p.*
2. *DiPiazza S. A. Jr., Eccles R. G. Buiding public trust. The future of Corporate Reporting / S. A. Jr. DiPiazza, R. G. Eccles. – JOHN WILEY & SONS, INC., 2002. – 212 p.*
3. *General Requirements for Financial Reporting: National Regulation (Standard) of Accounting 1: Order of the Ministry of Finance of Ukraine of 07.02.2013 № 73. – Available at: http://zakon3.rada.gov.ua/laws/show/z0336-13.*
4. *Zubilevych S. Accounting EU directive and its impact on the composition and content of the reports of European companies and the prospects for Ukraine / S. Zubilevych // Accounting and Auditing. – 2014. – No. 7. – P. 3–15.*
5. *The Conceptual Framework for Financial Reporting 2010, issued by the International Accounting Standards Board (IASB) [Electronic resource]. – Available at: http://www.ifrs.org/News/Press-Releases/Documents/Conceptual FW2010vb.pdf.*
6. *Koryagin M. V. Problems and prospects of financial reporting: monograph / M. V. Koryagin, P. O. Kutsyk. – Kyiv : Interservice, 2016. – 276 p.*
7. *Krupka Ya. D. Balance sheet generalizations and reporting of enterprises in the period of reorganization changes / Ya. D. Krupka, I. J. Nazarov // Economic Journal of Eastern European National University named by L. Ukrainka. – 2016. – No.1 (5). – P. 108–114.*
8. *Legenchuk S. F. Theory and methodology of accounting in the conditions of postindustrial economy: monograph / S. F. Legenchuk. – Zhytomyr: ZDTU, 2010. – 652 p.*
9. *International Accounting Standard 1 "Presentation of Financial Statements" [Electronic resource]. – Available at: http://www.ifrs.org/Documents/IAS1.pdf.*
10. *Ozeran A. V. Theory and methodology of formation of financial reporting: monograph / A. V. Ozeran. – K. : KNEU, 2015. – 471 p.*
11. *Pylypenko L.M. The reporting system of public corporations in conditions of post-industrial economy: Thesis for obtaining the scientific degree of Doctor of economic sciences: specialty 08.00.09 – Accounting, analysis and audit / L. M. Pylypenko.– The National Academy of Statistics, Accounting and Auditing, 2016. – 466 p.*
12. *Yaremko I. Y. Accounting study in the context and format of economics methodology / I. Y. Yaremko, T.V. Fedak // Management and Entrepreneurship in Ukraine: problems and stages of development. Journal of The National Lviv Polytechnic University. – 2009. – No. 647. – P. 547–552.*
13. *Directive 2013/34/EU of the European Parliament and of the Council on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC [Electronic resource]. – Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex %3A32013L0034.*
14. *Schmidt F. Die organische Bilanz im Rahmen der Wirtschaft: Betriebs-und Finanzwirtschaftliche Forschungen / F. Schmidt. – Leipzig.: Herausgegeben von Prof. Dr.F.Schmidt, 1922. – 190 s.*

Vol. 3, No. 2, 2016

UDC 657.1:657.37

V. Voskalo
PhD, Associate Professor,
N. Voskalo
PhD, Associate Professor,
Lviv Polytechnic National University

PRECONDITIONS FOR INTRODUCING INTEGRATED REPORTING IN UKRAINE

Abstract. Transformations taking place nowadays in the global economy require new approaches to scientific research related to providing the users with the information on activities of economic entities. Traditional approaches to presenting information, which are regulated by legislation, do not satisfy the users any more. In modern dynamically changing business environment, both the enterprise management and external users want to possess not only the actual (static) information about the activities of the enterprise but also the indicators that reveal the enterprise potential in the medium and long terms. For modern practices, there are also necessary indexes and indicators characterizing the enterprise activities in the areas that are not directly related to its business activities and achievement of profitability, they being activities in the area of environmental protection, social sphere and infrastructure sector.

Ukraine has already created preconditions for implementing the integrated reporting as a tool for socially responsible business that provides information about the impact of the company's activities on the development of society, economy and environment. The analysis of the differences between the existing and integrated reporting systems shows the role of the integrated reporting, which provides stakeholders (companies, contractors, and society) with essential information on the organization's strategy, management and solution of commercial, environmental and social issues. The integrated reporting has a certain range of users, specific components and sources of information necessary for its preparation and is closely linked with the existing financial and statistical reporting.

Keywords: enterprise, public information, integrated reporting, financial statements, report on progress, sustainable development, social responsibility.

1. Development of integrated reporting in Ukraine

In world practice, more and more enterprises are involved in preparing integrated reporting, which combines various indexes of financial as well as other types of reporting, thus creating a systems information base that takes into account not only the key financial criteria but also economic indicators and information about the implementation of social, environmental and other programs by the enterprise.

In Ukraine, the issues of forming concepts of the enterprise integrated reporting have been dealt with by many scientists, including K. Bezverkhyi T. Davydyuk, R. Kostyrko, N. Lohanova, S. A. Kuznetsova, L. Pylypenko, I. Yaremko, and others.

The needs of modern economy in appropriate information are conditioned by such global challenges of the modern world as social networks, brands, virtualization, the future of retail, corporate social responsibility, the fight for talent, global computerization, demographic changes, the dynamic growth of spending on information in declining economies, the growing unemployment, new factors of instability in the economy, information overloads, global supply networking, global imbalance, increased pressure on markets, growth of strategies for volatile markets etc [1]. As it is almost impossible to process the whole array of existing information flows, different groups of users prefer certain types of information that is needed to assess either the potential possibilities of the economic activities in general or those of specific business processes, the performance of the company, its investment attractiveness, and innovative capacity.

The presented criteria of assessing the potential and the level of effectiveness of modern enterprise activities are described through numerous quantitative and qualitative indicators. In most cases, users get the information to meet their needs from public financial reporting, which characterizes the company by formalized financial indicators. Despite the factor of standardization of

the indicators presented in public financial reporting, many scientists tend to suggest the necessity of reviewing the system of accounting reporting for the purpose of satisfying the increasing information needs of the companies of the third millennium [2].

Ye. V. Mnych highlights the inability of modern accounting reports to satisfy the needs of management, as, according to sociological examination, 90 % of the accounting work done at both business and non-business entities is aimed at preparing tax declarations and tax control [3]. Formed at the legislative level in Ukraine, the system of accounting (financial, tax reporting, statistical) is focused primarily on satisfying the information needs of public authorities (state fiscal services, social insurance funds, statistical agencies), and therefore it is of little use for administrative services of the company itself or its market counterparties. Enterprises have to keep the accountants' staff responsible for the formation of such information, and, at the same time, try to create the information useful for the company's management by involving additional specialists and spending additional resources to support their work.

As to its generalized characteristics and content, the integrated reporting is presented as a system of interrelated and interdependent indicators of the enterprise activities that combines elements of both financial and non-financial reporting. It is believed that integrated reporting enables the company to identify and understand more precisely its strategic advantages and business models, which significantly affect the company value. In addition, integrated reporting discloses the company's sustainable development to external users. Together with business development, large and medium enterprises face other problems associated with the implementation of certain social and other programs for ensuring sustainable development of society.

At the present stage of the Ukrainian society development, the role of state institutions in the country's economy is being reduced and the role of private business is growing. The state has privatized the significant number of enterprises, allowing them to enter adequately the business environment and to become competitive. Investments have caused a significant economic growth of most of them. In addition, the newly creates business entities occupied a considerable niche in the economy. Thus, the role of big business has increased significantly. Accordingly, public expectations are directed now not only at government authorities but mostly at businesses. The accumulation of huge assets by the enterprises of big business necessitated their "protection", heads of many companies took seats in representative state bodies: Verkhovna Rada of Ukraine, the Cabinet of Ministers of Ukraine, regional authorities, which protect the interests of such businesses.

Now the public representatives apply for help not only to public bodies, which have limited possibilities of funding, but also to businesses that have financial resources, and, in many cases, support community initiatives. The role of business in public life is no longer reduced to the timely and complete payment of taxes, but it deals with implementation and financing of socially important projects as well. Thus, the development of businesses is closely associated with their corporate social responsibility; and businesses reflect their programs implementation in the integrated reporting.

The world models of the corporate social responsibility have been formed for a long time and have certain traditions. In America, the establishment of social responsibility began in 60–70s of the twentieth century and in Europe – in the mid-90s. The main social and ecological programs related to corporate social responsibility are implemented in the USA through charitable foundations, in Canada – through implementation of quality improvement and healthy workplace programs, in Europe – through targeted social programs and business projects [4].

The complexity of Ukraine's transition from administrative-command system to market economy caused the primary problem for survival and strengthening of its business niche. A number of problematic aspects of the domestic enterprises transfer to "classic" market conditions as well as financial difficulties experienced by both privatized and newly created entities hardly contributed to the development of corporate social responsibility, though separate programs have been implemented by all major companies in the form of charity, patronage and financing of some social programs on a competitive basis.

The companies, which comply with the corporate social responsibility, having to face the challenges that occur in society (globalization, resource scarcity, unemployment, ecological problems, political impact on business, business

transparency etc.), should seek to get progress in sustainable development to the UN Global Compact, which declares the basic principles of responsible behavior of businesses concerning respect for human rights and freedoms, the environmental protection etc. The companies, which have joined this agreement, should strongly support it, implement its principles in their activities to be able to achieve strategic, cultural outcomes corresponding to this document as well as publish notification of the achieved progress annually (Sustainable Development Report), which is actually one of the varieties of integrated reporting. Notification of the achieved progress is formed according to the following standards: AA1000 series of standards of the International Institute of Social and Ethical Reporting, the Guidance of reporting in spheres of sustainable development, the G8 Declaration "Growth and responsibility in the global economy" and IFRS 1 "First-time Adoption of International Financial Reporting Standards".

Since 2006 Ukraine has a national network of companies and organizations that have declared their commitment to the principles of the UN Global Compact. The basis of the Global Compact is made of 10 principles in the areas of human rights, labor, environment and counteraction of corruption, which constitute a peculiar code of ethical corporate behavior, observance of which is mandatory for the participants in their activities. Despite the voluntary participation, the provision of annual reports on the implementation of Global Compact principles in their daily activities is a requirement for companies.

During 10 years of its existence, more than 8000 companies and other organizations in more than 130 countries joined the initiative. In Ukraine, the UN Global Compact local network has existed since 2006 and unites more than 160 participants – from large international and Ukrainian companies to medium and small enterprises as well as non-governmental organizations, academic institutions, business associations etc. [5]. Based on the concept, in 2013 there was developed the strategy of promoting the development of social responsibility in Ukraine till 2020 [6].

2. Requirements to the preparation and submission of integrated reporting

In Ukraine, the integrated reports now are made and submitted by more than 50 companies, among them Obolon, Kyivstar, Energoatom, Volia, SCM, DTEK, MTS, Metinvest, METRO, Astelit and others. Most of them draw up and submit reports of forms AA1000 and the UN Global Compact, in one of the options chosen by the company: social, environmental, integrated reports, reports on sustainable development, independently choosing the reports' format and structure. Only four companies (SCM, DTEK, Metinvest and Obolon) prepare reports of the GRI3 complex system.

According to the survey of representatives of the largest companies in Ukraine, which were offered to become the founders of the National Business Council for Sustainable Development, the issue of preparation of non-financial reports is relevant for most of them (86 % of respondents). According to the staff research of the Global Reporting Initiative (GRI), 82 % of American and 66 % of European companies believe that the "transparency" of information has a positive impact on corporate reputation. [7] Thus, the promulgated integrated report causes a certain level of respect and trust in the company, making it socially significant.

Preparation and publication of the progress report is useful both for the company and its stakeholders. The research done by Baker Tilly distinguishes such benefits of integrated reporting as a sure way to bring investors the information about the direction in which the company is moving, how it creates its own values and what position it will have in the market and socio-economic environment in a few years. The format of such reporting provides an opportunity to get a concise, information- concentrated version of all available company's documents and reports in one place. The main advantage of such reporting is that the potential investor receives the information necessary for making a decision in favor of the company.

Qualitatively composed and favorably presented, integrated financial and non-financial reporting shows the openness of the company, which, in turn, improves its business reputation, its perception as a reliable partner, strengthening economic relationships and, consequently, increasing the company's capitalization due to accumulated goodwill and other intellectual assets [8].

Financial reports usually contain a lot of concentrated (synthesized) data, in many cases, difficult to understand. In modern practice, many

investors are more interested in marketing approaches used by the company, its corporate policy and social responsibility. Therefore, it is important that the integrated report reveal not only financial indicators, including profit, but also all the main practices of the company, which help it to function effectively.

Integrated reports are universal, more accurately reflecting the interrelation of financial and non-financial factors that affect the company's development. This, in turn, creates a better view of its competitive advantages and the added value that the company generates, in addition to direct revenue. Compliance with international standards requirements to the integrated reporting enhances the quality of the reports and improves communication with their target audience.

The integrated report is useful for the company's management because its functional purpose is to serve as the additional tool to improve the efficiency of management. While preparing the integrated report, the company's management can evaluate practically all aspects of the company's activities as well as the deep processes that either strengthen or cause the destruction of the foundation of the business. In terms of the practical use of this tool for the company's management, it is believed that the better the information in the report is structured, the easier it is to use it for making strategic decisions while managing the company. Research results show that in 71 % of cases the transition to integrated reporting has a positive impact on the effectiveness of decision-making by the company's authorities.

From the perspective of internal corporate management, it is noted that integrated reports improve communication between employees since their preparation involves not only financial staff but also employees from other departments. This interaction, in its turn, accelerates the decision-making in the long term and contributes to a complete satisfaction of the interests of different groups within the company. The positive dynamics of employee engagement, on the one hand, gives them a better understanding of the functioning of the company as a whole, on the other hand, it improves the efficiency of the entire organizational structure.

Integrated reports help to better reveal the competence and achievements of the company, both in the immediate areas of its activities and in other related areas of functioning as well as directly in the practice of management. Complex information disclosure helps customers and partners realize whether they want to use the products and services of this or that company, and it also helps investors understand how profitable their investment into a certain company promises to be. Target research shows that in 91 % of cases the transition to integrated reporting increases involvement of the target audience (customers, investors, and partners) into interaction with the company.

This is because the professionally prepared integrated report allows estimating business activities from the inside, identifying strengths and weaknesses of the company, attracting more partners, investors and consumers, serving as a kind of advertising professionalism and publicity of the company [9].

Considering diversity of information, such a report provides increased transparency of the company's functioning. For example, the report on progress of SCM company provides the description of the business in terms of its types (mining and metal, energy, transport, banking and insurance, real estate, "Shakhtar" football club, machine building, telecommunications, production of clay, media business, agriculture, retail, filling complexes), stresses that the company employs over 300 thousand workers and has more than 100 branches in seven countries. In 2013 the SCM Group invested about 8 billion UAN in the sustainable development, including the professional and personal development of employees, strengthening their health and labor safety, environmental protection and energy saving, improving the quality of life in the regions of SCM activities and developing the business environment. The report has also formulated the SCM Group goals for achieving the sustainable development, they being an integral part of the company's strategy, including safety and health of workers, decent working conditions, improvement of the quality of education, creation of decent life conditions and community development, environmental protection, energy efficiency, compliance with international standards of business ethics.

The company also reports on the implementation of the ten principles of the UN Global Compact in its strategy and activities. On

the basis of non-financial information, the report discloses the company's compliance with the following groups of principles: human rights (implementation of more than 560 social projects, the total investment amounted to more than 240 million UAH), labor standards (health and safety investments amounted to more than 1.6 billion UAH; investments into development of workers – 112 million UAN), environment (modernization of equipment, introduction of ISO 14001 and ISO 50001 standards, development of wind energy; investments into environmental protection amounted to about 5.4 billion UAH), and anti-corruption [10].

In 2013, the International Integrated Reporting Committee (IIRC) has released "consultative version" of the principles of integrated reporting, which is the basis for a new model of reporting that defines the basic concepts, guidelines, content components, describes the procedure of preparation and presentation. In December 2013, BDO, ACCA companies together with IIRC conducted a nationwide presentation of the Standard of Integrated Reporting [11].

The Standard, in particular, implies the reflection of the following information in the integrated report: description of the organizational structure of an enterprise and its interaction with the environment (what the organization does and the conditions in which it operates); the impact of the organization's management structure on its ability to create value in the short, medium and long term; description of the opportunities and risks that affect the organization's ability to create value in the short, medium and long-term, and how the organization copes with them; description of the strategy and resources allocation; directions of development of the organization; description of the business model of the organization and its elasticity; performance of the organization (to what extent the organization has achieved its strategic objectives, and what results it has in terms of capital, which appeared as a result of its activities); opportunities, risks, challenges and uncertainties that may face the organization while implementing its strategy, and what are the possible outcomes for its business model and future activities.

The main components of the integrated reporting are: description of the company activities and its business model, description of the environment in which the company operates, the company's strategic goal and the ways to achieve it, corporate governance structure, sustainability scorecard, forecast indicators. The information generated in such statements will ensure the transparency of the company, which will have a positive impact on corporate reputation. Integrated reporting is designed to provide a high level of trust in relations with employees and investors, appropriate resource allocation decisions, non-financial information base. It will provide more information to investors, government authorities, general public, regulatory authorities, employees etc.

In drawing up the integrated reporting, large and medium-sized companies should use the system of state statistical observations existing in Ukraine, adapting it to international standards. The system of statistical observations accounts and uses both financial and non-financial indicators, particularly those which reflect the impact of enterprises on social processes (employment, wages, and gender indicators), the impact on the environment, energy saving and so on.

Conclusions

Integrated reporting is a powerful tool of expanding information parameters and content that is necessary to the external users interested in different areas of the company's activities (investors, suppliers, customers, general public) and directly to the company's management. The importance of such comprehensive information can be explained by the fact that large and medium-sized companies have a significant influence in the society not only due to their being conscientious taxpayers but also in terms of social responsibility. Many enterprises joined the UN Global Initiative and carry out activities related to developing the territories, ensuring appropriate working conditions and labor security. They participate in social programs, programs associated with the preservation of the environment, energy efficiency and so on.

Integrated reporting of companies should be considered as useful to investors because it displays not only financial indicators but also approaches of the companies to marketing, corporate policy and social responsibility as well as its strategy. Integrated reporting allows objective assessing, in a complex, of the relationship between financial and non-financial factors that

reveal the development of the company, as well as the compliance with the structure of such reporting under the International Standard of integrated reporting, ensures the quality of the reports and improves communication with their target audience.

The practical use of the information base of such reporting allows the management of the company to assess practically all aspects of the company's activities, the underlying processes that either reinforce or cause the loss of potential for doing business. Preparation of integrated reports improves communication between employees since their preparation involves not only financial department but also other departments. Adapted to the conditions and the specifics of the enterprise activities, integrated reports help to better reveal the enterprise competence and achievements in different spheres of its activities and in its adjacent areas of operation as well as the validity of the corporate structure and the management efficiency. Integrated reporting should be considered as a means of decent representation of the company in the market, because it allows assessing the effectiveness of doing business, identifying the strengths and weaknesses of the company, attracting more partners, investors and consumers. In general, it can be stated that the Ukrainian companies that are joining the process, are increasing certain social and environmental standards and improving their image.

References

1. *S. A. Kuznetsova Integrated management reporting, global challenges and local solutions in the era of the noosphere. Nobel Economic Bulletin. 2014. No. 1 (7), 2. P. 270.*
2. *E. Brooking Intellectual capital/E. Brooking; [Trans. from English.]. – St. Petersburg: Peter, 2001. – 288 p.*
3. *E. Mnich Formation and prospects of development of a modern system of accounting and audit in Ukraine / EV Mnich // The world of accounting. – 1997. – No. 1. – P. 32–37.*
4. *R. O. Kostyrko Integrated reporting – tools of socially responsible business. Journal of economic reforms. No. 1 (913) / 2014. – P. 49–54.*
5. *The concept of the National Strategy for Social Responsibility. Source Access: http://www.svb.org.ua/sites/default/files/201108_koncepciya_nacionalnoyi_strategiyi_svb.pdf*
6. *The strategy to promote social responsibility in Ukraine to 2020. Source Access: http://www.svb.org.ua/sites/default/files/201310_strategiya_spriyannya_rozvitku_svb_v_ukrayini_spilnota_svb.pdf*
7. *R.O.Kostyrko The integrated model of reporting companies: background, principles, components // Economics of Ukraine. – 2013. – No. 2 (615), S. 18–28.*
8. *I. Yo.Yaremko, L. M.Pylypenko, O. I. Tyvonchuk. Problems and prospects of reflecting goodwill in the accounting system and financial reporting. Economics, Entrepreneurship, Management. 2015. Vol. 2. No. 2. p. 33–38.*
9. *5 main reasons why companies - leaders prefer to prepare an integrated report. Source Access: http://persona.pumb.ua/ua/club/digest/detail.php?CODE=5-osnovnikh-prichin-cherez-yaki-kompaniyi-lideri-vvazhayut-za-krashche-gotuvati-integrovaniy-zvit*
10. *The progress report of SCM Group for the year 2013. Dzherelo Access: http://www.scm.com.ua/m/documents/ SCM_ GROUP _ COP_2013_ Ru_1.pdf*
11. *Standard output of the integrated reporting in Ukraine .. Source Access: http://www.eba.com.ua/uk/information-support/news-from-members/item/26558-2013-12-24-1629*

Vol. 3, No. 2, 2016

UDC 336.74: 339.744.

B. Ilychok,
PhD in Economics, Associate Professor,
O. Trevoho
PhD in Economics, Lecturer,
Lviv Polytechnic National University

EXCHANGE RATE OF UKRAINIAN CURRENCY – TRENDS AND POTENTIAL CHANGES

Abstract. The article is devoted to topical issues of increasing hryvnia exchange rate potential. There is presented a description of the main factors causing decrease of the exchange rate, namely: the negative balance of payments, galloping inflation, situational decline in demand for Ukrainian exports and large amounts of currency outflow due to shadow economy agents. Ways of reducing the shadow economy in Ukraine are proposed. The results of the proposed measures would reduce the rate of inflation due to increased state budget revenues; reduce the currency outflow from the country due to decreased domestic oligarchs' demand for luxury goods. Consequently, there will improve the balance of payments, depreciation of hryvnia in its commodity coverage will be minimized, and hryvnia exchange rate will potentially stabilize.

Keywords: exchange rate, hryvnia, balance of payments, trade surplus, inflation, shadow economy.

Formulation of the problem

In open market economies the impact of exchange rate changes on the financial system is very significant. In Ukraine, more than half of residents savings (including savings outside of the financial system) are stored in foreign currency, up to 50 % of residents' debt obligations are formalized in foreign currency. Therefore, research into the issues of stabilizing the exchange rate, which serves as a guide on long-term planning of economic agents' activities, is important and necessary.

Analysis of recent research and publications

Exchange rate disbalance that exists in Ukraine's economy causes the necessity to research its aspects and associated problems with the aim to identify effective levers that can ensure the stability of the national currency. A number of domestic and foreign scientists dedicated their works to investigation of the exchange rate fluctuations and its stabilization, among them being O.Bereslavska, E.Brazhnykova, Ye. Vlasenko, E. Voskresenska, V. Heyets, A.Hoychuk, S. Korablin, I. Kryuchkova, O. Patsenko, V. Shevchuk, A. Shulgin and others.

However, in present conditions of the national economy development there remains relevant the issue of using the most effective regulators, capable of ensuring stabilization of the exchange rate in Ukraine as well as activating both domestic and foreign economic activities of the country.

Most of the publications of domestic scientists on the conditions and problems of the hryvnia exchange rate stabilization mostly deal with monetary measures. At the same time, a significant impact on the dynamics of exchange rate is made by the shadow economy. This article is devoted to the issue of maximum consideration of all the factors affecting the exchange rate and finding ways to minimize their negative impact.

The purpose of the article is to study the status and dynamics of the hryvnia exchange rate fluctuations, to identify the main stages and trends of the currency market and to develop scientific and practical recommendations on the use of levers and tools capable of stabilizing the exchange rate and intensifying socio-economic development of Ukraine.

Presentation of the main material

On September 1, 2016 the modern Ukrainian national currency – hryvnia – was celebrating its 20th anniversary. During these 20 years the exchange rate has undergone significant changes.

On September 1, 1996, one could buy 62.89 USD for a hundred hryvnias. Twenty years later, on September 1, 2016 you could buy only 3.70 USD for a hundred hryvnias. Thus, during twenty years, the hryvnia has devalued against the US dollar in 17 times. Such significant negative changes require a detailed analysis of their causes and search for the ways to neutralize these factors of change.

The national money becomes currency since its use in international payments. Exchange rate is the price of any currency in terms other currencies. Thus currency is any instrument of payment that can be used in international payments.

The exchange rate of any currency is set in the currency market while trading currencies from different countries.

The currency price, as any other price, is directly dependent on the demand and is in inverse dependency on the currency supply in the foreign exchange market.

All the factors that affect the exchange rate are displayed integrally through the balance of payments. This applies particularly to the trade balance, which reflects the value ratio of exports and imports of the country's goods and services for a certain period of time. The trade balance consists of two parts – revenue and payments. Their comparison creates an export-import balance. Trade balance is the difference between the value of exports and imports. The trade surplus occurs when the value of exports exceeds the value of imports and the trade deficit is observed when the value of imports exceeds the value of exports.

The trade balance of Ukraine in the periods of 1996–1998 and 2005–2015 was deficit, the major reason of the situation being the negative balance of goods. Its dynamics is shown in Fig. 1.

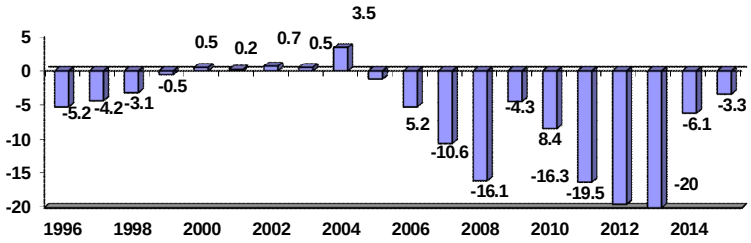

Fig. 1. Ukrainian trade balance of payments, billion USD

Sources: https:/bank.gov.ua/control/uk/publish

According to the information in Figure 1, during 1996-2015 the overall balance of goods of Ukraine's balance of payments was passive and its deficit reached 118.5 billion USD [1].

This deficit can be financed by: a) the gold and foreign exchange reserves of the state; b) a net inflow of capital from abroad. To ensure a net inflow of capital from abroad, the government can borrow from foreigners and sell certain amount of own assets to foreigners.

Every year Ukrainian emigrants transfer about 7.5 billion USD [2]. Over the past 20 years the total amount of currency transfers amounted to about 150 billion USD. These transfers are main funds for supporting everyday life, buying housing, educating children of emigrant families.

A very important factor of stabilizing the exchange rate of hryvnia is that the net inflow of capital from abroad in the form of currency earnings from Ukrainian emigrants during 1996–2015 actually covers the negative trade balance.

The current situation with earnings and expenditures of foreign exchange funds by Ukraine affected the amount of gold and foreign exchange reserves as well as the amount of borrowings (debt).

The dynamics of gold and foreign exchange reserves of the National Bank of Ukraine (NBU) is shown in Fig. 2.

The most favorable years for gold and foreign exchange reserves of the NBU were 2003–2010. During this period foreign exchange reserves increased from 3.4 billion USD at the beginning of 2003 to 34.6 billion USD at the end of 2010, having increased tenfold. [3]

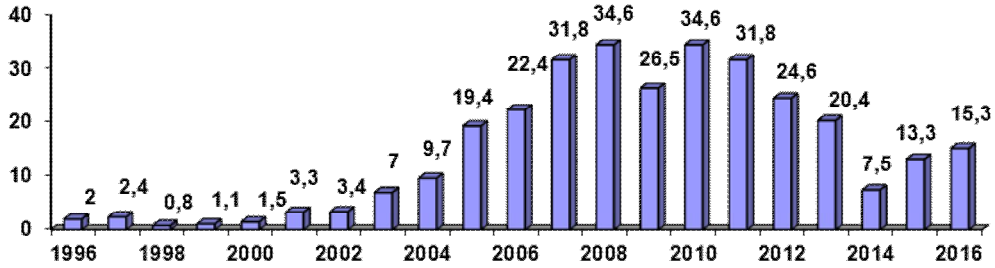

Fig. 2. Dynamics of gold and foreign exchange reserves of the NBU for 1996–2016, billion USD, at the end of the year

Sources: https:/bank.gov.ua/control/uk/publish

According to the information in Fig. 3, during 2005–2013 the national debt of Ukraine was growing. The problem of the amount of public debt in Ukraine has become particularly acute since the beginning of world financial crisis in autumn of 2008.

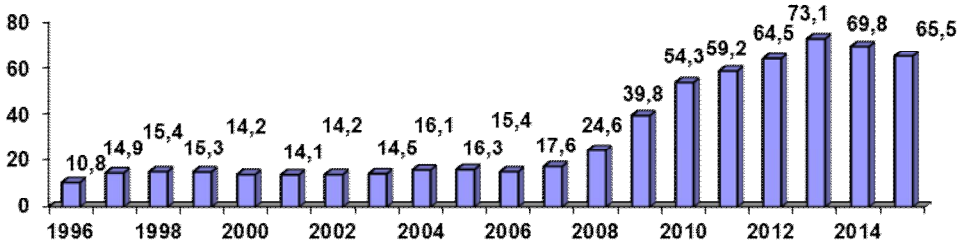

Fig. 3. The public debt of Ukraine during 1996-2015 years, billion USD.

Sources: http://www.minfin.gov.ua/news/view/statystychni-materialy-shchodo-derzhavnoho-ta-harantovanoho-derzhavoiu-borhu-ukrainy|

There are several reasons for the rapid increase in government debt in 2009–2010. Firstly, the government conducted an active stabilization policy including the banking system rescue (experience of South Korea and Thailand in 1997–1998, as well as Latin America from the early 1980s) Actually part of the private debt was replaced by the state debt. Secondly, the government borrowings, by their nature, are not long-term investments, so they do not contribute to sustainable long-term economic growth and debt repayment; more so, they even increase the debt burden. Thirdly, a great part of Ukrainian capital expenditures have no economic justification, there is no mechanism of public investments regulation, transparency of their use, monitoring their efficiency [5].

At the end of 2013 the national debt of Ukraine reached 73.1 billion USD. The public debt of Ukraine has been reducing since 2014. In particular, in 2014 the figure decreased by 3.3 billion USD and by the end of the year was 69.8 billion USD. During 2015 the national debt of Ukraine decreased by 4.3 billion USD and by the end of 2015 amounted to 65.5 billion USD [4].

This negative trade balance of payments had an adverse effect on the exchange rate of Ukrainian currency. After all, between the trade balance and exchange rate there exists inverse relationship. With the deterioration of the trade balance (increasing negative balance), the country spent more money abroad than received it from the sale of its products. For example, in 2012 Ukraine bought 19.5 billion USD worth foreign goods that exceeds foreign sales. In 2013 negativetrade balance increased to 20 billion USD. Thus during just two years 2012–2013 due to the negative trade balance Ukraine “depleted” by 39.5 billion USD [1]. This created reasonable grounds for a potential

reduction of exchange rate in the short term. Since the demand for foreign currency needed to buy imports increased on the foreign exchange market, the currency supply increased as a consequence. This, in turn, contributed to the potential reduction of the hryvnia exchange rate.

Active or passive trade balance characterizes the country's competitiveness on the global market. Given the overall passive trade balance of Ukraine, the competitiveness of domestic products on the world market is insufficient. Domestic scientists, including M. L. Danylovych-Kropyvnytska are paying special attention to this problem and the ways to solve it in their studies [6].

An important factor of the negative impact on the exchange rate in Ukraine is inflation. According to the information in Fig. 5, in Ukraine during the studied period of time there was taking place a significant inflation process [7, p.31]. This led to depreciation of the purchasing power of the national currency and as a result made a potentially negative impact on the exchange rate of hryvnia.

In view of the above, holders of savings in the national currency were trying to convert them into a more stable (hard) currency, such as USD. This contributed to an even greater potential depreciation of the national currency against the US dollar.

Information about the dynamics of the hryvnia exchange rate against the USD during 1996–2015 is shown in Fig. 6.

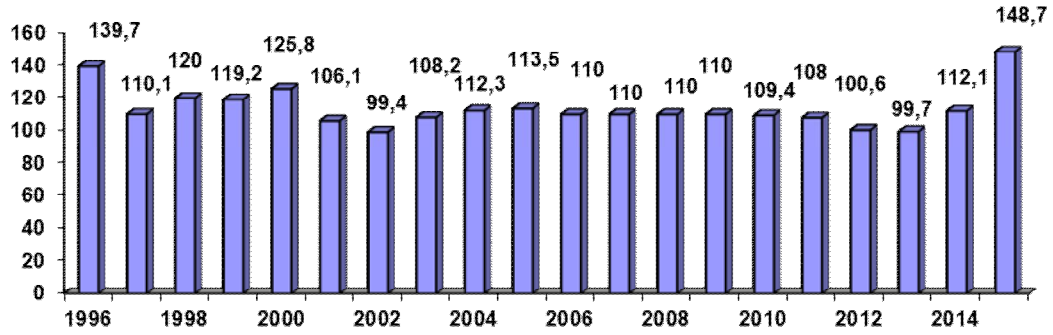

Fig. 5. Inflation (CPI) in Ukraine in 1996-2015, in %

Sources: Statistical Yearbook of Ukraine for 2015. State Statistics Service of Ukraine. – Kyiv, 2016. – P. 31.

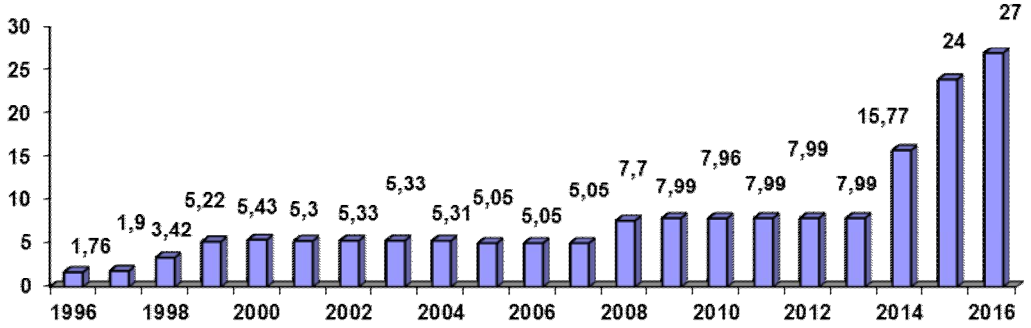

Fig. 6. Dynamics of hryvnia exchange rate against the US dollar during 1996-2016, at the end of the year

In the studied period of time exchange rate was not correlated annually according to the level of hryvnia purchasing power. For example, during 2005–2007, the purchasing power of the national currency due to inflation decreased by 35.3 % (113.5×1.1×1.1 = 135.3). At the same time (according to the monetary strategy of the government and the NBU) exchange rate in 2005–2007 remained stable 5.05 UAH / USD [8]. This disparity couldn't exist in the long run.

During the period of 1996–2015 decreasing of hryvnia exchange rate was not going smoothly, but

abruptly. Over the past twenty years there have been three significant abrupt falls in the exchange rate.

The first – from August 1998 to December 1999, when in the course of "Asian" crisis deployment, the exchange rate of hryvnia against US dollar decreased from 1.9 UAH/ USD to 5.22 UAH/ USD, that is in 2.75 times.

The second – from August 2008 to December 2008, when in the course of the "world financial" crisis the exchange rate of hryvnia against the US dollar fell from 5.05 UAH/ USD to 7.70 UAH / USD, that is by 52.5 %.

The third – from March 2014 to December 2015, when in the process of deploying the "Russian Spring" and the Russian occupation of Ukrainian territory of the Crimea and Donbas, the exchange rate of hryvnia against the US dollar fell from 7.99 UAH / USD to 24.00 UAH /USD, that is in 3.0 times.

All the three stages of exchange rate decrease directly related to a sharp decline in demand for Ukrainian products in foreign markets. The consequence of this situation was a sharp increase in the negative trade balance. For example, in 2008 the negative trade balance reached 16.1 billion USD. This led to: a) reduction of gold and foreign exchange reserves, for example, in 2008–2009 by 8.1 billion USD; b) reduction of exchange rate, including the fall of 2008 from 5.05 UAH / USD to 7.7 UAH / USD. As a consequence, the volume of external debt of Ukraine increased. For example, with 26.4 billion USD in 2008, it increased to 39.8 billion USD in 2009, totally it increases by 13.4 billion.

A significant reduction of exchange rate in the period of 2014–2015 was not only due to the war with Russia and against the last occupation of Ukrainian territory in the Crimea and Donbas. This is the actual limits of the Russian market for Ukrainian goods, as evidenced by data in Table 1.

In 1996 the Russian market accounted for 38.7 % of exports from Ukraine. In 2015 it was only 12.7 %. The share of Ukraine's exports of goods to the Russian market during 1996–2015 decreased by 26.0 percentage points [7, p. 399–401].

Instead, domestic exporters quickly discover other promising markets. For example, the share of exports from Ukraine to Egypt during the analyzed period increased by 4.8 percentage points; to China – by 4.6 % percentage points; to Turkey – by 4.5 % percentage points [7, p. 399–401].

Table 1

The structure of Ukrainian exports to other countries in 1996–2015

No.	Countries	Volumes (billion USD)		Structure, %		Deviation in structure % points
		1996	2015	1996	2015	
1	Belorussia	722.5	870.7	5.0	2.3	- 2.7
2	Egypt	96.8	2079.8	0.7	5.5	**+ 4.8**
3	India	82.3	1444.1	0.6	3.8	+ 3.2
4	Iran, Islam Republic	116.5	472.5	0.8	1.2	+ 0.4
5	Iraq	0.00	533.6	0.0	1.4	+ 1.4
6	Spain	90.2	1979.8	0.6	5.2	**+ 4.6**
7	Kazakhstan	90.9	712.7	0.6	1.9	+ 1.3
8	China	768.1	2399.1	5.3	6.3	+ 1.0
9	Moldova	237.8	524.3	1.7	1.4	- 0.3
10	Netherlands	99.7	905.7	0.7	2.4	+ 1.7
11	Germany	421.9	1328.7	2.9	3.5	+ 0.6
12	Poland	362.7	1977.3	2.5	5.2	+ 2.7
13	Russia	5577.4	4827.7	38.7	12.7	- 26.0
14	Rumania	157.3	569.9	1.1	1.5	+ 0.4
15	Saudi Arabia	28.1	761.6	0.2	2.0	+ 1.8
16	Slovakia	230.6	468.8	1.6	1.2	- 0.4
17	Turkey	408.7	2771.8	2.8	7.3	+ 4.5
18	Hungary	371.6	909.7	2.6	2.4	- 0.2
19	France	111.1	497.9	0.8	1.3	+ 0.5
20	Check Republic	143.0	541.0	1.0	1.4	+ 0.4
21	Total export	14400.8	38127.1	100.0	100.0	X

Sources: Statistical Yearbook of Ukraine for 2015. State Statistics Service of Ukraine. – K., 2016. – P. 399–401).

A considerable damage to hryvnia exchange rate is inflicted by two major problems in state governance of Ukraine:

• total tax avoidance by large (oligarchic) corporations;

• massive theft of state budget resources.

According to the information of the Ministry of Economic Development and Trade of Ukraine, the level of shadow economy in Ukraine in 2015 amounted to about 40 % [9]. Considering that in 2015 Ukraine's GDP totaled 1,979.5 billion UAH, the net profits of the shadow sector in 2015 amounted to about 790 billion UAH (1979,5 billion UAH × 0.40 = 790 billion UAH). 500 billion UAH of this amount depends on the corporate sector, owned by oligarchs.

Along with the above, in Ukraine the scale of avoiding income tax payments by fraud through offshore companies is enormous. These transactions take place "in accordance with applicable law" because the list of offshore zones is approved by the Cabinet of Ministers of Ukraine [10].

For this situation, the Ministry of Economic Development and Trade of Ukraine points that the current situation of tax avoidance is caused by "significant tax burden on the corporate sector against the backdrop of the high cost of credit resources and the unfavorable external economic conditions in key commodity markets". [9] The Ministry says nothing about ineffective work of fiscal services to reduce the amount of shadow economy.

The superprofits obtained through offshore manipulations partially return to Ukraine by foreign investment. Particularly, by January 1, 2015 the total amount of direct foreign investments in Ukraine was 45.7 billion USD, 30 % of which (13.7 billion USD) came from Cyprus [7, p. 515]. No other country in the world has invested in Ukraine as foreign direct investments as much as a small island state of Cyprus. For example, by January 1, 2015 Germany had invested in Ukraine only 5.4 billion USD [7, p. 515], that is 2.5 times less than Cyprus.

Unfortunately, Ukrainian government officials do not lag behind the oligarchs. The scale of abuse by government officials in Ukraine is well-known. The evidence provided to the Anti-Corruption Bureau in 9/12/2016 by oligarch I.Kolomoyskyi, who accused top management of the country in extortion and receiving a bribe from him,110 million UAH [11].

Ukrainian MPs, having official incomes four times lower than the incomes of the Polish Sejm members, declared property, which is on average five times larger than the wealth of the Polish Sejm members. A similar situation is observed with incomes of the top management of the Cabinet of Ministers and other government branches in Ukraine [12]. No member of the Polish Sejm has income that would allow him to buy the car of VIP class. [12]

As we have noted above, an important factor supporting hryvnia exchange rate is the inflow of currency from abroad from Ukrainian workers-emigrants. But most of this money is accumulated by the leaders of the shadow sector and then withdrawn from the country. In 2015, during very difficult time for Ukraine, there were imported VIP class cars in the amount of about one billion US dollars. There are hundreds of villas and yachts owned by top officials of Ukraine abroad. On the acquisition and maintenance of these luxury "attributes" there were spent tens of billions of US dollars. This has definitely a negative impact on the trade balance of the state.

Due to the current situation, the state does not fulfill the redistributive social function. The wealth, created by the work of the society members, is not the property of the Ukrainian people and is concentrated in the hands of oligarchic clans. Incomes, obtained through the informal sector, are mostly converted into hard currency. This increases the foreign currency demand in the foreign exchange market and the negative impact on the hryvnia exchange rate.

Summarizing the above, there is reason to believe that during 1996–2015 the main negative factors influencing the exchange rate of hryvnia were:

a) passive trade balance of payments, which in total reached 120.0 billion USD;

b) a significant rate of inflation;

c) huge amounts of shadow economy in the country, resulting in the flow-out of substantial amounts of currency abroad.

To eliminate these problems, the Ukrainian society, non-governmental organizations should intensify the work of state authorities in two strategic areas:

1) ensuring real publicity in control over budget funds;

2) restricting the volume of offshore and shady frauds of big corporations.

These tasks have some specifics in their implementation. The first problem requires immediate publicity in control over budget funds and real punishment for guilty government officials of sabotaging these changes in parliament and getting shady income.

Among the three branches of the state power the emphasis should be placed on the judicial reform. At present it is just this branch of power that is pushing the country into the abyss because of frankly immoral and illegal court decisions legitimize raidering, minimize liability for criminal offenses. 60 % of the current judges as a result of judicial reforms should be dismissed. The relevance of judicial reform and the need for an immediate initiation of the anti-corruption courts in Ukraine are stressed by most influential organizations, including the leaders of Ukrainian churches, artists [13], MEPs and others.

Solving the second problem must be based on the system of gradual changes in the State Fiscal Service. Twenty years ago, one of the authors of the given research suggested that UFS need systematic approach, able to significantly and gradually reduce the level of shadow economy in the country [14, 17]. This approach can be applied even today to the gradual restriction of the shadow frauds of large corporation owners. For this, the use of the system main evaluation criterion should be the profitability of operating activities of enterprises and corporations to compare it to the same indicator on average according to the type of activity of these corporations [15, p. 94–97].Those enterprises whose profitability ratios of operating activities will be lower than the average for this type of activity will have to be the objects of attention for Fiscal Service. If Antimonopoly Committee of Ukraine and other controlling services are involved in this process, management of the state will ensure that these segments of the market are working on the basis of competition; it will also significantly limit the volume of operations of offshore trading houses, established at oligarchs' corporations.

Due to increasing profitability ratios of the operational activities of the investigated enterprises there will increase the average profitability ratios of the operational activity by the type of their activity. As a consequence, other companies may emerge where these indicators will be shown below average. Now these enterprises-outsiders in terms of the profitability of operational activities will become the objects of inspection. And this process should go on continuously.

Indeed, the current situation in the economy, where the bulk of the oligarchs' corporate sector works with operational activities profitability of 2–4 % [7, p. 480] is frankly laughable, if not sad.

The main contribution to this process should be made by Ukrainian parliament. For example, after "Panama scandal" Great Britain is planning to introduce criminal liability for the companies that allow their employees to help others avoid paying taxes [16].

Conclusions and perspectives for further research

The research provides characteristics of the main factors that during 1996–2015 negatively affected the hryvnia exchange rate and its dynamics. Attention was focused on the study of the negative impact of the shadow economy on the hryvnia exchange rate and the ways of reducing the shadow economy in Ukraine.

After implementing the proposed measures the revenues of the state must increase. This should positively affect the NBU monetary policy due to reducing the rate of inflation in the national economy. By reduction of oligarchs' shadow incomes it will be possible to decrease the outflow of currency abroad, in particular, due to lowering oligarchs' demand for luxury goods.

As a result, the balance of payments will be improved, the process of inflationary devaluation of the hryvnia will be minimized, the national economy will receive additional incentives for economic growth through the effective increase in aggregate demand, and domestic market will become more stable by reducing dependence on external demand; gold and foreign exchange reserves will increase, the national debt will decrease and the exchange rate will become more stable.

Further research should take into account the fact that the current systems of exchange rates are directly tied to the competitiveness of national economies. Accordingly, to increase the potential of the hryvnia exchange rate stability one should focus on research into the factors of Ukraine's global competitiveness and systems continuous improvement of the factors that contribute to its increase.

References

1. *The balance of payments of Ukraine. – [Electronic resource]. – Access: https: /bank.gov.ua/control/uk/publish/.*
2. *Migrant workers in Ukraine have listed more than 7.5 billion US dollars. – [Electronic resource]. – Access: www/radiosvoboda.org/a/ 27075873.html.*
3. *Foreign exchange reserves of the NBU. – [Electronic resource]. Access: insider / com.ua / spravochnik.*
4. *Statistical information on debt. [Electronic resource]. – Access: http: //www.minfin.gov. ua/news/view/statystychni-materialy-shchodo-derzhavnoho-ta-harantovanoho-derzhavoiu-borhu-ukrainy.*
5. *Linnik O.A. Formation of external state debt of Ukraine in 2010–2014: Causes and consequences / O. A. Linnik // Regional Economics. – 2015. – No. 1. – P. 104–114.*
6. *D. Kropivnitskogo-ML Improving the competitiveness of Ukraine's economy-ness in the paradigm of productivity // Herald "Lviv Polytechnic" "Logistics". – No. 690. – Lviv: "Lviv Polytechnic", 2010. – P. 580–586.*
7. *Statistical Yearbook of Ukraine for 2015. State Statistics Service of Ukraine. – Kyiv, 2016. – 574 p.*
8. *Currency Bank. [Electronic resource]. – Access: finance.i.ua/nbu/.*
9. *The level of the shadow economy Ukraine has decreased to 40 % of GDP. Ministry of Economic Development and Trade of Ukraine. [Electronic resource]. – Access: http://www. epravda. com.ua/news/2016/07/4/597966/.*
10. *CMU of 16 September 2015, the. Number 977-r "On approving the list of states (areas) that meet the criteria established by subparagraph 39.2.1.2 subparagraph 39.2.1 paragraph 39.2 of Article 39 of the Tax Code of Ukraine." [Electronic resource]. – Access: http://kodeksy.com.ua/ norm_akt/source-KMY*
11. *Bribe of $ 110 million. [Electronic resource]. – Access: glavcom.ua/publication/habar-na110milyoniv-kolomoyskiy-nadav-antikorupciynomu-byuro-kompromat.*
12. *Mateusz Balyas. Polish MPs are poor as church mice, compared with Ukrainian colleagues. School management Ukrainian Catholic University. [Electronic resource]. – Access: http://spm.ucu.edu.ua/2016/11/03/polski-deputaty-bidni-yak-tserkovni-myshi-porivnyuyuchy-z-ukrayinskymy-kolegamy/.*
13. *Vakarchuk handed Poroshenko requirement for anti-corruption courts. [Electronic resource]. – Access: http://www.pravda.com.ua/news*
14. *Ilychok B. I. The shadow economy in Ukraine and ways of its solution // Regional Economics. – 1997. – No. 3. – S. 134–142.*
15. *Ilychok B. I. Analysis of business entities in commodity markets [teach. guidances. for students. universities] / B. I. Ilychok: Lviv "Lviv Polytechnic", 2016. – 171 p.*
16. *Deofshoring Berlin calls for an international register of companies. [Electronic resource]. – Access: http://www.dw.com/uk/19177961.*
17. *Trevoho O. State, prospects and problems of development of domestic engineering management during the exit from the global economic crisis / O. Trevoho, M. Shvetsov // Bulletin Nat. Univ "Lviv Polytechnic" "Management and Entrepreneurship in Ukraine: stages of formation and development problems" No. 778. – Lviv: Lviv Polytechnic Publishing House. – 2013.*

Vol. 3, No. 2, 2016

UDC 338.2:658

M. Nashkerska,
PhD, Associate Professor,
N. Mykytiuk,
PhD, Associate Professor,
Lviv Polytechnic National University

IMPROVING THE METHODS FOR COMPANY'S LIQUIDITY ASSESSMENT

Abstract. In this paper, authors analyze existing approaches to assessment of company's liquidity and solvency, and identify inconsistencies and inaccuracies of these approaches, particularly in relation to the organization of assessment. They suggest an improved method for calculation of indices that form the basis of liquidity assessment.

Keywords: assets, balance sheet liquidity, assessment, liabilities, liquidity indices

Formulation of the problem

The level of solvency of a company, defined as its ability to meet its current liabilities, is a matter of utmost importance to its owners, investors, lenders, and employees, as well as to various government authorities. Several liquidity indices are used to assess the solvency of a company. An accurate assessment of the company's solvency depends upon correct methods of calculating liquidity indices. Any inaccuracy in methods will lead to distortion in results and incorrect assessment of the company's financial state. Therefore, decisions made by owners or lenders on the basis of such inaccurate assessment may be inefficient. Contemporary studies on this issue have not shaped a universal systemic approach to the organization and methods of company's liquidity assessment; there are various inaccuracies and inconsistencies related to the calculation of liquidity indices.

Analysis of recent research and publications

The theory and methods of liquidity indices calculation have been addressed in a number of studies by Ukrainian and foreign scientists. Important contributions to this issue have been made by researchers in Ukraine (L. Lakhtionova, Ye. Mnykh, H. Savytska, Yu. Tsal-Tsalko, I. Blank, M. Korobov, L. Kovalenko, A. Zahorodnii, A. Poddieriogin and others) and internationally (J. Van Horne, J. Wachowicz, J. Shim and J. Segal, J. Richard, E. Helfert, E. Brigham and others). Despite the vast research background, there is a need for methodological implementation of theoretical knowledge into practice.

The purpose of the research is to improve the methodological approach to liquidity indices calculation by means of grouping assets and liabilities by the level of their marketability and the term to maturity, respectively.

Presentation of the main material

Calculation of liquidity indices is one of the easiest methods of assessing a company's solvency, or ability to meet its current liabilities within a reasonably short period of time. This group of indices is calculated by comparing company's current assets against its current liabilities. Due to this, liquidity indices are used in official methodology of government agencies for assessing a company's financial state. However, both official methodology and scientific research papers demonstrate a number of inconsistencies related to the methods of liquidity indices calculation as well as the terminology used. Let us highlight a few of these.

The Order of the Ministry of Economics of Ukraine "On Amendments to Methodological Guidelines for Detecting Signs of Insolvency of Companies and Signs of Activities Aimed at Concealment of Bankruptcy, Fraudulent Bankruptcy or Deliberate Bankruptcy" (No.1361 of 26.10.2010) prescribes to calculate the current (overall) liquidity ratio of a company as current assets divided by loan capital (current and long-term liabilities). The document states that "an

increase in this index signifies a positive trend for a company", which is, in our opinion, incorrect [1].

A high current liquidity ratio may also indicate an excessive and unjustified accumulation of current assets, compared to the amount of loan capital.

At the same time, the Order of Ministry of Finance of Ukraine "On Approval of Methodology for the Analysis of Financial and Commercial Operations of Public Sector Companies' (No.170 of 14.02.2006) names the same ratio, which "reflects the number of current asset units per unit of long-term and current liabilities", as "an overall liquidity ratio" [2]. The document does not contain any indication of a regulatory value for this ratio.

There is another index reflecting a ratio of current assets to current liabilities, which is used in documents mentioned above, under the name of "coverage ratio". The regulatory value for coverage ratio is different in the two documents. The Methodological Guidelines No.1361 indicate that "an increase in this index signifies a positive trend for a company" [1], and the Order of Ministry of Finance specifies a regulatory value range of 1.0 to 1.5 [2].

In scientific studies (A. H. Zahorodnii, H. I. Kindratska, M. S. Bilyk, O. O. Sheremet, Ciaran Walsh and others) [3, 4, 5], an index reflecting a ratio of current assets to current liabilities is called a "current liquidity ratio". A recommended regulatory value of this index falls within the range of 1.0 to 2.0.

The Methodological Guidelines No.1361 also suggest calculating a "quick liquidity ratio" [1]. For this ratio, only a portion of current assets, namely cash at bank and in hand, marketable securities, and accounts receivable, are considered against current liabilities. In scientific works, this index is also known as "interim liquidity ratio", "critical liquidity ratio", "operating liquidity ratio", and "acid test ratio". The regulatory value of this index differs across documents and publications.

Liquidity is defined as an ability of a company to convert its current assets into money with minimal loss of value, in order to pay off its short-term liabilities.

The assessment of the company's liquidity includes:

– measuring the balance sheet liquidity,

– calculation and analysis of liquidity indices.

Consequently, to maintain the optimum state of liquidity, a company needs to continuously maintain an objectively justified ratio of assets and liabilities on its balance sheet.

In order to measure the liquidity of a company balance sheet, assets need to be categorized by the level of marketability and liabilities by the term to maturity.

Based on the level of marketability, assets may be broken down into the following categories:

Assets ready for use (A_1) are all amounts of money and equivalent instruments, i.e., money that may be readily used for operational transactions. This includes short-term deposits and securities considered "cash equivalent" (balance sheet assets, Section 2, line 1160: Current financial investments; line 1165: Cash and cash equivalents; line 1166: Cash; line 1167: Bank accounts).

Assets promptly convertible (A_2) are assets that require some period of time to convert them into money. This category includes accounts receivable (balance sheet assets, Section 2, lines 1125 to 1155). However, only receivables that are expected to be received within 12 months may be included. Therefore, all contracts with customers need to be analyzed in order to categorize receivables by terms of payment.

Assets slowly convertible (A_3) are assets that require a significant amount of time to convert them into money, with a considerable risk of loss of value. This category includes inventory, except for outgoing inventory, and overdue receivables.

Assets not easily convertible (A_4) are assets required for the company's long-term operations. This category includes assets from Section 1 of the balance sheet ("Non-current assets").

Categorization of certain other types of current assets, such as "Deferred expenses", "Other current assets", and balance sheet Assets Section 3: "*Non-current assets held for sale, and disposal groups*", remains a subject of debate.

Deferred expenses are costs that have been incurred in the present reporting period, but are subject to be reported as expenses in future periods. As benefits are received over time, these costs will be written off gradually and reported as expenses. Such expenses include rent payments, pre-paid subscription for periodicals, license fees, insurance premiums, costs related to launching new production sites or new products etc. In the accounting process, these expenses are accumulated by debiting account 39, Deferred expenses. As benefits are received with time, these

expenses are written off by respectively crediting the same account 39. Still, not all of the deferred expenses are written off within 12 months. For instance, costs related to launching new production sites or new products may be written off over several years. For the purposes of assessing liquidity of this kind of assets, they may be categorized by write-off period into short-term expenses (deferred expenses that will be written off within 12 months) and long-term expenses (deferred expenses that will be written off over a period longer than 12 months). I. V. Vyhivska, E. H. Melnyk suggest to record long-term deferred expenses under account 185. The breakdown of deferred expenses into short-term and long-term expenses is illustrated in Fig. 1 [6].

Based on this breakdown, short-term deferred expenses may be categorized as assets slowly convertible (A_3), and long-term expenses as assets not easily convertible (A_4).

There is no unanimous approach among scientists as to the categorization of "Other current assets". Balance sheet line 1190, Other current assets reflects the value of current assets that cannot be identified as a separate line by relevance indicators, nor can they be included into any other article of the "Current assets" section. This line reflects the value of company's monetary instruments in national and foreign currencies, as well as debit record of VAT accounts (debit balance: 331, 332, 643, 644).

Sub-accounts 331 and 332 are used for recording the balance and transactions in monetary instruments (in national and foreign currencies) kept at the company cashier's desk: pre-paid vouchers for health resorts and recreation centers, post stamps, contract stamps, travel tickets and vouchers for business travel etc.

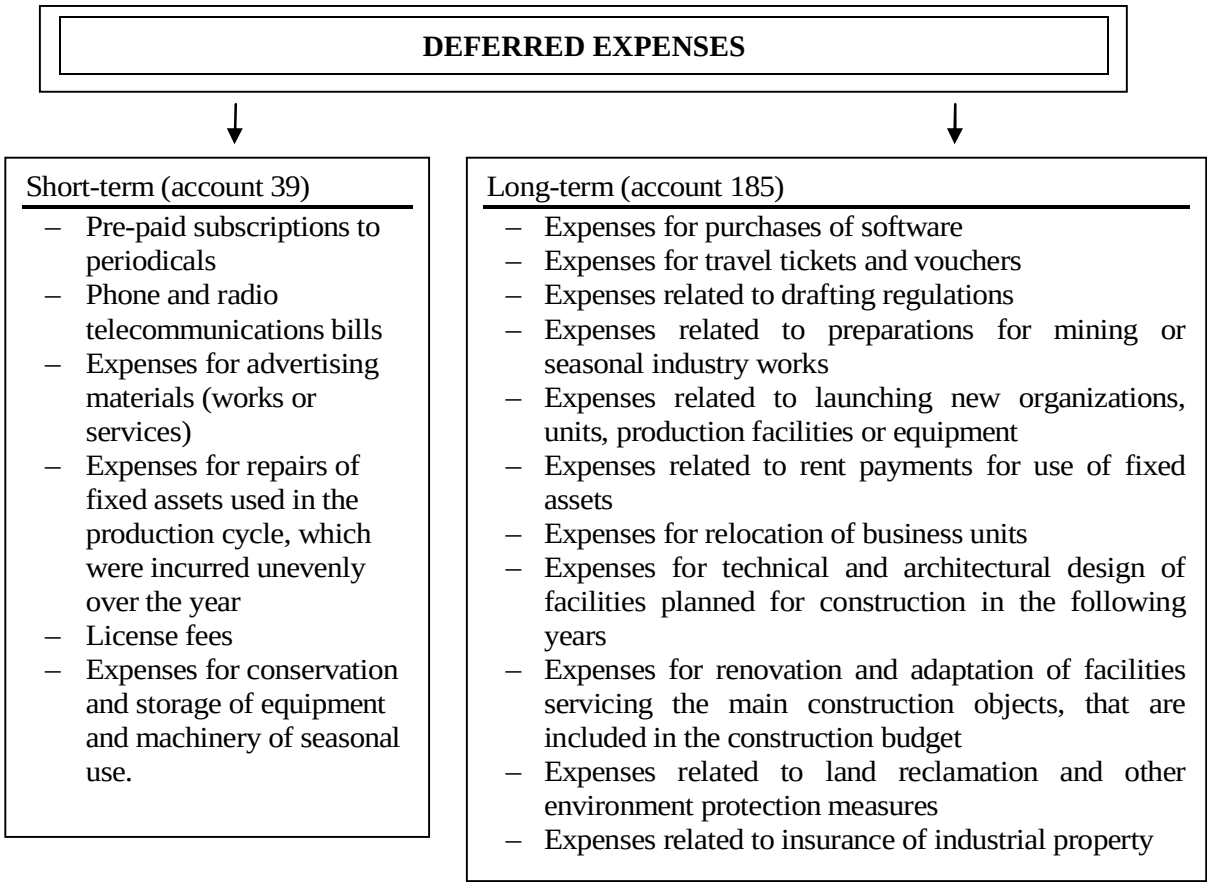

Fig. 1. Categorization of deferred expenses

Sub-account 643 is used for recording the amounts of value added tax calculated from advance payments received for products, goods, intangible assets, works or services that are yet to be delivered or performed. In other words, it serves for VAT payable records.

Sub-account 644 is for recording value added tax credit, or VAT amounts that are

deductible under the applicable tax laws in cases when an advance payment to the seller is the first event in a buying transaction.

Based on the purposes of sub-accounts mentioned, we consider it appropriate to include "Other current assets" into the second category, i.e., Assets promptly convertible (A_2).

Section 3 "Non-current assets held for sale, and disposal groups" reflects the value of non-current assets and disposal groups that are held for sale, as identified and regulated by the national Accounting Regulation (Standard) 27: "Non-current assets held for sale and discontinued operations"; these are recorded under account 286 [7]. In accordance with the AR(S)27, a disposal group is a collection of assets that are scheduled for sale or transfer by any other means in a single transaction, and liabilities that are directly linked to such assets and will be transferred (paid) as a result of the same transaction.Pursuant to paragraph 1 of the AR(S)27 [7], non-current assets and disposal groups are identified as "held for sale" if the following conditions are met:

– economic benefits are expected from their sale rather than from their use for the intended purpose;

– they are suitable for sale in their present condition;

– their sale is expected to be completed within one year from the date of their designation as "held for sale";

– the terms of their sale are consistent with regular terms of sale for similar assets;

– their immediate sale poses a high risk, for example, when the company has a specific plan or a strict sale contract, they are actively offered on the market at a price that matches their actual fair value.

At the same time, the regulation envisages that "the period to the completion of sale may be extended beyond one year in case such extension is mandated by circumstances beyond the company's control, and the company is continuing to follow the sale plan". This means that whenever an asset remained unsold for longer than a year, it may have been improperly classified as held for sale, or it appeared difficult to sell due to lack of demand.

At the same time, there may be assets recorded under account 286, which are very unlikely to be sold; alternatively, if an asset no longer meets the criteria set for non-current assets held for sale, it should be transferred into the non-current assets section. If, however, the company still intends to sell these assets (e.g., some of the fixed assets that are no longer necessary for company operations), they may be recorded under sub-account 117, Other non-current tangible assets, or sub-account 184, Other non-current assets, of the synthetic record account 18, Long-term receivables and other non-current assets. Their value is then reflected under Assets Section 1 of the balance sheet [8].

Appropriate identification and recording of non-current assets held for sale has a significant impact on company's liquidity assessment. In general, Section 3, "Non-current assets held for sale, and disposal groups" should be included into the assets *slowly convertible (*A_3) category in its entirety. However, there is a possibility that some of the assets designated as "held for sale" (and recorded under account 286) do not, in essence, meet the criteria for designation as non-current assets held for sale. If detailed information sources are accessible, the analyst responsible for categorization of assets by the level of marketability should perform a thorough review of all items recorded under account 286. Should some of the non-current assets be identified as non-compliant with the criteria of "held for sale" designation, the analyst should include them into assets not easily convertible (A_4) and suggest that accountants make appropriate corrections in the records.

Assets of the first three categories (ready for use, promptly convertible, and slowly convertible) change constantly over the course of the present operational period; therefore, they are classified as company's current assets. These three asset groups (A_1, A_2, and A_3) are used for calculation of relative liquidity indices.

Liabilities on the balance sheet are categorized by the term to maturity.

Immediate liabilities (L_1) are company's obligations that require timely payments. These include: accounts payable with vendors and contractors, taxes and duties (and other mandatory payments) payable, wage arrears (lines 1615 to 1650, inclusive).

Short-term liabilities (L_2) are liabilities maturing within 12 months. This category of liabilities includes short-term bank loans (line 1600), promissory notes issued (line 1605), current

portion of long-term borrowings (line 1610). In our opinion, current provisions (line 1660), deferred income (line 1665), other current liabilities (line 1690), and Section 4, "Liabilities associated with assets held for sale and disposal groups" should also be included into this category.

Long-term liabilities (L_3) are obligations under long-term loans and borrowings, and other liabilities extending over a longer time period. This category is made up of liabilities with a term to maturity exceeding one year, which matches Liabilities Section 2 on the balance sheet.

Permanent liabilities (L_4) are obligations towards capital owners. This category matches Liabilities Section 1 on the balance sheet.

The balance sheet liquidity of a company is calculated on the basis of values identified above. The **balance sheet liquidity** is a state where the corresponding categories of assets and liabilities are matched in a manner that allows the company to meet its liabilities of different terms to maturity with assets of appropriate marketability level [3].

The state of absolute balance sheet liquidity is achieved if the following conditions are met:

· Assets ready for use are greater than or equal to immediate liabilities,

· Assets promptly convertible are greater than or equal to short-term liabilities,

· Assets slowly convertible are greater than or equal to long-term liabilities, and

· Assets not easily convertible are less than permanent liabilities.

When conditions one, two, and three are met, the last condition is also met. This state indicates that the company has sufficient working capital throughout the assessed time period. If at least one of the statements is not true, it means that the balance sheet liquidity of the company is not ensured.

Table 1 below summarizes the categorization criteria for assets and liabilities, their appropriate balance sheet items, and conditions of absolute balance sheet liquidity.

Table 1

Criteria and conditions of balance sheet liquidity

Categorization of assets	Balance sheet line codes	Categorization of liabilities	Balance sheet line codes	Conditions of absolute balance sheet liquidity
Assets ready for use (A_1)	1160, 1165	Immediate liabilities (L_1)	1615–1650 (except for 1630)	$A_1 \geq L_1$
Assets promptly convertible (A_2)	1125 (up to 12 months), 1130-1155 (except for 1136), 1190	Short-term liabilities (L_2)	1600, 1605, 1610, 1660, 1665, 1690, 1700	$A_2 \geq L_2$
Assets slowly convertible (A_3)	1100, 1110, 1125 (over 12 months), 1170 (short-term), 1200	Long-term liabilities (L_3)	1595	$A_3 \geq L_3$
Assets not easily convertible (A_4)	1095, 1170 (long-term), 1200 (those that do not meet the criteria for "held for sale" designation)	Permanent liabilities (L_4)	1495	$A_4 \leq L_4$

By matching the values of respective categories of assets and liabilities identified, we now can assess the current and prospective solvency of a company. For instance, we can measure the current liquidity by comparing the sum of two most easily marketable asset groups ($A_1 + A_2$) against the sum of immediate and short-term liabilities ($L_1 + L_2$). If the sum of easily marketable assets is greater than the sum of immediate and short-term liabilities, i.e., $(A_1 + A_2) > (L_1 + L_2)$, the company has adequate liquidity in the current time period. If the statement has an opposite sign, it means that the company does not have sufficient working capital; it faces problems paying its current bills, and is insolvent in the current time period. This is a dangerous state that has to be rectified quickly.

By comparing the value of assets slowly convertible (A_3) against that of long-term liabilities (L_3), we can measure the prospective liquidity.

Additionally, by comparing liquidity balances over different periods, we can understand the trends in company's financial situation.

The second stage of company's liquidity assessment involves calculation and analysis of basic liquidity indices, which are used to assess the company's ability to meet its short-term obligations.

Conclusions and prospects for future research. Liquidity indices are intended to reflect the level of company's solvency in relation to its short-term debts. Therefore, maximum accuracy is important in calculation of these indices, as company managers, lenders, and investors may make crucial decisions on the basis of these results, and the quality of results may have an impact on their bottom line. This further bolsters the importance of company records as a source of additional information during the liquidity assessment process. A proper analysis will, in turn, enable the company to maintain a rational balance of assets and liabilities (funding sources), and keep an adequate amount of cash reserves in order to meet all of its obligations.

The reliability of liquidity indices calculated will facilitate ad-hoc assessment of solvency and understanding of company's financial situation in general. We will further focus our research on systematization of approaches to the organization of company's financial stability assessment.

References

1. *"On Amendments to Methodological guidelines for detecting signs of insolvency of companies and signs of activities aimed at concealment of bankruptcy, fraudulent bankruptcy or deliberate bankruptcy": The Order of Ministry of Economics of Ukraine, No. 1361 of 26.10.2010.*
2. *"On Approval of methodology for the analysis of financial and commercial operations of public sector companies": The Order of Ministry of Finance of Ukraine, No.170 of 14.02.2006.*
3. *H. I. Kindratska Economic Analysis: a handbook / H. I. Kindratska, M. S. Bilyk, A. H. Zahorodnii. – 3rd ed. with amendments and additions. – K. : Znannia, 2008. – 487 pages.*
4. *O. O. Sheremet Financial Analysis: student's guidebook. – K., 2005. – 196 p.*
5. *Walsh, Ciaran. Key Management Ratios. (Translation from English) – K.:Vseuvyto; Naukova dumka, 2001. – 367 pages.*
6. *E. H. Melnyk. Classification of deferred expenses: the recording aspect. Materials of 6th International Research and Practice Conference [Aktualne problemy nowoczesnych nauk – 2010] / E. H. Melnyk, I. M. Vyhivska. – Volume 10. Ekonomiczne nauki: Przemyśl. Nauka i studia. – pp. 39–43.*
7. *AR(S)27 "Non-current assets held for sale and discontinued operations".*
8. *O. Kravchuk. Non-current assets designated as "held for sale" may be returned to non-current assets // Kravchuk O. "Debit-Credit", No. 48. – 2014. – https://online.dtkt.ua/Book/41f11b8b-e137-4545-894f-f5ecea0e5d24]*

Vol. 3, No. 2, 2016

UDC 640. 43

M. Olikhovska
Ph.D in Economics, Associate Professor
Lviv Institute of PJSC "Interregional Academy of Personnel Management"

MODERN DEVELOPMENT OF THE SECTOR OF RECREATIONAL SERVICES IN TERMS OF EUROPEAN INTEGRATION OF UKRAINE

Abstract. The term "recreation" is specified, given the different concepts and theories, and its economic nature is identified. The basic economic parameters and functions of recreational services are highlighted. The relationship of recreation with material production and industrial infrastructure is substantiated. Structural elements of the recreation system functioning are formed, their main tasks in the modern period of state development are identified.

Keywords: recreation; recreation theory concept; recreation system; concept of human potential development; tourism; service sector; green tourism.

Formulation of the problem

Social production reforms, the changing nature of work, increased free time, improvement of ecological situation, and many other processes determine the large scale of recreation development. Thus in the consumption pattern of residents of industrialized countries, expenditures on recreation and education are 18 % higher than those on buying food and 2.3 times higher than expenditures on the purchase of clothing and footwear [1]. Recreation belongs to the needs, which are impossible to refuse of.

According to O. Beidyk, recreation is a necessary condition of life, a kind of stress compensator. Reproduction of population efficiency is a rather new area of interdisciplinary research (economic, geographical, sociological, mathematical, medical and others). The category "recreation" is very popular in the regional economy. In the scientific literature several interpretations of the term can be found. Sometimes the concept "recreation" is identified with the term "recovery"; other scientists identify it with the concept "rest". Besides, the term is used to characterize the sector of national economy, which is related to the development of the territory for rest, treatment (rehabilitation) and tourism aimed at personal development, recreation, treatment, and improvement [3].

Analysis of recent research and publications

An important contribution to the research into formation and development of recreational services sector were made by such foreign scholars as I. Endzhejchyk, 2003 [12], V. Kvartalnov [15], 1998, V. Saprunova, 1998, [18], M. Sokolova, 2002 [19] and others. The historical aspects of recreation and tourism development are highlighted in the works of such domestic scientists as L. Dyadechko, 2007 [11], T. Tkachenko, 2009 [20], V. Fedorchenko, 2002 [21] and others. However, the investigation of the modern recreational services sector requires clarification and specification of the term "recreation"; it also needs selection of the main parameters and substantiation of its main constituents.

The purpose of the research is specification and definition of the term "recreation", the selection of its basic economic parameters and functions, as well as substantiation of the structure and objectives of the modern domestic recreation system.

Presentation of the main material

Current understanding of recreation is significantly different from the original meaning (recreation – entertainment, rest, change of actions). In the research presented in theoretical works of P. Hudz, recreation is defined, firstly, as an individual and household activities in the form of recreational cycles of certain duration, secondly, as the business of recreational enterprises, the purpose of which is to provide recreational services to customers and receive profit. The scientist points up that, according to their functional activities, the activities in such spheres as leisure, entertainment, culture, tourism, health-resorts, social sphere and environmental protection are referred to as recreation [7].

The conducted analysis of the scientific literature allows distinguishing the political and

economic, medical and biological, activity-based, geographical, technical and economic, anthropological and ecological concepts of the theory of recreation. Due to the existence of different definitions of the concept of "recreation", the scope of the analysis also changes.

According to theoretical research of the scientists working in this area, in some cases the development of certain types of recreational objects is analyzed, in other cases the operation of certain subsystems is examined, and still in other ones the state and prospects of a specified part of recreational facilities and resources are determined. Although the definition of recreation in the research literature is greatly differentiated, all researchers come from the fact that this concept describes consciously created general conditions that ensure the population efficiency reproduction.

The increasing role of the general conditions of the recreational sector organization has become the main point for its extensive study. During the last decade in scientific literature there is expressed an opinion about the nature of recreation that natural landscape conditions and material things should be referred to recreation. On the basis of the above said, recreation should be understood as the holistic natural object, the functioning of which creates general conditions of social and economic development. The objects, functioning of which creates the general conditions of social reproduction and social activities should be included to recreation. Moreover, the constituents of these objects are variable. With the course of social development these constituents are being constantly changed and supplemented, because the role of the general conditions increases.

V. Pavlov specifies such basic social functions of recreation as biomedical, socio-cultural, economic and political [17]. The scientist states that in the economic group the reproduction of labor takes the main place. Recreation also saves socially necessary time and is a form of demand for services, which determines the formation of other sectors of economic activities.

In the scientific research the process of specification of the term "recreation" continues. However, it is methodically clearly revealed that it refers to the material elements, which create the conditions for the effective operation of the social aspects of life and natural landscape conditions. Recreation also includes the objects of accommodation in the private sector, catering services, consumer tourist services, transportation, communications, health care, physical culture and sports, education, culture and art, which are aimed to meet the needs of tourists, support their vital activities, spiritual and intellectual development.

It is important to note that there are many similarities between the concepts of "recreation" and "service sector", they have, for example, the same functional purpose, that of public services. But at the same time, there are differences: the service sector is an industry division, while recreation is a territorial approach to its development. In the works of researchers of this field there is no single definition of these categories, the process of specifying their structure and functions continues. But, none of these categories replaces one another.

In our opinion, recreation also performs economic functions, including expansion of the employment sector; acceleration of certain territories economic structure development; impact on the people's money expenditures, growth of foreign tourism and foreign currency inflow.

V. Pavlov makes similar conclusions, highlighting the following economic parameters of recreation:

– recreation belongs to the non-production sector, but includes production (e.g. tableware production etc.). The economic effect of recreational activities is felt in health care, rest and tourism institutions, as well as at the level of the country's national economy in the growth of gross national product;

– recreation is closely related to the natural environment, it develops at the intersection of economy and social sphere and ecology. Therefore, while determining the effect from the development of recreational activities along with economic factors the environmental and social factors should be also taken into account;

– economic parameters are closely related to the sort of the recreational resource and, therefore, to the economic characteristics of the recreational area conditions. This relationship is expressed by a system of indicators (potential capacity of recreational areas, cost of medical resources for one man-day, load and recreational capacity of the resort area, level of comfort) [17].

Focusing on the economic parameters of recreation, we believe that one more parameter should be added:

– recreation, namely tourism, can be considered as a form of human capital development, i.e. human intellectual, sensitive, cognitive efforts, which are aimed to acquire new social experiences.

Of great interest is the issue of recreation types classification and construction of its structural models. Recreation division into separate units allows exploring its role in socio-economic development of regions and, thereby, identifying its impact on the expansion and efficiency improvement of the region's economic activities.

While doing research into the place of recreation in the socio-economic development of regions it is necessary to study all its components. As O. Hulych notes that the increased attention to recreational areas is caused by the overall deterioration of the environment and depletion of natural resources, which encourage organizing and conducting the economic activities that are based on the sustainable environmental management, being environmentally friendly and contributing to the social and economic development of the region while complying with environmental standards [8].

P. Hudz complements with the similar statement. He believes that recreation, performing its reconstructive function, has, as the object of recreation, first of all, a human throughout his/her life cycle – from birth to transition to other dimensions rather than a human as part of workforce, and, secondly, a human as the natural heritage [7].

The authors consider the classification of recreational services differently; in particular, they differently substantiate their division criteria.

In his research, V.Kutsenko emphasizes that recreation remains in constant relationship with material production sphere and industrial infrastructure. This relationship has versatile character. Sociologists say that stratification in society is developing. Thus while outlining the social characteristics of a stratum and stratification they put a person, his/her interests and needs and their comprehensive quality satisfaction in the center [16]. Exactly this shows the social nature and the character of functioning of each stratum as well as the place of recreation in it.

Along with this, I. Berezhnaya notes that economists follow the principles used in the division of the economic sector – material production or non-production areas, i.e. recreation is classified according to the role of its individual units in creation of the social product [4]. Thus, recreation relates to the production sphere and its final product is production of services.

As to classification proposed by specialists of economic sphere, it should be noted that distinction and reference of recreation only to the production sphere, in our opinion, is inappropriate because all recreation institutions are also related to the social infrastructure.

As it is known, the concept of human development is based on four basic principles, which reflect productivity, equality, sustainability and person's life-capacity empowerment. The concept of human development is alternative to the view, which reduces development exclusively to economic growth. Economic growth and the increase in recreational services use are not seen as an end in itself but as a means of achieving goals of human development by means of tourism. Tourism allows getting benefits in competition with its rival under certain conditions. Tourism prevents emotional collapse of modern man, who lives at an accelerated rhythm.

M. Birzhakov notes that tourism acts as a sphere delivering services of psychological relief and reproduction of new sensory-emotional sides of man's inner world. Tourism is a necessary way to develop intellectual, sensory, cognitive efforts aimed at gaining new social experiences [5].

Along with this, in classification of recreation services O. Beidyk distinguishes Green Tourism and considers it to be a collection of objects, which create conditions for rest and recreation of society in the countryside. He refers private recreation institutions, organized on the basis of private housing, to green tourism. In his opinion, green tourism objects should be isolated in a separate group, as they are different from other types of recreation [3].

Today the category "green tourism" is very common in the scientific literature, although different authors give it an ambiguous interpretation.

We believe that green tourism should be understood as a system of organizations, businesses and services that deal with specialized servicing of

tourists in the countryside. We think that services, which ensure efficient operation, repair and reproduction of recreational objects, tourists' transportation means and others, should refer to the service system. In particular, it must also include: transport, communications, housing, repair services, auto-technical and information services. On this basis, tourist and recreational services can be divided into production (objects and constructions), social (residents and staff) and institutional (information services) parts.

For example, V. Kalytyuk notes that with the account of specific features of the regional recreational resources use, recreation should be divided into two major components:

– constant (based on health centers);

– temporary (based on the objects that are not included in the official recreation process) [14].

In our opinion, organization of these two kinds of recreation differs substantially; in particular, the elements that form the recreational system are complex structures, such as:

– natural resources and conditions;

– technical infrastructure;

– social subsystem.

Given this, the control system coordinates the activities of individual components and the systems in general, providing optimal conditions for their effective functioning.

The proposed classification of recreation does not purport to be exhaustive or having no alternative. Each section of recreation contains the components that are combined together by functional purpose. Thus, the communal recreation component comprises the sphere of everyday life, catering, trade. In our opinion, its main function is to meet communal and natural physiological needs of tourists.

The component of the engineering construction and environmental protection combines gas, electricity, water supply and drainage, roads, environmental protection (introduction of the system of control over sanitary conditions of villages, compliance with sanitary norms and rules of management). The social component of recreation should combine culture and art, places of worship, healthcare, physical education and sport. Its function is to develop and meet the cognitive and spiritual needs of tourists, protection and strengthening of health. The main tasks of the structural elements of recreation are presented in Fig. 1.

Communal, engineering construction and environmental protection, as well as social components of recreation belong to life support systems, which are developing according to the requirements of nowadays. The functioning of new forms of recreation contributes to the development of the sphere of paid services and therefore increases the tourists' demands to their quality. Here, the role of science grows and its integration with recreation increases.

It should be noted, that the opportunities and needs of the region in the areas of recreation depend on the number of tourists, i.e. the attractiveness of the region. Due to the large range of principles underlying organization of recreation in the region, it is important to find the optimal ways, which will be determined by a number of factors of organizing the recreation. The need for recreation areas is closely related to the number of tourists, the nature of recreation objects and the terms of usage of recreational facilities.

In conditions of socio-economic transformations in Ukraine the principles of recreation areas development have radically changed. This brought in some peculiarities in the formation of recreational systems of regions in general.

In M. Habrel's opinion, given the present-day realities, the role of temporary recreation objects increases. These objects are to be understood as the objects near the centers of gravity that meet the intended purposes of recreation, which can be implemented using objects or sites. The places for temporary rest are divided by the period of their usage into short stay (1 night), medium-term stay (up to 4 days) and long-term stay (over 4 days) [6].

The principle of zones' organization is closely related to the research of this issue. It suggests introducing a variety of areas, including facilities for parking, with the possibility of extremely short stay of tourists, with differentiated payment, depending on the stay duration and so on. Thus, the tourists' stay duration is the main criterion in determining the area capacity and substantiating opportunities of servicing a complex of objects.

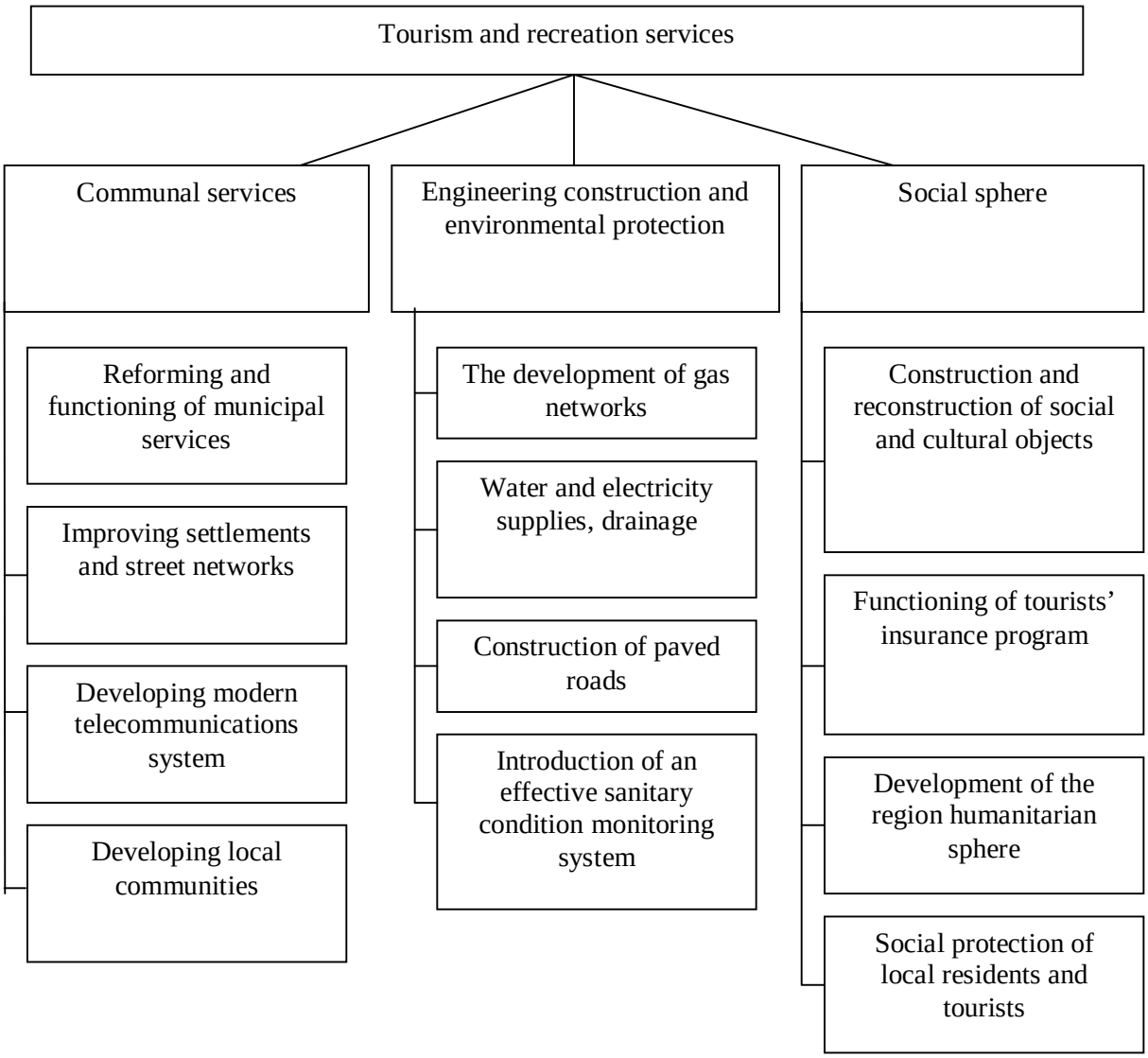

Fig. 1. The main tasks of the structural elements of tourism and recreation services

Note: formed by the author

R. Ivanukh and V. Zhuchenko note that recreational and tourist institutions are divided into private, departmental and combined [13]. We believe that this criterion is a key factor in determining the overall regional strategy of recreation system development because the assessment of patterns of recreation sites by the type of ownership will enable better attraction of investment. As the analysis of practices shows, the ownership affects the efficiency of using recreational institutions; in particular, a private object is more often used only by one owner, and this reduces the efficient use of space. In contrast, departmental and combined properties of the institution enable the possibility of using it in a combined mode.

M. Dolishnii in his studies classifies the objects of recreation by their capacity into small (50 seats), medium (50–100), big (100–250), large (250–500), larger (over 500) [9]. It is interesting that the capacity of an object affects the choice of architectural and planning solutions. On the basis of regulations, it is the object capacity that specifies the place of the object in a particular area and defines the distance to the residential buildings, utilities and so on.

It should be noted that the cost of land is very different and depends on the conditions of the

land plot. This greatly affects both the recreational system development and the features of each recreation object individually, depending on its location. Thus, high cost of land in the areas close to the protected complexes and unique landscapes should activate building on these lands of elite recreation facilities. That is, differentiation in the cost of land should lead to deepening the impact of this factor on the formation of the recreation system.

It may be concluded that in some cases the indicators of the regulatory norms are not adhered to; this concerns at least the interaction of organized and unorganized recreation, short-term and long-term stay. The reason for this, first of all, may be the lack of arranged areas suitable for temporary rest.

Similar conclusion is made by O. Dudkina, who notes that the distribution of the recreational places in different zones primarily depends on the balance of territories belonging to certain administrative districts and village councils. In particular, the regions that are situated far from the railway are more inclined to contain places of short-term rest [10]. Therefore, forecasting the recreation system development, the functional zoning of the entire region and districts should be taken into account.

We agree with the opinion of the scientist that for temporary rest there can be used both organized and unorganized areas. In particular, there is a clear pattern of allocation, in which in the peripheral regions the areas of short rest are grouped around specific recreational objects, and as we approach the center of recreation zones the capacity of individual objects decreases with the increase of total capacity (by increasing their number) and there is observed replacement of the addressed service to complex one [10]. It should be also noted that the development of recreation has a distinctly territorial character and it ensures the development of a particular area or organizes its communication with other regions.

Conclusions and perspectives for further research. Thus, recreation is the system of organizations and conditions for producing recreational services, which ensure the tourists' efficiency reproduction without worsening the living and working conditions of local residents.

Summarizing, we should note that recreation is one of the major priorities among modern social and economic issues. Given the significant social, economic and environmental effects, the recreational services sector has significant advantages and long-term prospects for the country during its economic restructuring and European integration.

Therefore, the key objectives of modern national recreation should be:

– improvement of social infrastructure development;

– formation of a system of servicing people and tourists with a wide range of high quality services as well as creation of new workplaces;

– prevention of further degradation of settlements and territories;

– environmentally sustainable development of the region.

In terms of emerging market relations there appears the necessity of forming and developing effectively working market of recreational services. It brings significant peculiarities to the formation of the recreational system of Ukraine.

References

1. *Antonyuk, Ya. (2001). The sphere of consumer services for the public: the development status and principles of state regulation at the local level. [In Ukrainian].*
2. *Beznosyuk, V. D. (2001). Organizational-economic and information maintenance of development of a tourist-improving complex in regions of Ukraine. Master's thesis, Institute of Regional Research of the NAS of Ukraine, Ukraine. – Lviv. [In Ukrainian].*
3. *Beidyk, O. O. (2001). Recreational and tourist resources of Ukraine: methodology and methods of analysis, terminology, zoning. – Kyiv: "Kyiv university". [In Ukrainian].*
4. *Berezhnaya, I. V. (1997). The forms of organization and the methods of recreational sphere management in the new economic conditions (the case of Crimean region). Master's thesis, Institute of Economic and Legal Research of the NAS of Ukraine, Ukraine. Donetsk. [In Russian].*
5. *Birzhakov, M. B. (2000). Introduction into tourism. – Saint Petersburg: Publishing house "Herda". [In Russian].*
6. *Habrel, M. M. (2000). Architectural and landscape research of recreation in the region. State and problems of information support. Materials of the International Congress: Problems of informatization of recreational and tourist activities in Ukraine: prospects of cultural and economic development. Truskavets. – Pp. 54–59. [In Ukrainian].*
7. *Hudz, P. V. (2001). Economic problems of resort and recreational areas development. Institute of*

Economic and Legal Research of the NAS of Ukraine. – Donetsk : LLC "Yuho-Vostok, Ltd". [In Ukrainian].

8. *Hulych, O.I. (2007). Environmentally sustainable development of resort and recreational areas: theoretical and practical issues. – Lviv: Institute of Regional Research of the NAS of Ukraine. [In Ukrainian].*
9. *Dolishnij, M. I. (2000). The regional policy recreational potential development: principles of formation and implementation mechanisms. – Socio-economic research during the transition period. Recreational industry: experience, problems and prospects of development (annual scientific papers of the Institute of Regional Research of the NAS of Ukraine), XXI, 7-13. [In Ukrainian].*
10. *Dudkina, O. P. (1999). Regional peculiarities of recreating zones' development (methodical, organizational and economic bases). Master's thesis, Institute of Regional Research of the NAS of Ukraine, Ukraine. Lviv. [In Ukrainian].*
11. *Dyadechko, L. P. (2007). Economics of tourism: schoolbook. Kyiv: Center of educational literature. [In Ukrainian].*
12. *Endzhejchyk, I. (2003). Modern tourism business. Ecological strategies in management of a firm. Moscow: Finance and Statistics. [In Russian].*
13. *Ivanukh, R., Zhuchenko, V. (1998). The strategic issues of development of recreational and tourist complex of Ukraine. Economics of Ukrane, 1, 65–70. [In Russian].*
14. *Kalytyuk, V. A. (1999). Recreational and tourist complex in the market economy. Lviv. [In Ukrainian].*
15. *Kvartal'nov, V, Romanov, A. (1998). International tourism: development policy. Moscow: Soviet sport. [In Russian].*
16. *Kutsenko, V. I. (1994). The sphere of health reproduction of the population (socio-economic and regional aspects). Kyiv: Scientific thought. [In Ukrainian].*
17. *Pavlov, V. I. formation of the regional market of recreational services. Materials of the International Congress: Problems of informatization of recreational and tourist activities in Ukraine: prospects of cultural and economic development. Truskavets. P. 32–34. [In Ukrainian].*
18. *Saprunova, V. B. (1998). Tourism: Evolution. Structure. Marketing. Moscow: Os'-89. [In Russian].*
19. *Sokolova, M. V. (2002). The history of tourism: schoolbook. Moscow: Masterstvo. [In Rusian].*
20. *Tkachenko, T. I. Sustainable development of tourism: theory, methodology, business realities. Kyiv: Kyiv National University of Trade and Economics. [In Ukrainian].*
21. *Fedorchenko, V. K. D'orova, T. A. (2002). The history of tourism in Ukraine. Kyiv: Vyshcha shkola. [In Ukrainian].*

Vol. 3, No. 2, 2016

UDC 657.421.3:658.011

M. Plekan
PhD, Senior Lecturer
Lviv Polytechnic National University

ACCOUNTING FOR AN INTANGIBLE COMPONENT OF A TRADING COMPANY'S EQUITY CAPITAL

Abstract. The economic nature of intangible assets as components of trading company's equity capital is disclosed. Theoretical and methodological provisions of intangible assets accounting are analyzed and the existing problematic aspects of reflecting these objects in the accounting system and financial reporting are presented. There are proposed some aspects of improving methodology of accounting intangible assets in their interrelation with the value of the trading company's capital.

Keywords: accounting, intangible assets, capital components, internally generated intangible objects, intellectual capital, methodology.

Introduction

Significant changes of views on the productive power of capital of a post-industrial company, the growing importance of intangible economic resources in its effective functioning and the importance of public representation of this type of economic potential require an appropriate adaptation of the accounting system. Accounting and public financial reporting are an essential function of the management system, the effectiveness of which at present is determined by the cost criteria, they being the estimated parameters of the equity market value, in the structure of which an intangible component has significant value.

Information and intellectual components such as brand, trademark, goodwill, organizational structure and so on are of great importance in evaluating the entity capital (market value) of trading companies, especially shopping complexes of a network type. This type of the company's economic resources "in certain circumstances, may be considered as the result of intellectual activity, which implies that their evaluation can be attributed to intangible assets" [1, p. 67]. This very need to represent such type of economic resources in the reporting of a commercial enterprise is clearly expressed and implies the necessity to transform the existing accounting system, the content aspects of which should be directed towards changing ideology and norms of accounting, its functional role in the management of a trade enterprise.

The current system of accounting and financial reporting fails to reflect intangible assets and intellectual capital. In terms of formalization and reflection in accounting, the objects of internally generated intangible assets of any enterprise, in particular, a trading company, being the most difficult to identify and evaluate, are the most problematic. For a number of objective reasons (problematic evaluation, criteria for recognition of assets as the objects of accounting), very often they do not become the objects of accounting and are not recorded as assets at all. Since the value-estimated assets characterize the total value of equity capital, it is clear that in the accounting system the entity capital of commercial enterprises is presented at a lower cost. This fact greatly affects the efficiency of the capital management and the characteristics of business reputation of domestic trading companies.

Analysis of recent research and publications. The issues of objective representation of the modern enterprise total capital value with formalized, reliable indicators in public reporting are widely discussed in the world economic science and find various practical appraisals. The main focus of the problem lies in the formation of reliable formalized information on information and intellectual component of the company's capital in the accounting system. The basic idea leading to solution of this problem is associated with the improvement of accounting of intangible assets. Some scientists, I. Yo. Yaremko, in particular, directly link the completeness of intangible assets

reflection in accounting with the evaluation of the company's capital, stating that "intangible assets are a form of "representation" of intellectual capital" [2, p. 27].

Both scholars and practitioners have common opinion that the availability of only one type of information about financial and material resources extremely complicates the possibility of providing the cost characteristics of the capital of modern enterprises. In the subject area of knowledge this view is recognized. Thus, for example, N.O. Vlasova argues that "the use of information exclusively about financial sources of capital in calculations distorts the real conditions of commercial enterprises" [3].

In general, the topics discussed are considered the least developed in the world economic theory and practice. In particular, scientists [4] indicate that deep and comprehensive theoretical research in this field with a comprehensive analysis of both domestic and international accounting practice are rare ... insufficient attention is paid to improving the methodology of accounting for intangible assets. According to many scientists, the root of the problem is in the possibility to reflect internally generated intangible assets in the accounting system. A. P. Ivanov and Ye. M. Bunina considering the reputation of the modern company as immaterial component of productive power of its capital, note that "qualification and attributes of business reputation as an intangible asset are different as to the difficulty of estimating the object of accounting, the need for a thorough justification of the criteria of referring this asset to intangible assets" [1, p. 69].

The aim of this article is to analyze the developments on the issues under consideration, to research into the direction of the paradigms offered, to systematize them and formulate certain aspects concerning more coverage of intangible objects as a component of commercial enterprise capital by the accounting system.

Presentation of the main material. The concept of capital components as well as points of view on the capital cost parameters are changing together with civilization development of scientific and technical progress, conditions of business management and, as a result, production of new evaluation criteria of the potential of current functioning and long-term development of modern trade enterprise. The importance of information and intellectual components in the capital of the modern market entities is great. As an example, " business reputation is an important factor of strengthening the enterprise positions in terms of its stable development, since it ensures gaining additional competitive advantages on the markets of capital, resources, securities etc. [1, p. 67].

In the concepts and paradigms of post-industrial society economic resources of such type (information, knowledge) are recognized as the basic factors of competitiveness, investment attractiveness and long-term development potential. Scientists and practitioners are of the opinion that in the last years more intensively "there is beginning to form a new paradigm of influence of the role of intangible assets in the growth of the companies' value" [5, p. 11]. The tendencies of increasing the capital by the companies at the expense of intangible components are quite obvious from the analytical reviews of stock markets. That is why the formalized disclosure of information about such type of potential is essential for national economy trading companies, which operate in conditions of global competition.

Based on the economic nature (economic matter) and the nature of intangible assets we can assert the existence of direct relationship between their cost and the cost of the total capital of the enterprise, in particular, its intellectual component. Arguments that the "intellectual capital" is a term for intangible assets are quite common and clear [6, p. 37]. Although it is believed that "the emergence of the concept of "intellectual capital" in the scientific community in most cases was caused by the need to refer to those intangible assets that the market accepted, but accounting did not recognize" [7, p. 15]. This resulted in significant differences between the book and market value of postindustrial companies' equity.

The need to develop a new approach to consider the essence of intangible objects in the system of accounting and financial reporting is obvious, given the dominance of value criteria in assessing the effectiveness (increase of the company's value) and potential (productive power of the capital) of the modern market economy entities. It primarily concerns the issues of

formalized extension of the list of intangible assets, including objects created by the companies themselves (internally generated intangible economic resources). In terms of the definition of the objects of accounting "the biggest problem that arises during identification of an intangible asset is determining its differences from the goodwill. An intangible asset can be distinguished from goodwill only in case the company can sell, rent or exchange it" [4, p. 152].

The improved methodology of the intangible assets accounting should be oriented towards more extensive coordinates of considering intangible economic resources, arranging the process of their integral reflection in the accounting system. The methodology of accounting system that is adaptive to the information and knowledge economy should first of all solve the problem of identification and objective evaluation of the internally generated intangible objects. These assets are mainly directed to the identification and individualization of a particular enterprise (product), namely those which in marketing literature are associated with the term "brand" or economic "goodwill". In analytical reviews, the term "brand" is defined as "a trademark, which in the eyes of the consumer possesses clear and meaningful set of values and attributes" [8].

For such objects to be introduced into the accounting system, the determining factor is the possibility to measure their value, i.e. to have methodology for determining their value as of an economic resource in the relevant market segment. Despite the complexity of such an evaluation, "ability to display brand in the accounting system will reduce the gap between the market and the book value of companies" [7, p. 83]. Representation of the internally generated intangible assets, such as "goodwill", is the identical problem. The existing problems are confirmed by the fact that "developed concepts of the methods of evaluation and accounting of goodwill have passed several stages of modernization ... there are different options for its reflection in accounting: as an intangible asset, as a change in the capital, as expenses of the reporting period, positioning in other assets" [9, p. 28, 29].

Intangible economic resources of modern enterprises are very diverse, that is why sometimes they are articulated by substandard assets. For example, "the category "business reputation" is often equated with "goodwill" as it reveals essentially similar characteristics, features and value of these concepts" [1, p. 67]. In some cases, such objects may have the documented rights of ownership of them and the value recorded in the documents of the enterprise; in other cases, they have none of these. The first type of intangible assets of the company is referred to as trademarks, licenses, patents, copyrights and contracts. These intangible resources are recognized as assets because they are "the things owned by somebody" [10, p. 134], the right of ownership being protected by law. Fixing the value of this type of intangible assets in the balance of the company on the basis of documentary evidence of the ownership creates the conditions for their value assessment.

Intangible assets of the second type (the company's reputation, its corporate (organizational) culture, employees' knowledge) have no documentary evidence concerning the right of ownership, which causes the problem as to their fixing in the balance and assessing their value.

The generalized definition of intangible assets as an object of accounting is "assets are the resources controlled by the enterprise as a result of past events, the use of which is expected to lead to obtaining economic benefits in the future". This definition reveals the basis for their recognition as an object of accounting and public financial reporting. In addition, some specific accounting rules of standardization impose other criteria for recognition of intangible assets for the purposes of their introduction into the accounting system: a non-monetary asset that has no physical form can be identified and kept by an enterprise for more than a year. On the basis of these regulations, scientists point out that all these rules being accounted, "it appears that an intangible asset as an enterprise resource can be neither financial capital nor any capital at all" [11, p. 116]. However, "the right" itself is not a resource; it is neither capital nor labor or natural resource and therefore it cannot be an asset.

An intellectual product under certain conditions becomes an intellectual property, i.e. there is the fact of emerging property rights. Therefore, it is concluded that the sub-accounts associated with "the acquisition of rights", "are mistakenly included into intangible assets" and all these "extra" objects in intangible assets can be unified in one category, that of "deferred expenses" [11, p. 116].

The process of intangible resources evaluation is used for elaborating the strictly reasonable value of intangible assets of a certain category considering all alternative data. The selection of an appropriate value standard has direct influence on the estimated value of the object. The most effective and the best evaluation standard for intangible assets assessment is determined by four criteria: the legal admissibility, physical capacity, financial feasibility and maximum profitability [12]. The evaluation of intangible resources cost is conducted using cost, profitable and market (comparative) approaches.

Conclusions. The efficiency of modern enterprise management in general and the cost of capital as one of the most widely used criteria in modern economy require flexibility of accounting systems. Development and improvement of accounting and public reporting as a tool for management and regulation of the financial and economic processes should be considered in terms of opportunities to reflect and display the formal data about actually existing intangible assets in the company in relation to intellectual capital.

The practical implementation of the offers to display internally generated economic resources (trade name, trademark, reputation etc.) by domestic trading enterprises will contribute to the objectivity of the value characteristics of their potential and will provide formalized data for the processes of enterprise evaluation. Application of the probable concept of the internally generated assets estimation, their reflection in relation to the capital in any form as a part of the public financial reporting is significant for the Ukrainian trade enterprises because it increases their investment attractiveness.

References

1. *Ivanov A. P. Business reputation of the company as immaterial active / A. P. Ivanov, E. M. Bunina // Finance. – 2005. – No. 6. – P. 67–71.*
2. *Yaremko I. Y. Management of enterprise capital: economic and financial instruments: a monograph / I. Y. Yaremko. – Lviv press : Kameniar, 2006. – 176 p.*
3. *Vlasova N. O. Formation of an optimal capital structure in retail trade enterprises / N. O. Vlasova, L. I. Bezginova. – Kharkiv : DDUHT, 2006. – 160 p.*
4. *Didur S. V. Aspects of accounting of intangible assets / S. V. Didur, O. I. Avramenko, N. V. Kurochka // Economy and region. – 2007. – No. 1 (12). – P. 150–153.*
5. *Puzynia N. Yu. Assessment and management of the intangible assets of the company: a monograph / N. Yu. Puzynia. – SPb. : SPbHEU press, 2013. – 179 p.*
6. *Bruking E. Intellectual capital: scientific publication. / E. Bruking; translation from English. – SPb : Peter, 2001. – 288 p.*
7. *Kutsyk P.O. The accounting concept of value management of intangible assets of the enterprise: a monograph / P. O. Kutsyk, I. M. Drohobytskyi, Z. P. Plysa. Kh. I. Skop. – Lviv: R-7, 2016. – 268 p.*
8. *Brazylii N. M. Accounting and audit of intangible assets (on the example of food industry): author's abstract dissertation on the obtaining the degree of candidate of economic sciences; specialization 08.06.04 "Accounting, analysis and audit" / N. M. Brazylii. – K., 2007. – 20 p.*
9. *Kasych A. O. Theoretical and methodological bases of enterprise goodwill evaluation and accounting / A. O. Kasych // University of Uzhhorod Scientific Journal. Series "Economy". – 2015. – Issue 1(45). T. 2. – P. 28–32.*
10. *Hall R. The strategic analysis of intangible resources / R. Hall // Strategic Management Journal. – 1992. – No. 13. – P. 135–144.*
11. *Proskurina N. M. Problems and the ways of improvement of intangible assets accounting / N. M. Proskurina, V. V. Siomchenko, O. M. Bondarenko // Zaporizhzhia National University Journal. – 2008. – No. 1 (3). – P. 115–119.*
12. *Zymovets O. P. Analysis of native and foreign approaches to the evaluation of intangible resources. / O. P. Zymovets // Lviv Commerce Academy Journal. Economic series. – 2011. – Issue 35. – P. 149–152.*

Vol. 3, No. 1, 2016

UDC 331.108:37.031:59.9

I. Sytnyk
Ph.D. of Economics, Associate Professor
Lviv Polytechnic National University

UPDATING MANAGEMENT MODELS IN TERMS OF ENTERPRISE MANAGEMENT INTELLECTUALIZATION

Abstract. The article explores the dynamics of the proportion of adult population among the Internet users and the use of information and communication technologies by enterprises in Ukraine. The different impact of digital technologies on economic development of a number of countries is considered. The dynamics of the number of scientific as well as scientific and technical studies in the structure of GDP of Ukraine is analysed. The change of the quantity of industrial enterprises that carry on innovative activity is considered. Peculiarities of the change in volumes of realized innovative products of the Ukrainian enterprises during the period of 2005-2015 are identified. Key risks and reserves of strengthening the intellectualization processes of the enterprise management systems are determined. There are formed priority tasks for management systems of enterprises in conditions of dynamic development of information and communication technologies as well as processes of intellectualization.

Keywords: intellectualization, management system, model of management, knowledge, integration, efficiency, innovation.

Formulation of the problem

The current economic outlook and management paradigm are formed through the prism of the categories of "intelligence", "knowledge economy", "information economy". This leads to the occurrence of such terms of management and economic science as comprehensive globalization, the increasing role of human factors, the commercialization of the Internet, large-scale development of the intellectual potential and capital of enterprises, the use of deep institutional, technological and cultural environment.

At the same time, the current world is experiencing the best opportunities for intellectual growth in space and time due to the largest information and communication revolution in the history of mankind. After all, more than forty percent of the world's population has access to the Internet, and every day in the network there are new users that dynamically expands the boundaries of digital intellectual economy.

So, M. Castells names the modern economy informational and global. Iformational, because the competitiveness of agents in an economy is determined primarily by their ability to collect, process and use information, which is based on knowledge and global – because the principal economic activities are organized on a global scale. Iformational and global efforts for the achievement of a certain level of performance and the existence of competition can only take place within a global network [1, c. 81].

V. Heyets believes that in the new economy the decisive factor is the process of accumulation and use of knowledge: "in economy the knowledge is defining the intellectual potential of the society on which it relies and which is a collection of everyday and specialized knowledge." [4, p. 17].

Under such conditions the task of management is to ensure the ability to take advantage of rapid technological change, to overcome the traditional problems of development, to intellectualize management model (management system) and provide the growth of competitiveness.

Analysis of recent research and publications

Investigation of various aspects of the problem of formation of information economy, impact of information and communication technologies, online tools, personalized knowledge and intangible assets in the determination of competitive advantages of modern economic processes and management of enterprises finds its light in the works of such Ukrainian scientists as L. Fedulova [2], L. Melnik [6], V. Shevchenko [12], N. Shpak [13] and foreign researchers G. Kolodko [3], S. Tesyera and A. Rogera [15], T. Steward [14] and others. However, studies done by researchers insufficiently disclosed the interrelation between implementing the processes of intellectualization at national enterprises, on one hand, and obtaining economic benefits and effective management by these enterprises, on the other hand.

In fact, a study of the latest trends in the field of intellectualization of the economy and their impact on the enterprise management system will enable us to comprehend and summarize the key factors of actualization of management models and the process of formation of intellectual-knowledge assets of enterprises

The purpose of the article is to analyze the dynamics of using information and communication technologies, their impact on the implementation of innovation and the risks and opportunities of the growing process of intellectualization management systems of industrial enterprises.

Presentation of the main material

The modern expansion of access to digital information and knowledge technology brings the staff of enterprises a wealth of choice and great convenience. By strengthening the integration of specialists and units, increasing efficiency and implementing innovations, such access opens the opportunities to enterprises management and employees of which they were previously denied.

For example, digital databases and payment systems, new technologies entering the labour market, e-commerce, work in the Internet or in the field of business processes outsourcing, electronic document management, digital system identification expand access to public and private services etc.

To provide maximum access to digital technology and intelectuall-knowledge databases within enterprises, we need investments in the development of service infrastructure and intellectualization of processes that will improve the speed of decision making, subsystem integration, online planning and forecasting of economic activities, will stimulate the intellectual and professional partnerships from the research and development areas and establish effective criteria and forms of motivation and regulation.

Companies will be able to get the maximum benefit out of the processes of intellectualization of the management systems and reforms in the information and communication sector provided they are continuously stimulating intellectual activities of the staff, improving business environment in the units, investing into training and retraining and socio-cultural sphere, as well as improving labor conditions and safety, and promoting effective governance.

Without this foundation, availability of individual information and communication implementations will provide neither the growth of productivity nor the change of the management model.

Comprehensive intellectualization of all spheres of public life in Ukraine, economic activities of enterprises and their management systems is spreading much slower than individual elements of information, communication and digital technologies. Accordingly, the achievements of the intellectual-knowledge economy – the wider benefits for the development of enterprises from the use of technologies – are lagging behind in times or whole decades in comparison with the developed countries of the world. In post-industrial countries the integration of intellectual potential of the staff of the enterprises and information and communication technologies to deliver sustainable economic growth create opportunities for the production of innovative products, increase the effectiveness of management. However, the combined effect of the Ukrainian enterprises from the use of these possibilities, is much lower than expected and is unevenly distributed in terms of scale of enterprises and economic activities. To gain competitive advantage from the use of information and digital technologies, most of the enterprises need to overcome the "intellectualizing gap" that persists, particularly in the area of access to electronic databases via the enterprise Internet and in the status of "closed" models of management. However, large-scale introduction of digital technologies is not able to ensure the high efficiency of the management system of enterprises. To maximize the potential of the digital revolution, the country's government and businesses need to implement systematically the "analog extensions": to improve the legislation that ensures competition between economic entities in all national markets, strictly ensure the accountability of public institutions, allow the qualification of the staff of the enterprises in accordance with the requirements of a new intellectual-knowledge economy, dynamically upgrade the management system.

Digital technologies – Internet, mobile phones and other means of collection, storage, analysis and exchange of information in digital format – are spreading rapidly. In developing countries the number of households possessing a mobile phone is more than 70 %, in Ukraine more than 88 % [19]. Over the last ten years the number of Internet users in Ukraine grew up in almost four times: in 2005 it was 15 %, and at the beginning of 2016, according to an expert estimation, reached 62 % of the adult population of Ukraine (Fig. 1).

The proportion of users among people aged 18-39 years in Ukraine has reached 91 %, this is according to a survey by Kyiv International Institute of Sociology [16]. According to sociologists, the number of Internet users continues to grow faster than it was predicted. The main axes of the differences in Internet development in Ukraine remain unchanged, it is the age and type of settlement. As before, there is a linear inverse relationship between age and use of the Internet. The younger he or she is, the higher is the Internet penetration. The use of the Internet varies significantly depending on region of residence. Most households with a home connection is observed in

Kyiv (78 %), while in Kirovohrad region the number is nearly 2.5 times less.

On the other hand, among the surveyed enterprises of Ukraine in 2015 95.2 % used computers in their activities (in 2011 it was 87.7 %). The share of enterprises having access to the global Internet was 98.0 % (in 2011 – 86.2 %) from the total number of enterprises that used computers (Fig. 2).

Out of the total number of enterprises that used computers, 62,0 % (60,6 %) used in-house computer networks, while enhanced internal computer networks were used by almost every seventh enterprise. However, the number of employees of enterprises that used computers in their work constituted 34.5 % (28.2 %). Comparing internationally, Ukraine is in the segment of the countries with low GDP per capita; slightly higher than the world average index of implementing digital technologies by businesses – 0.41 (world average being 0.39) and the index of digitalisation of people – 0.67 and 0.71, respectively (Fig. 3).

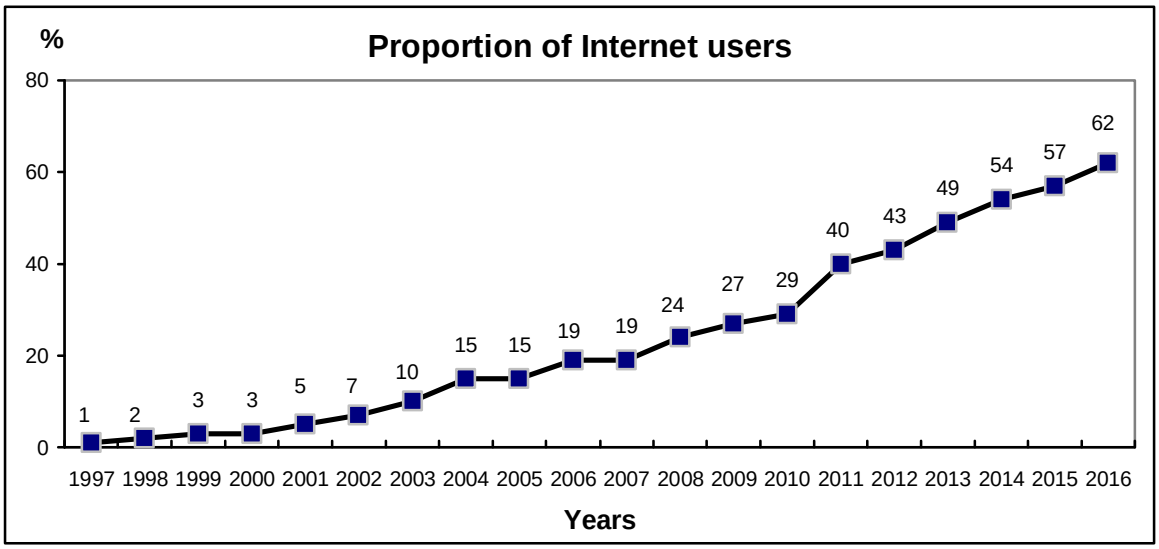

Fig. 1. The dynamics of internet users among the adult population of Ukraine

Note: The author constructed it on the basis of source [16].

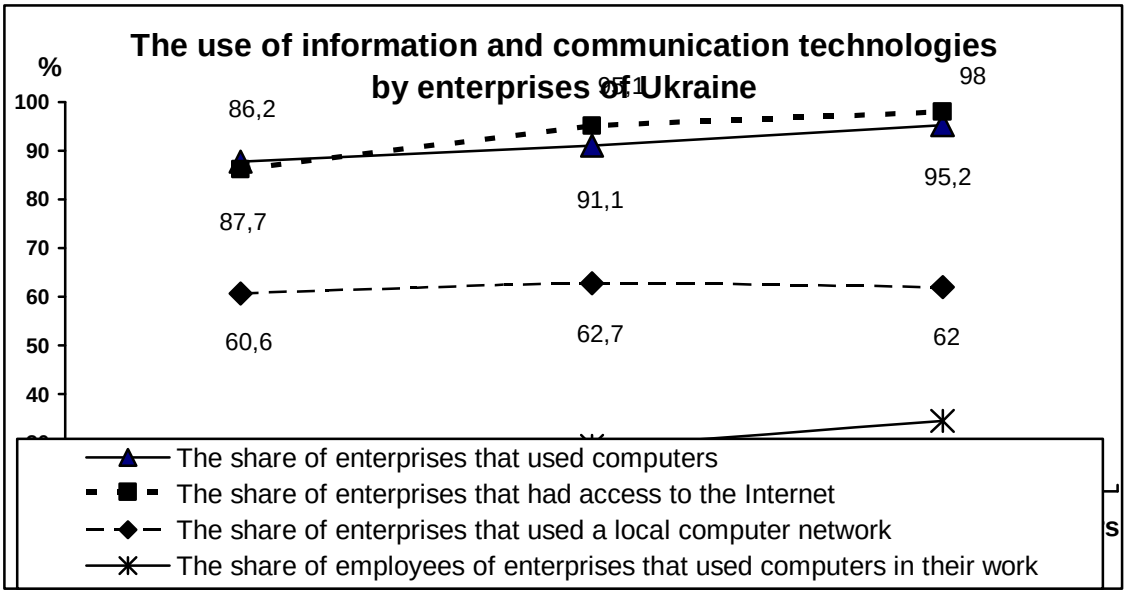

Fig. 2. Dynamics of the use of information and communication technologies by enterprises in Ukraine for the period 2011–2015, %

Note: The author constructed it on the basis of source [17].

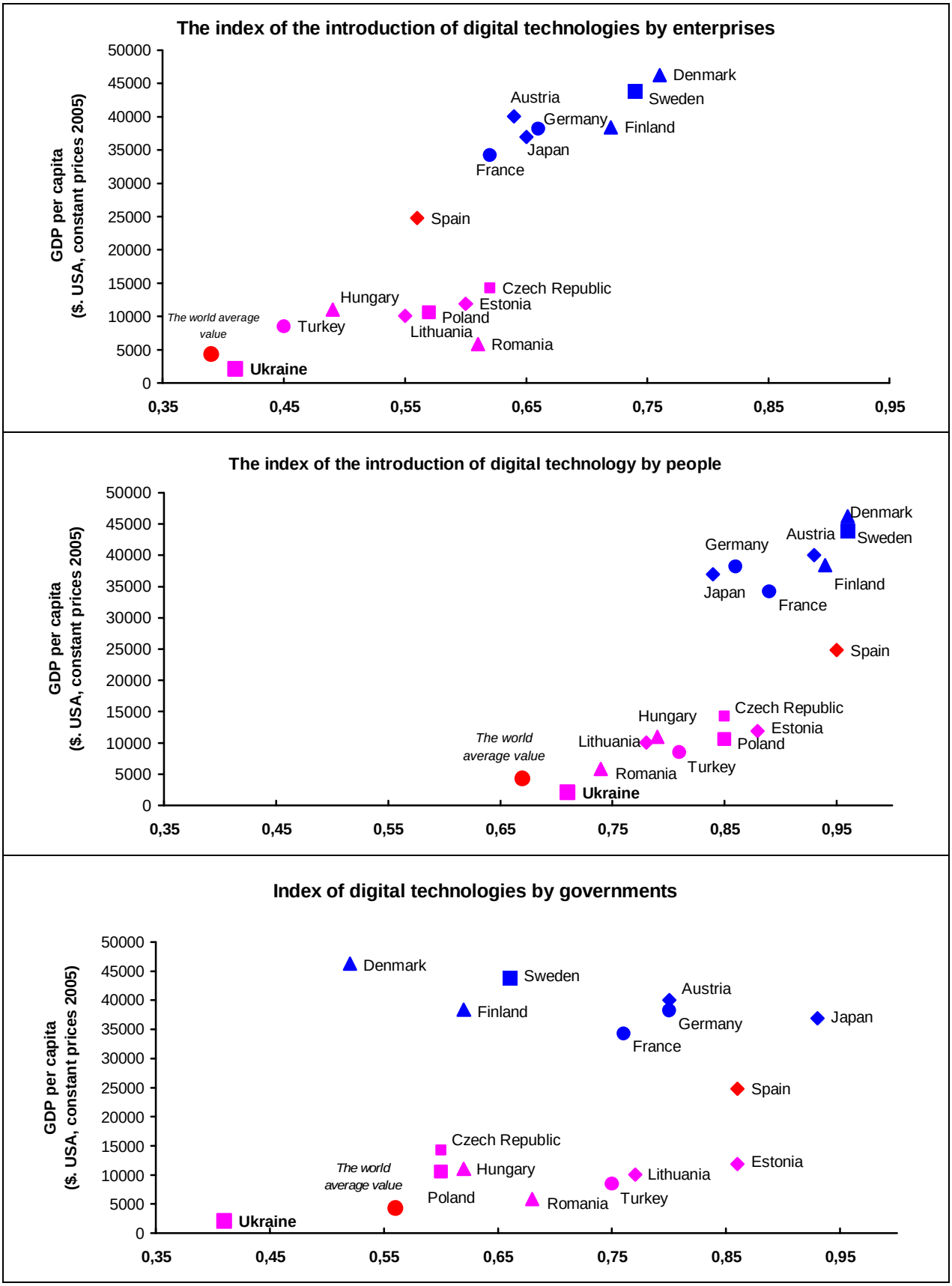

Fig. 3. The proliferation of digital technologies in a number of countries in the world

Note: The author constructed it on the basis of source [18].

The features of the world information progress indicate that at present communication networks bring together businesses, staff and individual specialists much faster, more systemically and functionally than ever before. The digital revolution offers opportunities and benefits not only to individuals in the field of efficient and convenient communication, information, free digital products but also to socio-economic systems.

However, technology can be a driving force of entrepreneurship and management transformation only when it is part of a more systematic and comprehensive process of intellectualization of the enterprise activities on the way to their dynamic competitiveness. It is the system of digital identification of growth of intellectual capital of companies, combined with mechanisms of motivation to acquire new knowledge. It allows to solve complex information and knowledge problems expanding functional and professional relationships. And, therefore, it forms the adequate tools for management to ensure integration between subsystems, units and levels of management. The portal of the local computer network of the enterprise integrates with the global Internet, systems of enterprise e-Commerce, recruiting and training of staff, and payment and stock banking platforms, financial and fiscal systems. These systems, combined with the creative ideas of development, significantly reduce coordination costs and thus continually improve the efficiency of management systems. The information and communication platform enables the efficient use of savings from the rapid exchange of knowledge and experience in space and time, individualization of performance objectives and localization of the workplace, achieved through online communication and automation. This allows creating large-scale innovations in the operating and management systems of enterprises.

The creation and transfer of knowledge, strengthening the integration between management levels, subsystems, units and personnel, introduction of innovations and comprehensive improvement of the management efficiency are the main intellectualization process mechanisms components to be used by enterprises for building their competitive advantages.

In fact, as it is rightly noted by scholars [5, p. 11], qualitatively new role of knowledge in economic performance has led to "new organizational and managerial solutions in the field of acquisition, distribution, storage, and distribution of knowledge, shaping it to the form that is suitable and convenient for internal use". Thus, a common phenomenon in the modern economy is the presence in the enterprise management structure of such staff positions as Vice-President on Intellectual Capital Management, Director of Knowledge Management, Director of Intangible Assets Management, Intellectual Assets Manager, head of the department of Human Resource Development and Knowledge Management etc. [5, p. 11]. Hence, one of the new duties of such managers is to bring ideas and innovations to the company's personnel who have no direct contact with the knowledge community.

These processes, as the scientist believes, have led to significant changes in the sphere of employment, its structure and content: development of non-traditional forms of employment and work organization – remote employment; reduction of the share of workers employed in the manufacture of a standard mass of material goods and an increase in those concerned with the provision of information, advisory and innovative services; increase in the proportion of workers of new knowledge-intensive professions; reduction of standard, massive, stereotyped operations and increase of the role of innovative creative work; the growing importance of physical and mental health of staff, their socio-psychological and moral-ethical qualities; individualization of the economically active human; changes in components of human resource management [5, p. 12].

At the same time, the dynamic growth and impact of new knowledge and information technologies on the amount of scientific and technical work in the structure of GDP of Ukraine, the number of industrial enterprises engaged in innovation activities, as well as the dynamics of sales of innovative products of Ukrainian enterprises so far do not justify the expectations from such change (Fig. 4–6).

It should be noted, that despite the significant strengthening of relationships between enterprises, scientific organizations, universities of Ukraine, the rate of productivity growth, intelligence capacity and innovation in products, the number of researchers, the number of authors of intellectual property rights at the national level have steadily reduced, and some parameters have shown a dynamic decline.

Despite the fact that the elements of the knowledge economy and digital technology are changing the way of thinking and labor there is observed polarization among enterprises – especially between different economic activities and markets, but also increasingly among enterprises with different number of personnel.

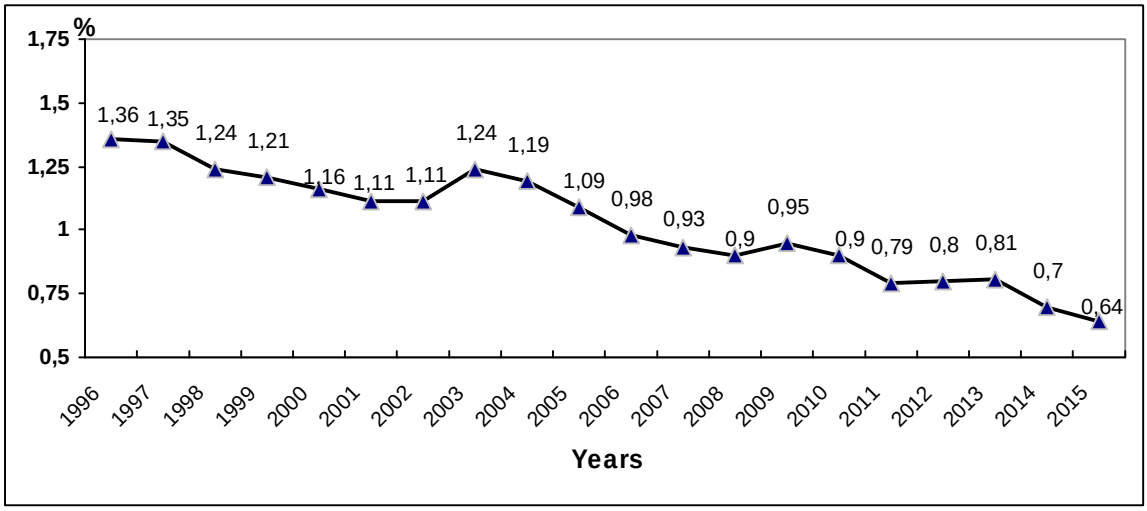

Fig. 4. The proportion of the volume of scientific and technical work in Ukrain's GDP

Note: Constructed by the author on the basis of sources [7-11].

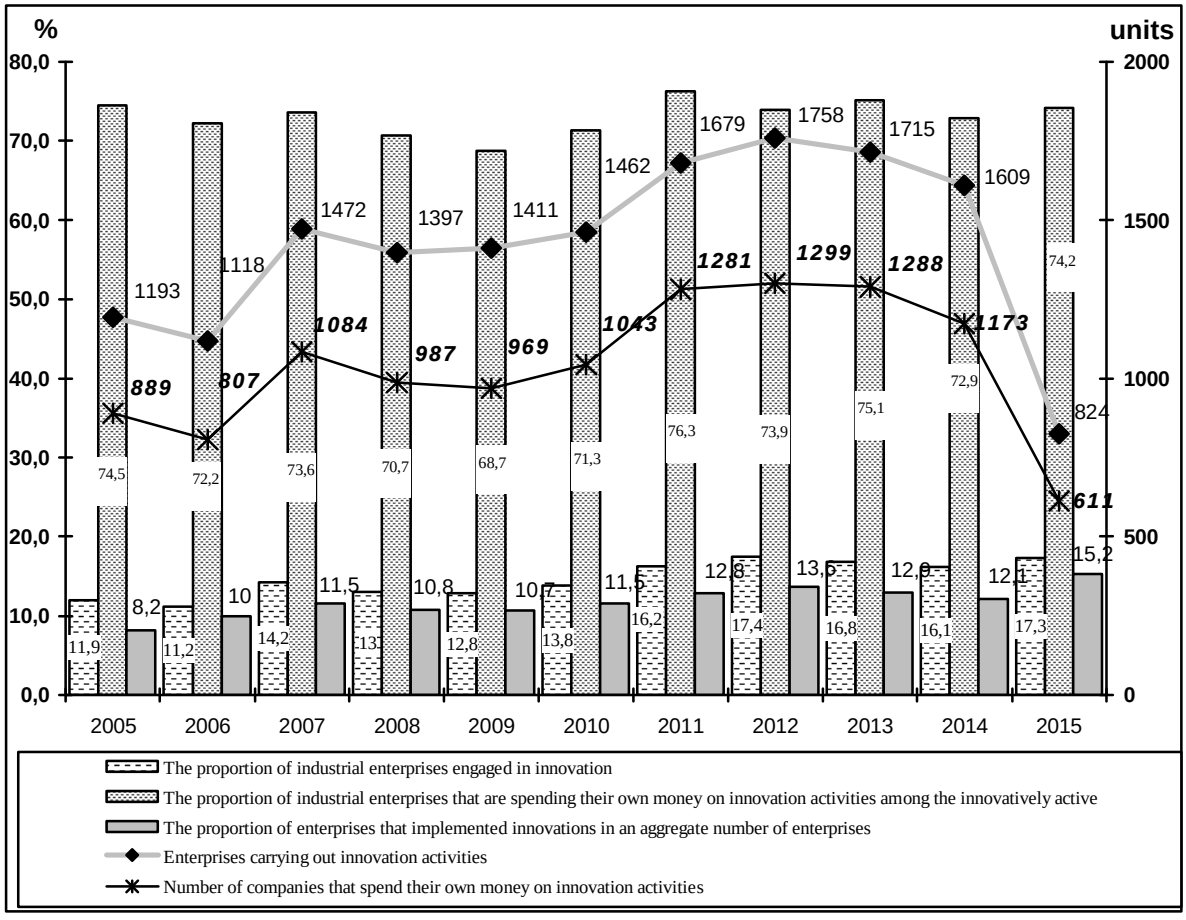

Fig. 5. [1]Dynamics of the number of industrial enterprises engaged in innovation activity, financed by their own funds in 2005–2015

Note: Constructed by the author based on sources [8–12]. [1] Starting with the report for 2015 – legal entities of economic activities in the industry with the number of employees 50 people or more. Due to changes in organization and the state statistical observation of innovation activities of industrial enterprises a direct comparison of the data for 2015 with similar data for previous years is incorrect.

And, although the number of enterprises engaged in innovation activities is slowly growing, the proportion of those who spend money on the acquisition of the scientific research works and knowledge with product, process and non-technological (organizational) innovation is reduced. Unstable is the number of enterprises which finance innovation activities from external sources. These tendencies persist, though not through deficit of intellectual and knowledge products or digital technologies, but contrary to them.

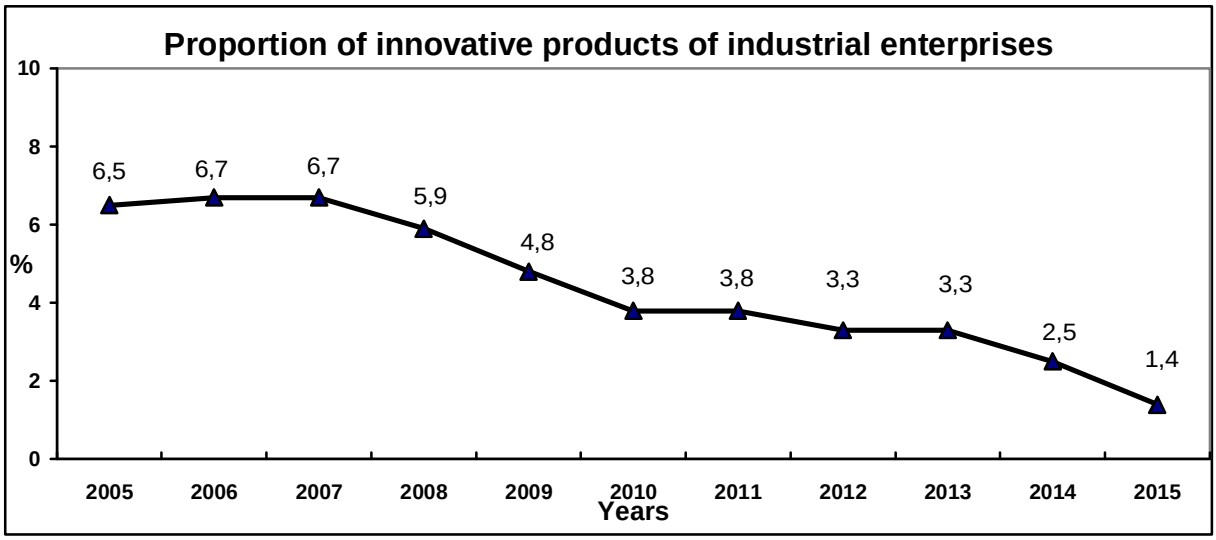

Fig. 6. The dynamics of sales of innovative products in the total volume of industrial products, percents

Note: Constructed by the author, based on sources [8–12].

Thus, the process of intellectualization among the national enterprises is spreading, but the economic benefits and the efficiency of management due to intellectualization is not. Why? Among the key reasons we can highlight the following.

Firstly, almost 80 percent of industrial enterprises employing 61.8 percent of all employed workers are not so far engaged in innovation activities and, therefore, can not use or play any significant role in the process of intellectual-knowledge and digital economy.

Secondly, many of the anticipated benefits from the processes of intellectualization are reduced to nothing by the risks generated by the oligarchic-clan, non-competitive model of the national economy and management (Fig. 7). On the one hand, a number of companies are not very active in the processes of intellectualization or innovation, because their competitive advantage is obtained from such sources as: a monopoly position in the market; lobbying regulatory acts; imperfection of transfer pricing; offshore schemes and corrupt connections with the authorities and justice and the like. And as the economy of the Internet contributes to the natural and artificial monopolies, the lack of a competitive business environment leads to increasing concentration in the markets. It is beneficial for established businesses that have the right connections and minimize their risks due to the economy of scale, but it restricts the growth of knowledge, distribution of the gains of the digital revolution and intellectual development of personnel.

Note that in terms of the types of economic activities, entrerprises are faced with the increasing polarization of labour markets and growing inequality because new knowledge, technologies and intellectual capital, on the one hand, complement the available more qualified work of employees and, on the other hand, they replace the standard labor operations forcing many workers to compete for low paid jobs. In the management systems of enterprises these processes rapidly maximize individualization of workplaces in terms of their technological and functional content, instead of deepening their integration and expanding their multi-functionality.

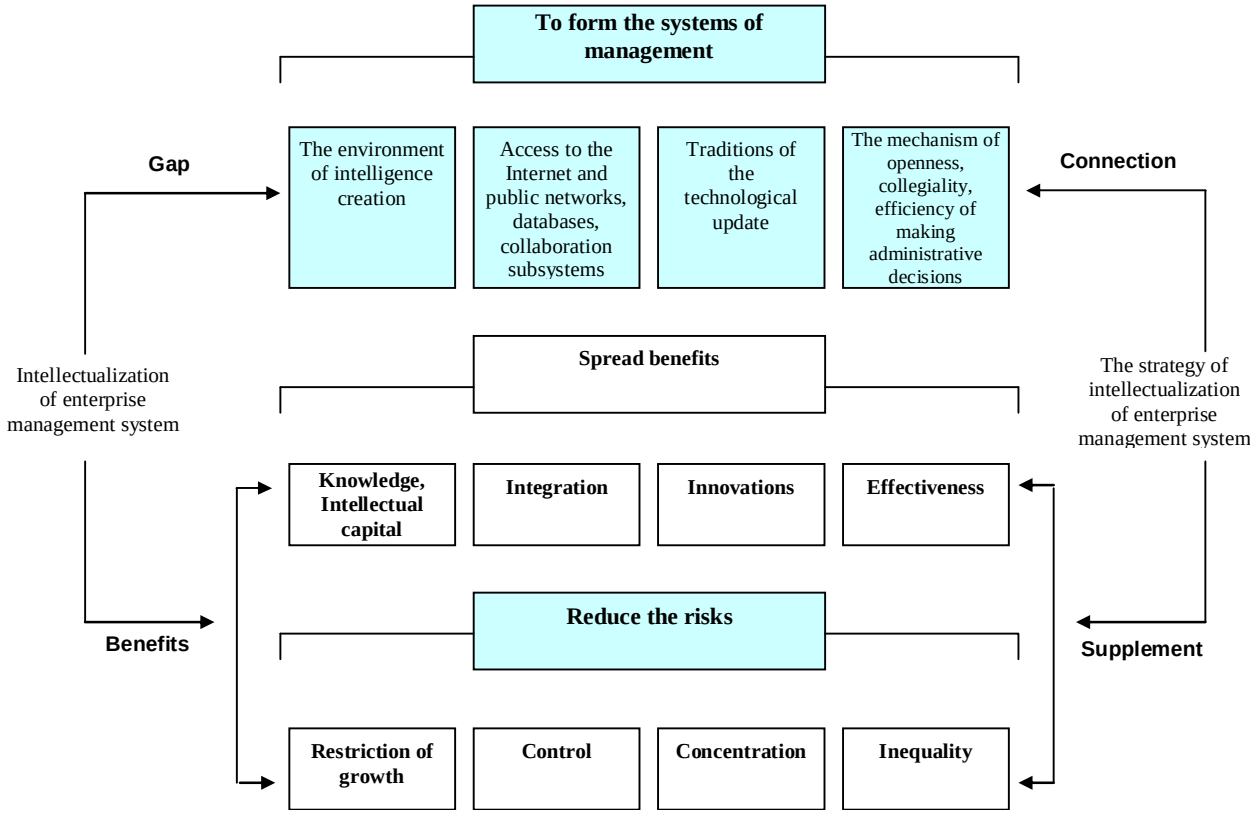

Fig. 7. Risks and opportunities of strengthening the processes of intellectualization of of enterprises management systems

Note: Formed by the author

In the management systems there is observed no generated environment of intellectual creation, effective instruments of accountability and coordination between levels of management, sub-systems and units. Under such conditions, investments in the development of digital technologies or personnel will increase exclusively the influence of managerial elites.

This can lead to the subordination of the enterprise policies to the interests of the institutional establishment and to strengthening of authoritarian control over the personnel. This is evidenced by great differentiation in payment between top management and middle level managers as well as technical and operational personnel.

Competitive economic growth is possible through increasing productivity, intellect-intensive jobs empowering employees and intelectualization of the tools of management technologies. Such approaches will really motivate to work more efficiently and organize and coordinate the processes with better quality. These are the areas of enterprise activities where investments in intellectualization will provide particularly significant benefits.

To get the most benefits from intellectualization, you need a deeper understanding of the nature of interaction between the intellectual and technological component and other factors that are important for the development of management designated as “analog supplements”. Intellectual technologies can make solutions to common management problems with a large volume of transactions less costly, much more efficient and convenient for personnel. But most of the functions, tasks and tools of management have aspects that cannot be automated or computerized.

Their implementation requires intelligence, thought, idea, intuition and discretion of the manager. If the intellectual technologies are used for automation of functions without a corresponding improvement of supplements, they may not provide a large-scale impact. Intellectualization can generate new management models, being advantageous for management

systems and personnel. But this is not possible in places where the process of management is conservative due to the absence of intellectual environment for creating management innovations. Intellectual technologies can increase the productivity of managers and employees. This does not concern those who do not have enough skills and knowledge required for implementation of these technologies and who are not motivated to use them creatively. Intellectual technologies help monitor the presence of managers and employees in the workplace, monitor operating activities, electronic paperwork and improve the overall performance. But this is not relevant for cases where there is no accountability of management systems and units to their higher and lower levels of management.

Considering the logics of the above said, key priorities for management systems should be:

– *formation of intellect-creating environments* where there would emerge platforms (Internet chat rooms, groups, online sites) for discussion, creation, and transfer of intellectual products;

– *widespread access to the Internet and open networks and databases* of companies for all the intellectually active personnel;

– *creation of tradition among the personnel in terms of creativity, intellectual activity and initiative* aimed at dynamic technological update of operating activities;

– *formation of mechanism of openness, collegiality, efficiency* of management decision-making and discussion of the strategic alternatives on the basis of innovation-oriented thinking of leaders.

Providing information and technological capabilities, in parallel it is necessary to develop a strong institutional and motivational analogous foundation, which will combine:

– *regulatory framework,* creating a dynamic intellectual and proprietary environment that will allow intelligence media, creative intelligence groups, management systems, and departments to evaluate legally the created intellectual product, identify the objects of intellectual property rights, generate motivational mechanisms, as well as to fully use the intelligent products and digital technologies for competition and future innovations;

– *classifier of intelligence competencies and skills* that will allow managers and employees to capitalize on opportunities in the field of intellectual creation, in particular, to provide Internet training for personnel development;

– *accountable management subsystems* that should be targeted and use intellectual products, media platforms, Internet technologies to increase the participation, rights and opportunities of the staff in corporate life.

Conclusions and perspectives of further research

These addational factors concerning favorable knowledge and intellectual environments, valuable human capital and effective management constitute a solid foundation for the economic and social effectiveness of the development of enterprises, ensuring their competitiveness. Therefore, the factors that facilitate intellectualization, such as integrated intelligent information services, digital identification to intellectual property rights, corporate intellectual and social networks and open knowledge base data will spread the benefits to all operational and business, social and economic activities of enterprises as well as their stakeholders. At the same time, they will strengthen the relationship between intellectual capital and its additions in the strategic dimension. These trends will form the basis for the development of mamagement models that are appropriately modern and competitive. Further studies should develop the integration mechanism of enterprises management subsystems components based on management intellectualization.

References

1. *Castells M. The information age: economy, society and culture / N. Castells. – M. : GU VSHE, 2000. – 608 p.*
2. *Fedulova L. I. Conceptual foundations of the knowledge economy / L. I. Fedulova // Economic theory. – 2008. – No. 2. – P. 37–60.*
3. *G. W. Kolodko. V. The "New economy" and old problems (prospects of fast growth in post-socialist countries) // Problems of management. – 2002. – No. 3. C. 18.*
4. *Geyets V. M. Socio-economic transformation in the transition to the knowledge economy] / V. M. Heyets // Socio-economic problems of information society / ed. by doctor of Economics, Professor L. G. Melnyk. – Sumy: ETC "University book", 2005. – S. 16–34.*
5. *Kolot A. M. Intellectual work and intellectual capital in the system of factors of formation of*

knowledge economy / A. M. Kolot // Economic theory. – 2007. – No. 2. – S. 3–14.

6. *Melnik L. G. Economy Information. – Sumy: ETC "University book", 2006. – 288 p.*
7. *Scientific and innovation activity in Ukraine. Statistical Yearbook / State statistics service of Ukraine. The state enterprise "Information and publishing center of the Goskomstat of Ukraine". – Kiev, 2008. – 361 p.*
8. *Scientific and innovation activity in Ukraine. Statistical Yearbook / State statistics service of Ukraine. State analyte inform: Kiev. – 2010. – 347 p.*
9. *Scientific and innovation activity in Ukraine. Statistical Yearbook / State statistics service of Ukraine. The state enterprise "Information and publishing center of the Goskomstat of Ukraine". – Kiev. – 2012. – 282 p.*
10. *Scientific and innovation activity in Ukraine. Statistical Yearbook / State statistics service of Ukraine. State analyte inform: Kiev. – 2015. – 255 p.*
11. *Scientific and innovation activity in Ukraine. Statistical Yearbook / State statistics service of Ukraine. State analyte inform: Kiev. – 2016. – 257 p.*
12. *Shevchenko V. Y. Global information economy and the competitiveness of domestic production // Theoretical and applied questions of economy. – 2005. – Vol. 6. – P. 58–63.*
13. *Shpak N.. The basics of communication management in industrial enterprises. Monograph. Lviv: Publishing house of Lviv Polytechnic, 2011. 328 p.*
14. *Steward T. A. Intellectual Capital. The New Wealth of Organizations / Tomas A. Steward. – New-York: Doudleday&Currency, 1997. – P. 67.*
15. *Tessier S. Les conditions du transfert des competences acquises dans une formation a l'actualisation du potentiel intellectuel [electronic resource] / S. Tessier, A. Roger// Université de Printemps de l'Audit Social. – Corte, 2003. – 11 p. – Access mode: http://centremagellan.univ-lyon3.fr/fr/articles/88_431.pdf.*
16. *The number of Internet users in Ukraine. Electronic resource. Access mode: http://dt.ua/TECHNOLOGIES/kilkist-internet-koristuvachiv-v-ukrayini-perevischila-60-207572_.html.*
17. *The use of information and communication technologies at the enterprises of Ukraine. Statistical Bulletin. The state statistics service of Ukraine. State analyte inform: Kiev. – 2011–2016.*
18. *The world Bank. 2016. The world development report 2016 "Digital dividend". Review. World Bank, Washington, DC. License: Creative Commons Attribution CC BY 3.0 IGO. Electronic resource. Access mode: http://www.worldbank.org/wdr2016; http://bit.do/WDR2016-FigO_1.*
19. *Ukraine – country of mobile communications. Electronic resource. Access mode: http://www.kiis.com.ua/?lang=ukr&cat=reports&id=224.*

Vol. 3, No. 2, 2016

UDC 658.1

Z. Skybinska,
PhD in Economics, Associate Professor
T. Hryniv
PhD in Economics, Associate Professor
Lviv Polytechnic National University

ECONOMIC ANALYSIS: HISTORY OF DEVELOPMENT AND MAJOR COMPONENTS

Abstract. In the article, the authors investigate the history of economic analysis and the interpretations of economic analysis; define its subject and object, and other major components. The major tasks and directions of economic analysis are described. The classification of factors in the economic analysis and the reserves for increasing production efficiency is done. The major principles of economic analysis are generalized. The place of economic analysis in the system of sciences is identified.

Keywords: economic analysis, factors in economic analysis, reserves for increase in production efficiency, tasks of economic analysis, principles of economic analysis.

Introduction

The study of the phenomena of nature and public life is impossible without their analysis. The term “analysis” originates from Greek “analysis”, which is translated as “decomposition”, “dismemberment”. Thus, an analysis in the narrow understanding is dismemberment of a phenomenon or an object into component parts (elements) for their study. It helps “glance” into the inside of the explored phenomenon, process, understand its internal essence, and determine the role of every element in the object or phenomenon. For instance, to understand the essence of the production cost, it is necessary to know not only of what elements it is composed, but also what determines its size for each item of expenditure. The more the cost increase is differentiated by elements and factors, the more we learn about the economic phenomenon and more effectively we will be able to manage the process of cost formation.

The phenomena and processes of environment can not be understood only by their analysis. Very often the need to use other methods comes up. The synthesis, most closely associated with the analysis, is a method of studying the subject in its integrity, identifying relationships and dependences between different parts of the explored subject. Analysis and synthesis are interconnected and interdependent in their unity; provide the scientific study of phenomena in multilateral dialectical relation.

Transition from the analysis of facts to the synthesis is carried out by induction (a way of transition from knowledge of separate facts to the knowledge of the whole, from the study of causes to effects) and deduction (a way of research from general to partial, from effects to causes).

An analysis and synthesis, induction and deduction, as the general methods of cognition make the base of economic analysis.

1. The basic tasks and directions of economic analysis

Economic analysis, as a scientific discipline, is the system of special skills, related to research of economic processes and complexes, rates, proportions, as well as progress trends, with the exposure of their deep essence and reasons, which predetermine different deviations from the planned indicators, contractual obligations, and with the objective estimation of their implementation.

Every science has the subject of research, which it studies with the proper purpose by its peculiar methods. Determination of the subject is of principle value for independence substantiation of any field of knowledge.

The subject of economic analysis includes:

– economic processes which occur as a result of economic and financial activities;

– causal connections, which determine the use of all types of resources and outcomes of the activities;

– reserves and the ways to increase the efficiency and to strengthen the competitiveness of enterprises.

Only by setting causal relationship of various sides of activity, it is possible to calculate quickly how basic results of economic activity will change due to this or that factor, to substantiate any managerial decision, to foresee changes in the profit value, break-even sales, financial stability, unit cost in case any production situation changes.

Objects of analysis, unlike subject, – are separate economic phenomena, processes, problems, questions, indicators. All objects of analysis in complex make the subject of economic analysis. Among objects of analysis, for example, there can be production and commercial activity, presence and use of material, labor and financial resources, products quality and profit, rhythm of production, financial results of production, financial state of enterprise and the like.

The purpose of economic analysis is:

1) to provide proper estimation of object's state and show how it differs from the planned state;

2) to identify opportunities and ways to bring the object from the actual state to the proper one;

3) to determine the size and nature of reserves to increase efficiency;

4) to prepare materials for choosing optimal production operational management decisions and to plan the further economic activities on the basis of the identified reserves.

In institutions of non-production sectors (health, education etc.) analysis is conducted to assess the national economic, economic and social effect that is achieved as a result of the activities as well as to estimate these institutions' compliance with costs saving and the expenditures on their maintenance.

The basic tasks of economic analysis are:

1) estimation of the enterprise economic activities and implementation of the plan;

2) identification of positive and negative factors influencing the enterprise activities;

3) control over the process of implementing the plan, as well as over reality and validity of the plan;

4) identification of unused reserves to improve the product quality, increase production and sales, as well as speed up the turnover of working capital;

5) control over production austerity and efficiency.

Among the major directions of economic analysis there are:

– theory of economic analysis;

– business analysis (financial and managerial analysis);

– analysis by economic activities;

– strategic analysis (Fig. 1).

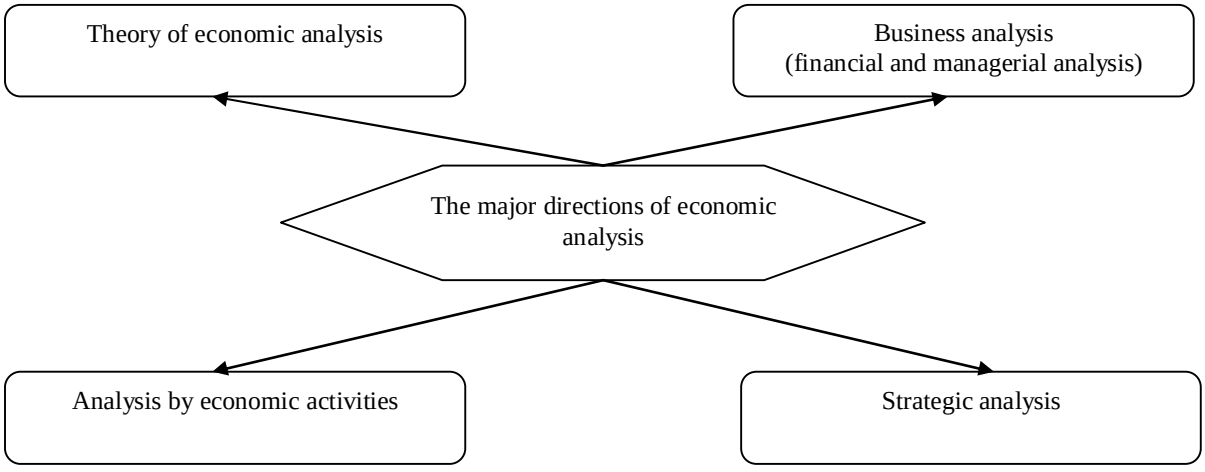

Fig. 1. The major directions of economic analysis

The theory of economic analysis is an integral component of economic analysis as a science, which is a set of generalized scientific statements (a system of principles, ideas) that summarize the practical experience and reflect laws of economic phenomena and processes in an analytical context.

Analysis of economic activities is an economic analysis of enterprise activities results, in which there is conducted a comprehensive

estimation of their compliance to the aim and objectives set. Such an analysis is an essential element of management. Its aim is to identify the value of economic indicators characterizing production, consumption of products, goods and services, resource efficiency, quality of manufactured products and see how these indicators are changing over time. During the analysis there are identified causes and possible effects of the factors that are observed and studied.

Strategic analysis is a comprehensive study of internal resources and capabilities of enterprises aimed at evaluating the future state of business, its strengths and weaknesses.

2. The establishment and development of the analysis of economic activities

It is necessary to distinguish between general theoretical economic analysis, which examines economic phenomena and processes at macro level, and specifically economic analysis at micro level, i.e. analysis of economic activities, which is used to study the economics of individual enterprises.

Formation of the analysis of economic activities was caused by general objective requirements and conditions that accompany the emergence of any new field of knowledge. Firstly, this is satisfaction of a practical need. An intuitional analysis, approximate calculations and considerations are insufficient for large production units. Without complex comprehensive analysis of economic activities it is impossible to manage complicated economic processes and make optimal decisions. Secondly, it is related to the development of economic science in general. As it is known, development of any science leads to differentiation of its branches.

Analysis of economic activities was formed as a result of differentiation of social sciences. Earlier the functions of economic analysis (when they were not so considerable) were performed within the limits of the then existing scientific disciplines, such as record-keeping, accounting, finances, and statistics. Later the first simplest tools of analytical research appeared.

The founder of systematized analysis as a component of bookkeeping is considered to be Jacques Sapary (1622–1690), though the use of some elements of economic analysis was observed in other countries, including Italy, at the same time. Thus Angelo Di Pietro promoted the methodology of comparison of budget allocations to actual expenses; Bastian Venturi analyzed dynamic series of indicators of the economic entity for ten years.

In the late XIX – early XX century there was gradually formed the original direction in accounting – that of balance studies. There was also actively developing the science of business (financial) calculations, which became the basis of financial analysis.

In the history of establishment and development of business analysis as a science such stages are distinguished: pre-revolutionary (1917), the post-revolutionary period, the period of transition to market economy.

Before the revolution, business analysis consisted mainly in analyzing and assessing the balance of assets and liabilities. There did not exist any specialized literature or unified schemes of economic analysis; there were used just brief instructions for commercial banks on how to check the creditworthiness of customers.

After 1917 economic analysis developed in accordance with various phases of socialist economy and the needs of the administrative-command system. The development of methods of analysis originally was due to the necessity of evaluating the accounting records. For a long time the development of methods of analysis was carried out by specialists in accounting and the first and sometimes the only practical workers who conducted the analysis of enterprises were the most experienced accountants. At that time there was analyzed only the company's balance sheet, and hence the first name of the course was "Analysis of the balance". Later, when the volume of reporting expanded, and thus, the amount of data increased and significantly changed the content of the information that was studied, the course got the title "Accounting Analysis". Thus we can assume that analysis comes from bookkeeping or "accounting". During the period of New Economic Policy, enterprises transferred to the principles of self-sufficiency, and therefore there appeared the desire to study and analyze the consequences of their economic activities; there was actively carried out analytical work on economic activities of consumer cooperatives. The need for implementing economic analysis in practice of industrial enterprises defined the course on industrialization of enterprises. Hard work on adjustment of accounting and control necessarily resulted into the

elaboration of special methods of studying accounting quality and business activities outcomes, being often based on summary reports of enterprises.

In the 30s analysis was introduced to the curricula of universities of the USSR in the form of the final section of the course "Accounting". There were printed the first textbooks and manuals (by N. R. Weizmann, S. K. Tatour, M. I. Bakanov and others) concerning analysis of balance. These books had methodological nature and therefore they can be considered to be the beginning of business analysis. It was just in the 30s that analysis established as a science. This was due to the following reasons: liquidation of the capital market, centralization of the banking system and liquidation of the real independence of enterprises. All this resulted in weakening the role of commercial calculations. The preference was given to the analysis of deviations of the actual indicators from the planned ones. The role of the balance sheet as a tool of financial management was reduced; the control function of analysis was strengthened.

In the 40s, they began to use normative, planned, technical and other types of information for performing analysis. The course got the titles "Technical economic analysis", "Analysis of economic activities", and finally, "Economic analysis". It was widely used in practice with the purpose of carrying on complex systems studies of the enterprise economics and finding resources to increase production. In future the role of economic analysis grew in accordance with the cost of error in performing economic activities.

The post-revolutionary period can be characterized as a period of thorough development of theoretical analysis. A special significance is given to analyzing individual sectors of the economy, studying the work of self-supporting enterprises and their divisions, developing methods of analysis of consolidated reports. Gradually there are developed independent areas of economic analysis, such as comparative, technical, economic, operational, economic and mathematical, functional and cost analysis and others. A great work has been done to develop the economic analysis and improve its methods, prepare the basic provisions for the implementation of economic analysis in the transition to market conditions.

Now economic analysis can be described as the science being sufficiently developed theoretically but at the same time being in the state of constant development. Research is conducted in relation to more wide application of mathematical methods, computers, which allow optimizing administrative decisions. Theoretical achievements of national and foreign science are being implemented in practice.

The prospects of economic analysis development in theoretical direction are closely associated with the development of related sciences, first of all, mathematics, statistics, record-keeping and others. Besides, the analysis development depends on the requests from practice. As to the perspectives of its practical application, analysis of economic activities is gradually becoming the key factor in the management system of any enterprise.

With the transition to market economy economic analysis is gaining importance at all levels of production. Using economic analysis it is possible to solve economic, organizational problems, make managerial decisions such as strategic decisions concerning planning and tactical decisions in operational management of the production process. Such analysis has an active character, as managerial decisions concern a particular economic entity and are aimed at improving the efficiency of its economic activities.

3. Factors' classification in economic analysis

Any production depends on its provision with appropriate resources. Their prudent use is an everyday anxiety and duty of every enterprise. Reducing unit cost of resources per unit of output contributes to social production efficiency, improves all indicators of manufacturers.

There are many types of resources. Among them there are natural, production, intellectual, financial, currency resources and others. For a production such classification of resources is suitable: labor resources, basic labor facilities and tools. An important production resource is space (land area) and time. Resources can be initial (natural) and derivative (artificial). Derivative resources include commodity, informative, financial, scientific and other resources.

In the process of production resources begin to interact with each other. Such interactions take the form of factors.

A factor is a motive force of any process or phenomenon, which determines their character and

result. Otherwise speaking, a factor is a cause, which brings certain effect (consequence). In production many causal relations (factors) are formed, and consequently, their identification, measurement and study constitute an important task of economic analysis.

Factors are classified according certain features (Table 1).

Table 1

Factors' classification in economic analysis

The feature of classification	Factors' types (groups)
The degree of influence on work results	primary and secondary
Places of origin	external and internal
The degree of dependence on the activities of individuals and legal entities	objective and subjective
Time	permanent and temporary
The nature of the impact	extensive and intensive
Level of coverage	general and specific
Internal content	quantitative and qualitative
The level of detailing	simple and complex
The level of subordination	of the first, second, ... n-th order

Primary are those factors that affect the results of the enterprise and secondary do not significantly affect the enterprise performance.

External and internal factors are the factors that depend and do not depend on the enterprise activities.

Objective factors are independent of the will and desires of the people, while subjective factors depend on the activities of businesses and individuals.

Permanent factors influence the phenomenon continuously during all the time. The impact of temporary factors appears periodically (new technology, development of new technology).

Extensive factors are related to the quantitative growth of the effective indicator, such as increasing production volume by increasing the number of workers, the number of days worked, duration of shifts. Intensive factors characterize the degree of effort, labor intensity in the production process, such as increased productivity, return on assets and others.

General factors are those which take place throughout the economy. Specific factors are operating in terms of only one sector of the economy or business.

Quantitative factors measure the quantitative characteristics of phenomena, and qualitative ones determine the internal quality features of the objects studied.

Complex factors, as opposed to simple, consist of several elements.

In terms of the factors' impact on economic phenomenon or process (level of subordination) there are distinguished factors of the first, second and ... n-th order. The factors of the first order are those that directly affect the effective indicator. All other factors affect the effective indicator indirectly, through factors of a higher level.

A factor always has not only a size but also a direction of action. That is why there are distinguished positive and negative factors. The last factor is often associated with production reserves. Thus appears one more definition: a factor is a predecessor of production reserves.

4. Reserves for increase in production efficiency

Under the influence of labor or power factors production resources begin to move, interact and, eventually, they transform into new things – material wealth, products. But part of the resources remains unused or is used inefficiently, lost, deteriorated and accumulated as wastes, is evaporated, weathered or dissolved in water. In this connection there turns out the issue of production reserves.

While studying this category it is necessary to realize that the concept "reserve" has two different definitions.

1. Reserve is a stock of resources, which is not used consciously and is supported at certain level as a means, which provides reliability and continuity of operation of any system.

2. Reserve is an unused or lost opportunity of something, for example, growth of production, improvement of products quality, profitability increase and so on.

In the first definition reserve characterizes any reserve stock. Remember currency reserves of the National Bank (stocks), insurance and reserve funds of the country and enterprises, standby power grids etc.

The second understanding of reserve is associated, first of all, with different losses of resources (spoilage, loss, shortage, and depreciation), fines and penalties payments as well as other losses. Those are obvious, unquestionable reserves. However, there are such reserves, which are predetermined by the increase of resources consumption norms, payroll over-expenditure and so on. Some reserves are irrecoverable losses of resources or profits, others can be used in the next periods of time. Classification of reserves is presented in Table 2.

Table 2

Classification of reserves to increase production efficiency

Features of grouping	Types of reserves
By sources of improving production efficiency (factors of the labor process)	– labour reserves – reserves of using labor facilities – reserves of using labor tools (material resources)
By place of emergence (sources of formation)	– external ü industry ü regional ü nationwide – internal
By the nature of impact on the results of activities	– extensive – intensive
By final results, which are affected by reserves	– increasing the volume of production; – improving the structure and assortment of products; – improving product quality; – declining the unit cost by cost elements, by items of expenditure, by centers of responsibility; – improving production profitability; – strengthening financial position and increasing profitability.
By product life cycle stages	– pre-production stage – manufacturing stage – operational stage (exploitation) – stage of product recycling
By period of use	– current – perspective
By means of detection	– obvious – hidden

The main feature of classification of production reserves is classification by sources of improving production efficiency, which embrace three main groups (simple moments of the labor process): purposeful activity, or work itself, the subject of labor and the means of labor. By this feature, there are differentiated three groups: material resources reserves, production reserves, and labor reserves.

From the position of the company, depending on the places of emergence (sources of formation) they distinguish external and internal reserves. Depending on the level of management, external reserves are divided into industry, regional, and nationwide. The use of external reserves affects the level of enterprise economic indicators, but the main source of savings for enterprises is, as a rule, internal production reserves.

By the nature of impact on the results of enterprise activities reserves are divided into extensive and intensive. Extensive reserves include those, the implementation of which requires involving additional resources. Intensive reserves are considered to be most fully associated with

complete and rational use of the production possibilities of the company.

Reserves are also classified by final results, which they affect. There are distinguished the following reserves: of increase of production output; improvement of the structure and assortment of products; product quality improvement; reduction of unit cost by cost elements, by items of expenditure, by responsibility centers; improvement of production profitability; strengthening of financial position and increase of the level of profitability.

For rational organization of reserves' search a great value has their grouping by stages of reproduction process (supply, production and sales), as well as by stages of creation and usage of products, i.e. the product life cycle (pre-production stage – design and technological preparation of production; manufacturing stage – development of a new product and new technologies in production; operational stage (exploitation) – consumption of a product, utilization stage –removal of a product from manufacture).

On the basis of the period of use reserves are divided into current (implemented during a year) and perspective (which can be realized in the longer term).

By means of detection reserves are classified into obvious (liquidation of obvious losses and cost overruns) and hidden, which can be detected by a deep economic analysis, its particular methods, such as inter-economic comparative analysis, function-value analysis and others.

In the process of calculating reserves it is necessary to consider the following rules:

1) reserves should count only the negative impact of factors that may be affected by the company;

2) during calculation of production output increase reserves:

– from one moment of work (use of the objects of labor, means and efficiency of labor) – there is calculated the total reserve;

– from all three moments of labor there is calculated a complete reserve, that is the smallest of three groups of reserves, provided with all kinds of resources.

The company should reinforce all identified reserves with the necessary means that allow these reserves' mobilization and implementation into practical activities.

5. Basic principles of economic analysis

Analytical research, its results and their application in production management should meet certain requirements. These requirements have their impact on the course of analysis and must be obligatory met during analytical research design, organization, conduction and practical use of analysis results. Major principles of analysis are presented in Fig. 2.

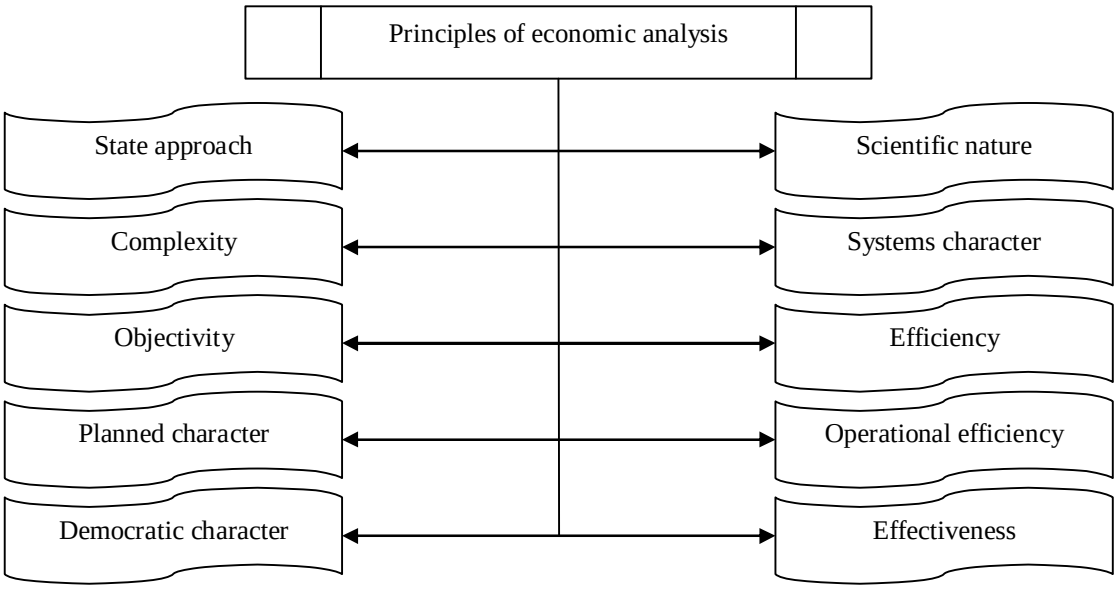

Fig. 2. Principles of economic analysis

State approach consists in estimation of certain events of economic life with the account of the state economic, social, ecological, international policies and current legislation.

The principle of scientific nature is based on the ideas of dialectical theory of cognition, takes into account the requirements of economic laws of production development, and draws on scientific achievements, as well as innovative progressive methods of economic research.

A complexity includes maximum structural subdivisions and directions of activity. It comprehensively studies causal dependences in organization development.

The systems character consists in the fact that an object which is studied is examined as a difficult dynamic system, which contains elements, linked between themselves and with an external environment. All internal and external links must be taken into account, as well as interdependence and inter-subordination of certain elements.

Objectivity is based on the verified information which reliably shows the objective reality. Conclusions must be substantiated by exact analytical calculations. This requires the permanent improvement of the organization' accounting system, systems of audit, revision and control, as well as methods of analysis to increase accuracy and reliability of calculations.

Effectiveness implies the ability to impact actively on the results of production, to identify shortcomings in time and promptly inform the enterprises management about them. This principle induces practical use of analysis results in the system of enterprises management for developing concrete measures on substantiation and correction of the planned figures.

Planned character implies conducting analysis according to a plan, systematically and regularly. This causes the necessity of analytical work planning in the organization, distribution of duties between executors and control after its conducting.

Operational efficiency is the ability to quickly and accurately conduct the analysis of situations, make proper managerial decisions and implement them at the enterprise.

Democratic character foresees participating of a wide range of workers in conducting analysis, provides a comprehensive study of good practices and the use of internal economic reserves.

The efficiency is based on the fact that the cost of performing analysis should be appropriate, timely, and give a multiple effect.

These principles must be observed in performing economic analysis at any level of management.

Conclusions and prospects for further research

Economic analysis was formed at the intersection of many sciences by integrating some of their elements. This formation occurred following the urgent need for enhanced scientific development of issues associated with the necessity to clarify the impact of an increasing number of reasons and factors that determine the effectiveness of economic entity activities in market conditions and competition. First of all, a direct connection of economic analysis with the development of other economic sciences, particularly, economic theory should be emphasized. The laws of economic development formulated by this science form the theoretical basis of economic analysis. Since the general laws of economic development differently manifest themselves in individual industries, the analysis of their economic activities should be based on the industrial economy. And as a consequence, economic analysis is connected with the economics of industry, agriculture, construction, transport and so on. Economic analysis is very closely linked with accounting and statistics. Materials of accounting, tax, managerial, statistical reporting, sample observations are the information base for the analysis of economic phenomena and processes occurring in the enterprise.

Statistical techniques and methods of economic information processing are very widely used in analysis as a statistical science develops methods for groupings, indices, correlation, regression and so on, essentially updates the arsenal of analytical methods and techniques.

Economic analysis is closely related to the audit. The audit cannot be considered an effective tool of studying activities of economic entities, if inspection and audit of economic activities do not include elements of analysis. Analysis and forecasting of the financial conditions of the company, its profitability, and financial stability should be considered as the ultimate goal of the audit.

Economic analysis makes extensive use of mathematical science achievements; the ability to picture a particular economic phenomenon using economic and mathematical models of economic analysis opens up endless possibilities for improving techniques, methods and tools of analysis and organizing analytical work.

Economic analysis is related to management due to the necessity to make managerial decisions. Taking optimal managerial decisions has turned

into a major problem nowadays. Economists are developing the theory of managerial decision-making, which is one of the sections of management science. Decision-making theory should account multiple choices, uncertainty and influence of factors on every single option. In these conditions economic analysis is urgently needed.

Marketing and economic analysis imply the analysis of macro and microenvironments, opportunities, competitors, market prices, market conditions and as a result, the development of marketing programs.

Financial and credit disciplines also have a connection with the economic analysis. This connection implies applying methodical principles of analysis to studying financial possibilities, the ways of strengthening financial position, justifying the amounts of loans to be taken etc. In market conditions such a connection is a necessity.

Thus economic analysis is a synthetic science, which was formed on the basis of differentiation and integration of many sciences.

With the help of economic analysis it is possible to check whether planned assignments are substantiated, whether all the possibilities to improve the enterprise economic activities by increasing production capacity, labor productivity have been used, i.e. whether the plan is intense enough. Using economic analysis it is possible to identify the unused possibilities of increasing efficiency of the enterprise economic activities – rising production and sales volumes, cutting prime costs, improving financial results and financial state of the enterprise.

An economic analysis is directed toward the improvement of performance of enterprises yet at the stage of developing plans, when the intensity of planned tasks is estimated. At the same time, economic analysis allows controlling plans fulfillment by the enterprise as a whole and by its structural units – shops, sites, teams etc.; it helps discover drawbacks and identify the contribution of every unit into the overall results.

In the process of analysis the level of responsibility of every worker for economical use of resources is determined. Production, financial and investment activities are analyzed, that allows identifying factors, which influence all directions of enterprise activities.

An economic analysis is based on the objective estimation of the use of resources which an enterprise uses for achieving the best financial results with minimum expenses. It allows defining real production possibilities of an enterprise, its scientific and technical potential, as well as the ways to mobilize the identified resources for work improvement. Besides, economic analysis helps to quickly adapt to the changing market environment, to predict possible changes of partners' behavior, to avoid unnecessary economic risk.

References

1. *Andreeva G. I. Economic analysis: textbook / G. I. Andreeva. – K. : Znannia, 2008. – 263 p. – (Series "Higher education XXI century").*
2. *Bulativ A. S. Economic analysis of business activity: manual / A. S. Bulativ. – K. : Znannia, 2007. – 408 p.*
3. *Kindratska G. I. Economic analysis: textbook / G. I. Kindratska and others – 3th edition, remake and expanded – K. : Znannia, 2008. – 487 p.*
4. *Kozak I. I. Economic analysis: textbook for students of institution of higher education / I. I. Kozak. – Lviv Regional Institute of Public Administration of National Academy of Public Administration of the President of Ukraine. – 2-th edition. – L. : LRIPANAPA, 2010. – 217 p.*
5. *Kosova T. D. Organization and methodology of economic analysis: textbook / T. D. Kosova, P. M. Suharev, L. O. Vashchenko, I. V. Grechyna, N.E. Deeva. – K. : Center of educational literature, 2012. – 528 p.*
6. *Lazaryshyna I. D. Methodology and organization of economic analysis : textbook / I. D. Lazaryshyna. / Ukrainian State University of Water Management and Environmental Sciences. – Rivne : USUWMES, 2004. – 112 p.*
7. *Mnyh E. V. Economic analysis of business activity / E. V. Mnyh, Kyiv National Trade and Economic University. – K, 2008.*
8. *Sopko V. V. Organization of accounting, economic monitoring and analysis: textbook / V. V. Sopko, V. P. Zavgorodnij / Kyiv National Economic University. – K. : KNEU, 2004. – 411 p.*

Vol. 3, No. 2, 2016

UDC 330.341.1

N. Stanasyuk
Ph.D. in Economics, Associate Professor,
Lviv Polytechnic National University

FORMATION OF MECHANISM OF INDUSTRIAL POTENTIAL DEVELOPMENT STATE ADMINISTRATION

Abstract. The article reveals the substance of the category of "mechanism" and analyzes approaches to its formation as an element of the management system. Conceptual principles of management mechanism of industrial potential development using subject-object approach are defined. There are identified the elements of the state administration mechanism based on micro- and macroeconomic "resource – result" models and on the receipt of the best possible result with the optimal combination of different functional blocks. Stage-by-stage methodology of its formation based on program-purpose approach is offered.

Keywords: mechanism, intra-business management, state administration, industrial potential, development.

Formulation of the problem. The key problem of modern economic development of the country is finding the way out of the protracted economic crisis. Thus, structural and technical modernisation of industry is considered as a strategic vector of future economic growth that must become the basis for future positive changes in the economy. Hence, the industrial potential becomes the foundation for structural improvement of national economy, and its development will assist the rapid accumulation of scientific and technological innovations that will lead to the formation of innovative economy as a transitional period to post-industrial type of development.

With the account of the strategic role of industrial potential, there arises the necessity of effective state administration able to provide progressive changes in its development. Formation of management mechanism, selection of its basic elements and adjustment of the balanced interrelation between them will increase the management quality, effective use of present potential and achievement of strategic vectors of economic development considering the processes of European integration and world globalization on the whole.

Analysis of recent research and publications

Conceptual principles of state administration are widely highlighted in works of native and foreign researchers. According to the well-known American philosopher F. Fukujama, it was just the reduction of the role of the state during the last years that resulted in world crises [1, p. 20]. O. V. Raevneva states that the most active element of a management system is a mechanism [2, p. 225]. O. Korotych believes that "a certain management mechanism is the tool for realization of purposeful transformations" [3, p. 25].

A considerable contribution to the development of a toolset of management mechanism has been made by O. Kuzmin and O. Melnyk who suggested distinguishing five general functions of management: planning, organizing, motivating, controlling, and regulating, which are performed with the account of specific features of the management object [4, p. 58]. However, most current scientific research focuses on the development of management mechanism at the local level (an economic entity – an enterprise [2–11]), while the issues forming the state administration mechanism of industrial potential development at higher hierarchical levels remain poorly studied.

The objective of the research is to justify the content of the mechanism of state administration of industrial potential development, and to identify its structural elements as well as develop methodology of its formation.

It is worth noting that scientists and practitioners interpret the concept of "mechanism" differently. It is believed that this term appeared due to the development of engineering sciences. Taking into account the content of this concept as an economic category, it is possible to distinguish three basic approaches to its determination:

– as a means, an instrument of influence;
– as a system of interrelated elements;
– as a sequence of processes.

Zh. M. Balabaniuk states that a mechanism is "the system, which determines the order of any type of activity [5, p. 190]". Compliance with the

order is achieved due to the clearly defined purpose, which is a basic element of the mechanism. Besides the purpose, there are identified functions, methods, principles, instruments and levers as elements of mechanism, the application of which allows achieving the defined purposes. Using the subject-object approach it is possible to divide all the elements of the system into the elements of a managing subsystem and the elements of a managed system. The authors of the work [6, p. 178] suggest dividing a mechanism structurally into two blocks: a management system and a target subsystem, within the limits of which it is possible to determine management effectiveness. Such a division allows separating clearly the key elements and arranging the relations between them. This makes the system more balanced and improves the quality of management.

In the context of our research, it is the development of industrial potential that is considered to be the managed subsystem, which, under modern conditions, requires the immediate interference of the state in order to regulate the structural disproportions and to establish the balanced interaction within the system. As to the subject of management, it should be examined at some hierarchical levels: international, national, regional, and local. Levels of management are characterized by certain subordination related to the differentiation of functions and identification of various areas of responsibility.

O. Fedorchak defines the management mechanism as a system having a certain structure, methods, leverages and instruments of influence on the object of management [8]. The purpose is achieved just through the functional elements of the mechanism, which are shown in their general form in Fig. 1.

It is worth pointing out that though the mechanism's division into elements is typical, the internal content of these elements considerably depends on the essence of the object. So, taking into account the specific features of the object being managed, we suggest distinguishing the following elements of the mechanism of state administration of industrial potential development (Table 1).

Mechanism, as a whole, is a harmonious combination of elements accounting specific features of modern stage of economic development of the country and its strategic goals.

First of all, it is possible to estimate the scale and possibility to use resources on the basis of formation of the system of input and output growth indicators. The input parameters answer the question what we have, while the output parameters – where it is better to use the available resources.

A macro-environment is characterized by considerable changeability and causes changes in the size of industrial potential by input and output criteria. Thus, components of industrial potential are variables dependant on the factors of influence, which are to be reasonably united into groups depending on the nature of changes they cause, that will allow creating a by-element structure of macro environment with the effective system of relations. Under these conditions, development of industrial potential is the result of joint influence of integration of institutional and legal, economic, social and cultural, geopolitical, scientific and technological, natural and ecological environment.

Optimization of industrial capacity should be oriented to the needs of the internal market, taking into account the requirements of the industrial modernization and global integration processes with the aim of entering foreign markets with the domestic industrial production. As Kindzerskyi Yu.V. states, "tactics of structural changes should be extracted from the need to focus on specific segments of domestic and foreign markets" [12, p. 533]. Thus, both current state of industry and future targets should be taken into account now.

There was a considerable increase of research concerning spatial economy during the last decade. Space is no more limited only to the territorial aspects; it gained complexity with regard to the allocation of its structural elements. Based on the systems approach, the model of multidimensional space, offered by M. M. Gabriel, includes five constituents (person, function, conditions, geometry, time) [13, p.533]. The issues of spatial organization of industrial production are more often reduced today to creation of industrial clusters as an innovative form of organizing the national economy. M. Porter characterizes industrial clusters as groups of interdependent enterprises, institutions, organizations that can cooperate and are geographically concentrated [14, p. 149]. The cluster model of industrial potential development will allow to get a synergistic effect as a result of integration of interests of different participants with a common goal.

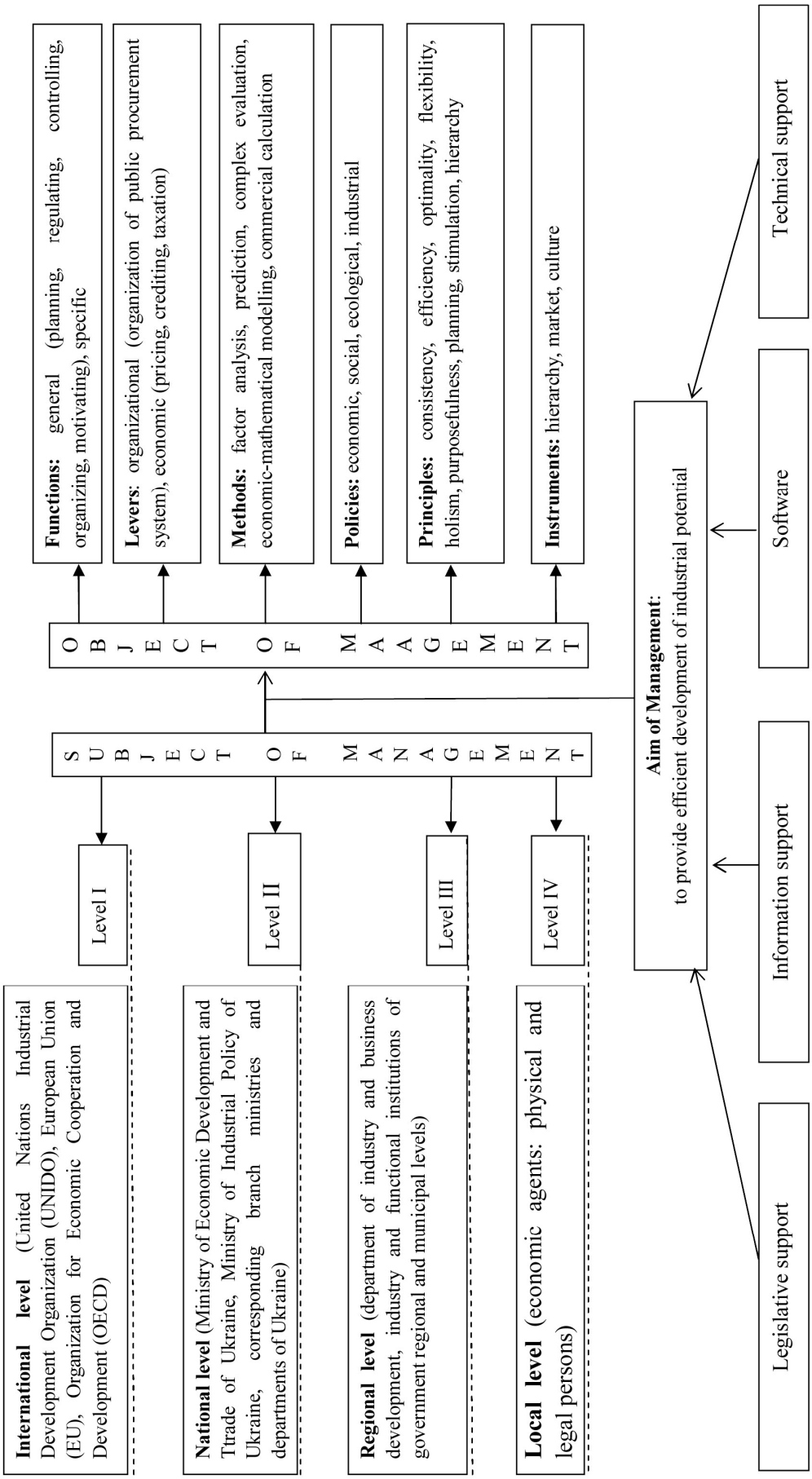

Fig. 1. Conceptual model of the administration mechanism of industrial potential development
Designed by the author on the basis of [2-11]

Table 1

Specific Elements of the Mechanism of State Administration of Industrial Potential Development

Elements of the mechanism	Essence of the mechanism elements
Formation of input and output indicators of industrial potential development	Determination of indexes, which characterize input and output indicators in order to fulfil complex evaluation of the level of industrial potential development
Analysis of the factors influencing the development of the industrial potential development	Establishment of cause and effect relationship between the indicators that represent the factors of influence and the indicators that characterize the development of industrial potential
Structuring the industrial potential	Optimization of structural development of the industrial potential
Spatial organization of industrial potential	Identification of industrial clusters and analysis of their influence on the development of industrial potential
Introduction of innovations	Assessment of possibility of certain type of activity to produce science-intensive products
Development support	Formation of the support system (infrastructure, information, marketing, logistic) to ensure functioning of basic potential elements (industrial and economic, social and labour, financial and investment and innovative components)
Establishment of relationships between management bodies	Allocation of local, regional, and national priorities in development and differentiation of powers
Means, ways, and sources of attracting resources	Methods and techniques of state administration: preferential bank loans, tax benefits, organization of public contracts, investments attraction etc.
Effectiveness	A comparison of the actual performance with the planned one (predicted)
Efficiency	Comparison of the results obtained with the resources used

Improved by the author

Taking into account rapid development of scientific and technical progress as a basic factor of forming innovative economy, production of scientifically-intensive goods is the guarantee of successful economic development of the state. As a result, one of the main tasks of state governance is formation of the national innovative system, in the scopes of which realization of specific functions involves taking into account requirements of the economy of knowledge. Just its elements provide promotion of the innovative idea to the market, cause technological changes in the structure of industrial potential in order to form higher technological modes by increasing the share of high- and medium technology industrial manufacturing.

Distinguishing securing elements is, first of all, connected with the necessity of creating suitable conditions for functioning of the basic components of the industrial potential. It is worth noting that development of industrial potential today is not possible without formation of the objects of social, market and innovative infrastructure.

According to the common aim, subjects of management realize administrative influences through the system of regulators. Elements under their influence change their state, acquiring more perfect forms. In case of finding out negative deviations, the role of regulators is reduced to their removal and regulation in order to achieve the desirable result. That is, there is a feed-back between regulators and the objects of management that involves taking into account the reaction of other mechanism constituents to changes in the system of regulation.

Interrelation between the management bodies is based on chain dependence and provides direct as well as indirect influence. The essence of interrelation is reduced to setting the only development vector both on national and on regional and local levels.

The expected results of the mechanism realization are increase of industrial production capacity, expansion of markets, removal of structural disproportions of the development and creation of progressive technological

structure of industrial potential in order to set up the innovative development model. Efficiency is the mechanism implementation quality criterion and is determined by the possibility of obtaining added gross output per unit of spent resources.

Taking into account the conceptual approach to the process of management based on a program-aimed method, we suggest specifying the following stages in the process of forming the mechanism of state administration of industrial potential development (Fig. 2).

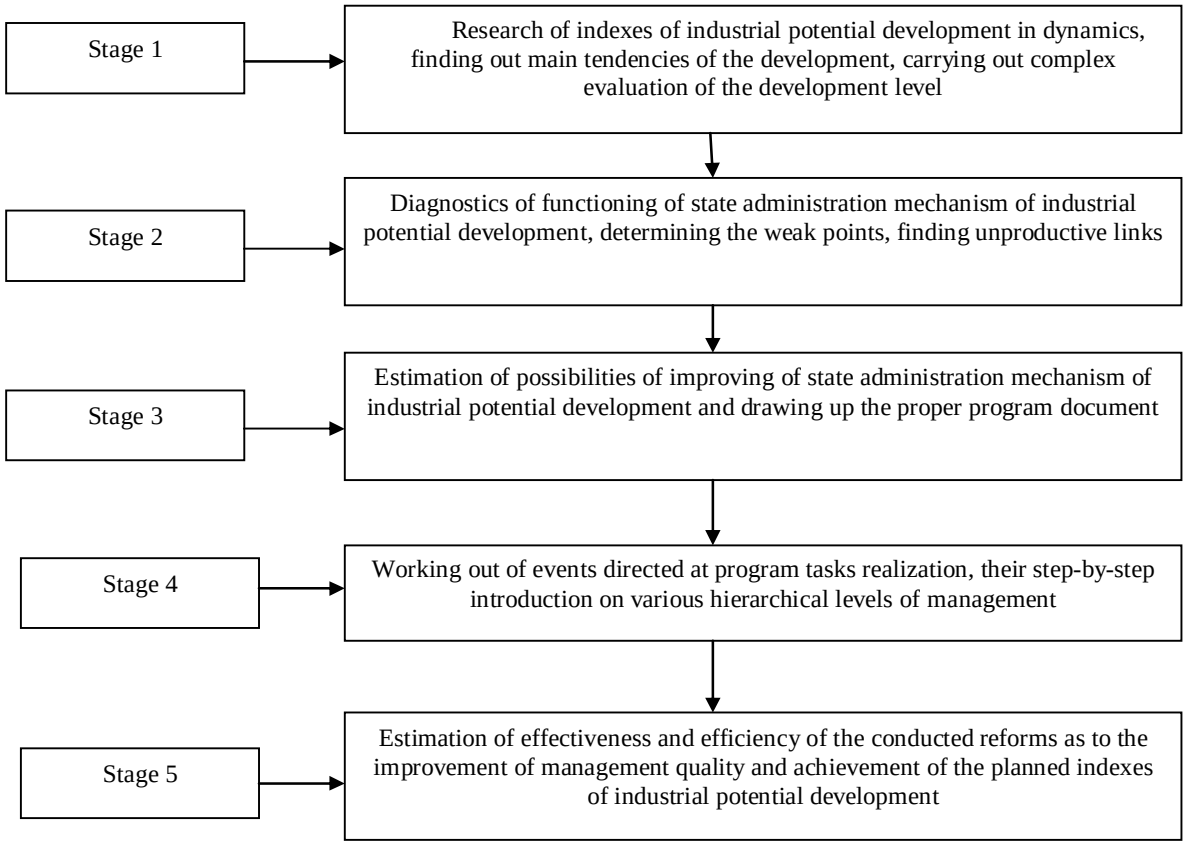

Fig. 2. Stages of forming the mechanism of state administration of industrial potential development
Improved by the author

Conclusions and perspectives for further research

Summing up the defined conceptual basis and paradigms done by scientists, the mechanism of state administration of industrial potential development should be referred to as a multi-component system of influence formed by subject-object approach through balanced combination of functional blocks united by a common purpose that provides the achievement of the desirable result. The distinguished blocks are interdependent, that means that occurrence of changes in one block unavoidably leads to changes in another one, it being a component of a single system. Keeping to the sequence of the defined stages of forming the state administration mechanism of industrial potential development will allow implementing the "resource-result" model that will promote the improvement of the management quality.

Improvement of the mechanism must be carried out towards setting up social responsibility of the authority for the consequences of the conducted reforms; establishing a control institution that would monitor implementation of the set tasks; introducing a quarterly accounting statement about the results; increasing informative awareness of population. These directions will be expanded in further scientific research.

References

1. *Fukuyma F. State – Bulding. Governance and Work Order the Twenty – First Century /*

F. Fukuyma. – [S.p.]: Lnd, Profile Books, 2004. – P. 20.

2. *Raêvnêva O. V. Upravlínnya rozvitkom pídpriêmstva: metodologíya, mekhanízmi, modelí: monografíya / O. V. Raêvnêva. – Kharkív : VD "ÍNZHEK", 2006. – 496 s.*
3. *Korotich O. B. Derzhavne upravlínnya regíonal'nim rozvitkom Ukraíni: monografíya. – Kharkív : Vidavnitstvo KharRÍDU NADU "Magíst", 2006. – 220 s.*
4. *Kuz'mín O. Ê. Osnovi menedzhmentu. / O. Ê Kuz'mín, O. G. Mel'nik. – K. : Akademvidav, 2007. – 464 s.*
5. *Balabanyuk ZH. M. Mekhanízm upravlínnya organízatsíêyu: sutníst' ponyattya ta propozitsíí shchodo otsínki yogo yefektivností / ZH. M. Balabanyuk // Vísnik Khmel'nits'kogo natsíonal'nogo uníversitetu. – 2011. – No. 5 (T.1). – S. 190–194.*
6. *Markína Í. A. Organízatsíyno-yekonomíchniy mekhanízm upravlínnya ínformatsíynim potentsíalom pídpriêmstva / Í. A. Markína, M. Í. S'omich, D. V. Dyachkov // Yekonomíchniy forum. – 2016. – No. 2. – S. 175–181.*
7. *Smachilo Í. Í. Printsipi formuvannya ta struktura mekhanízmu upravlínnya stalim rozvitkom pídpriêmstva / Í. Í. Smachilo // Yekonomíka rozvitku. – 2013. – No. 3. – S. 79–82.*
8. *Fedorchak O. Klasifíkatsíya mekhanízmív derzhavnogo upravlínnya / O. Fedorchak // Naukoviy vísnik "Demokratichne vryaduvannya". – 2008. – Vip. 1. – Rezhim dostupu do zhurnalu: http://www.lvivacademy.com/vidavnitstvo_1/visnyk8/index.html*
9. *Filipishin I. V. Mekhanizm upravleniya razvitiyem promyshlennogo predpriyatiya / I. V. Filipishin // Yekonomíka promislovostí. – 2011. – No. 4. – S. 220–227.*
10. *Kharchenko V. A. Mekhanízm formuvannya sistemi strategíchnogo upravlínnya rozvitkom promislovogo pídpriêmstva / V. A. Kharchenko // Yekonomíka promislovostí. – 2014. – No. 4 (68). – S. 97–104.*
11. *Chechin O. P. Mekhanizm formirovaniya strategii razvitiya promyshlennogo predpriyatiya / O. P. Chechin // Vestnik Samar skogo gos. tekhn. un-ta. Ser .: Ekon. nauki. – 2014. – No. 1 (11). – S. 46–49.*
12. *Kíndzers'kiy Yu. V. Promislovíst' Ukraíni: strategíya í polítika strukturno-tekhnologíchnoí modernízatsíí : monografíya / Yu. V. Kíndzers'kiy. – K .: DU "Ínstitut yekonomíki ta prognozuvannya" NAN Ukraíni, 2013. – 536 s.*
13. *Gabrel' M. M. Prostorova organízatsíya místobudívnikh sistem: monografíya / M. M. Gabrel'. – K. : Vidavnichiy dím A.S.S., 2004. – 400 s.*
14. *Porter M. E. Council of Competitiveness and Monitor Group, Clusters of Innovation Initiative: Regional Foundations of U. S. Competitiveness / M. E. Porter. – Washington DC, USA: Council of Competitiveness, 2000. – P. 149–164.*

Vol. 3, No. 2, 2016

UDC 338.5:336.225

A. Yasinska
PhD in Economics, Associate Professor
Lviv Polytechnic National University

LAW AND STATUTORY REGULATION OF TRANSFER PRICE FORMATION IN UKRAINE

Abstract. The paper outlines the methods of transfer price formation and their law and statutory regulation in Ukraine, considers peculiarities of methods and lists main advantages and disadvantages of practical application of transfer price formation methods in Ukraine on the basis of the amendments introduced into the legislation.

Key words: transfer price formation, estimation methods, controlled transactions, related persons.

Formulation of the problem. Extension of economic processes on the basis of international cooperation of Ukrainian enterprises leads to an ever bigger number of such agents of the global and national market as transnational corporations (TNS). The problem of research and application of transfer price formation, which is one of the most important management instruments in the structure of separate enterprises operating in different countries, deserves special attention in the development of such international relations. The main problem of transfer price formation is the policy of reasonable price setting, which has a direct influence on the amount of profit from the seller to the buyer. Therefore, the selection of transfer price formation method should meet certain selection criteria. The rules of transfer price formation in Ukraine are determined by the Law of Ukraine "On Amendments to the Tax Code of Ukraine on Transfer Price Formation" No. 609-VIII of 15.07.2015 [20] and the Tax Code of Ukraine [19]. However, taking into account a relatively recent time of legislative establishment of transfer price formation rules, a sustainable practice of their application has not been developed yet, and, therefore, there is no single methodology for determination of the method of transfer price formation in a controlled transaction.

Analysis of the recent research and publications. The foundations of transfer price formation in economic theory and practice were laid by the famous German researcher E. Schmalenbach in 1903 [1]. The method of transfer price formation is in the focus of attention of international researchers, such as A. Wagenhofer [2], J. Dearden [3], C. Drury [4], H. Kupper [5], D. Pfaff, U. Stefani [6], W. Schön, K. A. Konrad [7], M. Baro [8], R. Moller [9], J. Wrappe, M. Levey [10], Ch. Horngren [11] and others. Ukrainian authors writing on the issues of transfer price formation and focusing on comparison of its methods are: M. Romaniuk [12], T. Savchenko, M. Makarenko [13], O. Kotliarevskyi, V. Onishchenko [14], O. Tereshchenko [15], L. Napadovska [16], T. Karpova [17], V. Len [18] and others. Still, considering the great extent of research into transfer price formation and improvement of the regulatory system by the state, the issue of practical application remains important and topical for Ukrainian enterprises.

The purpose of the article is to highlight the peculiarities and practical application of the tranfer price formation methods at Ukrainian enterprises, their law and statutory regulation, and to determine main advantages and disadvantages of their application.

Presentation of basic material of the research. Intensification of international business in Ukrainian economy, as well as stabilization of the national economy by means of state regulation, is manifested in the necessity to develop and improve the mechanism of transfer price formation. To avoid capital flow from the country and to ensure proper tax payment, as well as improve the efficiency of the tax system and control over transfer prices, Ukraine adopted the Law of Ukraine "On Transfer Price Formation" and amended the Tax Code of Ukraine. These legislative acts on transfer price formation are based on the international experience of practical application of transfer price formation method, the main standard of control being the "long arm principle". This principle is based on the state

control through its tax authorities over transfer pricing by adjusting tax liabilities of the taxpayers. In Ukrainian tax legislation, the "long arm principle" is formalized in article 39 of the Tax Code of Ukraine, which stipulates that the tax control over transfer pricing envisages adjustment of tax liability of a tax payer calculated on condition of correspondence of commercial and financial conditions of a controlled transaction to commercial and financial conditions that existed at the moment of conducting comparative transactions stipulated by this article, the parties to which are unrelated persons. Article 39 "Transfer price formation" of the Tax Code of Ukraine [19] determines the rules of setting regular prices of goods (works, services) in controlled transactions, the total amount of which equals or exceeds 50 million UAH (less VAT) for a respective calendar year. To determine the price, as well as to control transfer price formation of controlled transactions, the following methods are stipulated: comparative uncontrollable price (comparable sales); resale prices; "costs plus"; profit distribution; net profit. These methods are described in Table 1.

Table 1

Characteristics of the transfer price formation methods according to the TCU [19]

Methods	Characteristics
Comparative uncontrollable price (comparable sales)	is a comparison of the price applied during a controlled transaction with the price in compared uncontrollable transaction(s), which were actually performed by the taxpayer (other persons), or on the basis of the information about prices applied during the analyzed period, particularly the information about the prices on the day closest to the date of the controlled transactions (article 39 par. 39.3.3.1, par. 39.3.3.3)
Resale prices	is a comparison of the gross profit margin from resale of goods (works, services) purchased in a controlled transaction with a gross profit margin from resale of goods (works, services) received from comparative uncontrollable transactions (article 39 par. 39.3.4.1)
Cost plus	is a comparison of the gross margin of the self cost of selling goods (works, services) in a controlled transaction with a similar indicator of cost effectiveness in comparative uncontrollable transactions (article 39 par. 39.3.5.1)
Profit distribution	is allocation of a part of the general profit (or loss) received as a result of controlled transaction(s) to each person participating in such controlled transaction(s); this part of the general profit (or loss) is equal to the one an unrelated person would receive as a result of a comparative uncontrollable transaction(s) (article 39 cc. 39.3.7.1)
Net profit	is a comparison of the respective financial indicator of cost effectiveness in a controlled transaction (net profit on the respective basis (costs, sales, assets) or the indicator of operating costs effectiveness) with the respective cost effectiveness indicator in comparative uncontrollable translation(s) (article 39 par. 39.3.6.1)

Ukrainian tax legislation (the Tax Code of Ukraine) and rules of the Organization for Economic Cooperation and Development (OECD) determine the rules of application of the transfer price formation methods. In selection of a certain method of setting the transfer price in a controlled transaction, the main criterion is the feasibility of adjustment, which is done to ensure comparability of controlled transactions. It is allowed to use two and more methods which a company may deem acceptable and grounded at its discretion. However, if there is a possibility to apply the method of comparative uncontrollable price (comparable sales), it is given preference over the others. Practical application of this method is complicated due to the lack of statistical information for determination of prices during the controlled transaction, which is necessary to compare market prices of similar goods (works, services) in comparative transactions. The information on market prices used is taken from the generally available official sources, like the State Information and Analytics Center for Monitoring International Commodity Markets, the Agricultural Stock Exchange, official publication of the State Fiscal Service of Ukraine and others over a certain period of time. However, in fact, market prices may change every day, therefore such data become obsolete and make it impossible to compare prices in controlled transactions and comparative

transactions, as it is required by the Tax Code of Ukraine. In practice, conditions of transaction performance include also the scope of sales, the currency of payment etc., and these conditions should be identical, i.e. to be such that do not make a significant influence on financial result. Fulfillment of all abovementioned conditions to determine the market price in controlled transactions using the comparative uncontrollable price method is complicated and, usually, one of the mentioned conditions is violated.

The method most widely used to analyze the cost efficiency of intermediaries with limited risk and to determine the price in regard to transactions in which goods are purchased from a related person and then resold to unrelated persons without significant modification of the goods is called the resale method. However, taking into account the conditions of application of this method, it is possible to state that there are certain obstacles to its application, particularly, the difference of the gross profit margin indicators of the selected companies and gross profit margin of the taxpayer, which is caused by differences in accounting policy of the companies. Some costs, such as transportation, warranty maintenance, insurance and others can be included in the current period costs or into the self-costs of goods. The discounts given can also be considered as either decrease of profit or as a part of sales costs. Such discrepancies can significantly influence the gross profit margin of a company. Meanwhile, specialized commercial databases do not contain any information on accounting policies of the companies, which could allow for making the appropriate adjustments and ensuring comparability of the gross profit margin indicators of the selected companies with the similar indicator of the taxpayer. Considering the abovementioned, application of this method using the gross profit margin indicators of comparable companies is not possible. It is possible to claim in this case that the accounting policy in controlled and uncontrolled transactions is the same and does not influence the gross profit margin of the transaction.

Determination of the price using the cost plus method is possible if certain conditions are fulfilled, in particular: performance of works, provision of services between two related persons; sale of goods, raw materials or semi-finished products under the agreements between related persons; sale of goods (works, services) under long-term agreements between related persons. This method focuses on assessment of the gross profit margin and thus its application has the same limitations as the resale price method (adjustment of costs does not seem possible). Correspondently, the cost plus method cannot be applied in case of absence of internal transactions. In practice, this method is often applied to transactions of selling goods by the producer to the distributor in case when the producer sells the comparable products to the address of the related distributor and independent distributing companies under the same conditions. Thus, the cost plus method may be used for analysis of prices in controlled transactions in case there are available internal comparable transactions.

Net profit method is considered to be universal and most applied in comparison to other methods. The idea of the method is to compare the indicators of net margin, which is achieved by a taxpayer in a controlled transaction, with market range of values of net margin of independent companies achieved by them in comparable transactions. The universality of this method lies in the fact that the operation profit (loss) indicator usually reflects financial results of operational activity to the fullest extent. In addition, this indicator considers as much as possible the possible differences of accounting policies of the examined company and the comparable companies. The net profit method is used when there are no or too little information on the basis of which it would be possible to make grounded conclusions concerning the sufficient extent of compatibility of commercial and financial conditions of the controlled and comparable transactions using other methods. The main goal of a taxpayer when using this method is to find independent companies with comparable functional profile involved into similar activity on comparable market. The TCU [19] envisages a number of cost-effectiveness indicators, which should be used proceeding from the peculiarities of the company and the character of the transaction itself. Therefore, it is possible to conclude that the net profit method is most suitable for analysis of a controlled transaction in regard to its fulfillment of the “long arm principle”.

Profit distribution method is the least applied method in global and Ukrainian practice of analyzing transfer price formation. This method is used by the taxpayers when the controlled transaction is so much interconnected with other

transactions performed by the same parties that it is not possible to determine its contribution to the cumulative profitability of the parties. The method of profit distribution is also applied when both parties own intangible assets that have a significant influence on price formation. A sample situation when the application of this method would be appropriate could be joint production of any high-tech product by several companies. Usually, the companies use this method when none of the abovementioned methods is applicable.

Having studied the issue of evaluating the transfer price formation methods it is possible to claim that in many cases application of the much preferred method of transfer price formation, that of comparative uncontrollable price, is impossible due to the lack of necessary information, including delivery conditions, specifications, exact delivery dates and other characteristics in generally available sources. The conditions of using the resale price method and cost plus method in the part of reflection of costs in the accounting policy of the compared companies are under researched. Due to such limitations of the methods as lack of key features of the goods in generally available sources, imperfection of the financial information databases, differences in accounting policies of the compared companies, and others, the taxpayers may use the wrong method and, consequently, pay their taxes incorrectly, which is a great risk both for an enterprise registered in Ukraine, and for the group as a whole.

Thus, research into the methods of transfer price formation, determination of their advantages and disadvantages, and ways of their elimination is quite topical. Table 2 presents the main advantages and disadvantages of each of the methods of transfer price formation.

Table 2

Advantages and disadvantages of the transfer price formation methods

Methods	Advantages	Disadvantages
Comparative uncontrollable price (comparable sales)	is preferred over other methods	lack of statistical information for the method to be used; is used for analysis of internal and external uncontrollable price; conditions of transactions should be comparable and not make significant impact on financial result; impossible to apply for determination of the market price of a controlled transaction
Resale prices	can be used for analysis of prices in a controlled transaction provided there are available internal comparable transactions	differences in indicators of gross margin of companies and taxpayers; the existing databases do not fully reflect the information on gross margin indicators, thus rendering their adjustment impossible;
Cost plus	allows the selling enterprise to receive profit from transfer of its goods (services)	cannot be applied if there are no internal comparable transactions; the existing databases do not fully reflect the information on gross margin indicators, thus rendering their adjustment impossible
Profit distribution	joint production of any high-tech products by several companies; both parties own intangible assets, whose cost influences the price	the least applied of all methods of transfer price formation; controlled transaction should be interconnected with other transactions performed by both parties; it is complicated to determine the contribution of every parties into the total return of both parties
Net profit	universality of application – the indicator of operational profit (loss) fully reflects the financial result of operational activity; is most suitable for analysis of compliance of the controlled transaction with the “long arm principle”	the necessity to search for independent companies with comparable functional profile, which are engaged into similar activity on a comparable market

It is worth mentioning that consideration of advantages and disadvantages of each transfer price formation method will allow a company that belongs to a transnational group of companies to select the most reasonable method for analysis of prices and profitability indicators in controlled transactions. This will allow for avoidance of material and reputational risks for the company and the whole group of companies to which it belongs. The analysis of transfer price formation methods and peculiarities of their application revealed the necessity to improve these methods. Taking into consideration Ukrainian realities, the prioritized method of transfer price formation – the method of comparative uncontrollable price – requires most changes and specification in terms of possibility to use generally available sources of information for the purposes of transfer price formation.

Conclusions and prospects for further research. Application of transfer price formation methods at Ukrainian enterprises is considered in the following cases: for forming the methodology of setting the transfer price in order to neutralize conflicts of interests and improve internal economic financial relations; for manipulating transfer prices in order to decrease the tax burden and withdraw the capital from Ukraine. However, it is worth mentioning that the issues of choosing the acceptable methods of transfer price formation, grounding certain conditions of price formation, as well as avoiding conditions for double taxation and uncertainties, which could discourage direct foreign investments and hinder the development of foreign trade, remain relevant and require further research.

References

1. *Schmalenbach E. Uber Verrechnungspreise / E. Schmalenbach // Zeitschrififurhandelsswissenschaftliche Forschung. – 1909. Vol. 3. – No. 3. – S. 165–185.*
2. *Ewert R. Interne Unternehmensrechnung / R. Ewert, A. Wagenhofer. 6 Auft. – Berlin: Springer, 2005. – 760 s.*
3. *Anthony R. Management Control Systems / R. Anthony, J. Dearden. – Irwin, IL, 1984.*
4. *Drury C. Management accounting for business: a textbook / C. Drury ; transl. from English. – Moscow: YUNITI-DANA, 2003. – 655 p.*
5. *Kupper H. SystemederKosten- und Erlosrechnung / H. Kupper, M. Schweitzer. – 8, uberard. Auft. – Munchen : Vahlen, 2003.*
6. *Pfaff D. Verrechnungspreiseiseinder Unternehmenspraxis / D. Pfaff, U. Stefani // \ Controlling. – 2006. – No. 10. – S. 517–524.*
7. *Wolfgang Schön, Kai A. Konrad. Fundamentals of International Transfer Pricing in Law and Economics. // Wolfgang Schön, Kai A. Konrad. – 2012. – 387 p.*
8. *Marcelo Baro. International Business: a case of abusive transfer pricing // Marcelo Baro. – 2013. – 258 p.*
9. *Raymonds Moller P. Transfer pricing rules and competing governments. Oxford econ. papers. N. S., Oxford, 2002. – Vol. 54. – No. 2. P. 230.*
10. *J. D. Wrappe, Steven C. Wrappe, J. D., Marc M. Levey. Transfer Pricing: Rules, Compliance and Controversy (Fourth Edition). // J. D. Wrappe, Steven C. Wrappe, J. D., Marc M. Levey – 2013. – 415 p.*
11. *Horngren Ch. Management Accounting. 10th edition / transl. from English – Saint-Petersburg: Piter, 2005. – 1008 p.*
12. *Romaniuk M. V. Transfer price formation in the tax system of Ukraine // Global Tendencies and Prospects of Development of the Financial System of Ukraine. – 2013. – P. 15–17.*
13. *Makarenko M. I. System of Transfer Price Formation if Commercial Banks [monograph] // M. I. Makarenko, T. H. Savchenko. – Sumy : SHEI "UAB NBU", 2008. – 238 p.*
14. *Kotliarevskyi O. V., Onishchenko V. V. Selection of the optimum method of transfer price formation in a commercial bank in Ukraine // All-Ukrainian research and practice conference "innovative potential of the global science – 21st century". [Electronic resource]. – Mode of access: http://nauka.zinet.info/9/kotlyarevsky.php.*
15. *Tereshchenko O. I. Transfer price formation as an instrument of controlling // Ukrainian Finance. – 2007. – No. 5. – P. 127–136.*
16. *. Napadovska L. V. Management Accounting: manual for university students. – Kyiv: Knyha, 2004. – 544 p.*
17. *Karpova T. P. Management Accounting: manual for university students. – Moscow: Audit, UNITY, 1998. – 350 p.*
18. *Len V. S. Management Accounting: manual for university students. – Kyiv : Znannia-Pres, 2003. – 287 p.*
19. *Tax Code of Ukraine of 02.12.2010 No. 2755-VI [Electronic resource]: – Mode of access: // zakon.rada.gov.ua/laws/show/2755-17.*
20. *The Law of Ukraine of 15.07.2015 No. 609-VIII "On Amendment of the Tax Code of Ukraine re Transfer Price Formation". [Electronic resource] // The Verkhovna Rada of Ukraine: [web site]. – Mode of access: http://zakon5.rada.gov.ua/laws/show/609-19.*

Vol. 3, No. 2, 2016

UDC 338.439.

Ye. Krykavskyy
Doctor of Economic Sciences, Professor
O. Kostyuk
PhD in Economics, Associate Professor
Lviv Polytechnic National University

THE MACRO-LOGISTICS CONCEPT ON THE NATURAL GAS MARKET IN UKRAINE: IMPLEMENTATION ATTEMPT

Abstract. The problem of introducing market relations into the natural gas market in Ukraine is modified. Studies of natural gas market of Ukraine as a macro-logistics complex system based on the implementation of the logistics concept are offered. The necessity of optimization of reserving natural gas in underground gas storages (UGS). The directions of modernizing the system of pricing for services on the natural gas market in Ukraine are explained, through the transformation of conditional permanent costs, primarily costs of creation and maintenance of technological gas reserves into variable costs of the gas market subjects.

Keywords*:* The macro-logistics concept, natural gas market in Ukraine, underground gas storages (UGS), macro-logistics complex system.

Introduction

The world market for natural gas is rather monopolized by the countries-producers, and for reasons of national security for European countries it regularly updates the issue of diversifying sources of supply. It is also typical for Ukraine, which in addition to large consuming volume is still a monopolist in transition of Russian gas. The long history of relations between Russia and Ukraine on natural gas market is more concerned with political than economic issues. On the one hand, natural gas is a critical resource for Ukraine's national security because of the extremely low substitution on the retail market (in the housing sector), on the other hand, the general effect on its seasonal demand is done by climatic/weather factors that lower the reliability of medium term demand forecast. Both of these reasons cause the accumulation of gas reserves in the summer period to use it if necessary in the winter period when the country's need exceeds the current gas debit.

Nature has provided Ukraine with such a benefit as large capacity underground gas storages (UGS), which use as an intermediate storage of gas requires its purchases from gas suppliers (internal and external), injection into these storages, storage during a particular period and, if necessary, deflation into the transport network for the purposes of consumption. It is important to ensure that gas reserves in underground gas storage facilities provide a dynamic current balance of gas in a structured and time dimension in space, serve as safety stock, cycle, anticipative, speculative, etc. Meanwhile, power of underground gas storage facilities can be provided to outsourcing as a concentrated demand of Western and Central Europe can technically be satisfied from these storages. However, the key issue is what volumes of gas have to be accumulated in the summer (season) and who is supposed to do that?

Analysis of recent studies

Since the beginning of the independence of Ukraine (1991) natural gas market has experienced a radical change from the absence of any market economy on the gas market (which therefore did not include the gas market), till its real establishment and operation, performing a variety of macro-functional monopoly (political) influence on the state, wild enrichment and corruption of senior civil officers. Only after the Revolution of Dignity, in terms of Russian gas blockade just within 3 years Ukraine managed to "jump off of Russian gas needle" [2; 6], simultaneously reducing the consumption of gas and diversifying the structure of external suppliers**.**

The dynamics of consumption and structure of imports indicates significant positive changes on the gas market in Ukraine. There are at least three changes:

– diversification of external sources of gas supply (although the problem of transparency and competition in choosing suppliers still exists);

– gradual transition to market prices;

– stable tendency to reduce gas consumption.

It remains important to get the last change: acquiring high profitability by this market. And there is the standard dilemma here: either to increase revenues or to reduce costs. Obviously, their combination is possible.

Table 1

Imports of gas to Ukraine (billion cubic meters)

Country / Years	Total	Including				Note	
		Russian Federation	Slovak republic	Hungary	Poland	Own extraction	Consuming
2013	28,0	25,8	0	1,2	0,9	21,4	50,4
2014	19,5	14,5	3,6	0,6	0,9	20,5	42,6
2015	16,4	6,1	9,7	0,5	0,1	19,9	33,7
2016	11,1	0	9,1	1	1	20,2	30,3

Source [2; 6]

Following the basic hypothesis that in terms of growth and a good rate of economic development the priority is profit, and the crisis situation should emphasize the expenditures, so we try to justify specific provisions to reduce costs, based on the macro-logistics concept. These studies are caused by annual (seasonal) media attention to spreading fear and panic regarding possible exhaustion of gas from underground gas storage facilities before the end of the heating season because of insufficient amounts of gas reserves in underground storage facilities [1], or its quick use in colder periods [3]. Recently there has appeared an analytical article explaining the enhanced media attention to the issue of gas reserves [17], which stated that 420 news reports were devoted to this issue during the period of 1–17 January 2017. Anxiety is added by uncoordinated assessment of the Government and 'Naftogaz' of Ukraine on the necessary volumes of gas storage in underground gas storage at the beginning of the heating season, which differed by 3 billion cubic meters [3]. Generally there are many pessimistic forecasts about the safety factor of Ukrainian gas transportation system (GTS) [4], though 'Naftogaz' of Ukraine assured good assessment of the situation even under crisis scenarios [4]. Note that this does not undertake expenditure, although crisis management needs to regard them, because the problem of stocks has always two sides: one – the effects of stocks depletion, second – the consequences of keeping stocks.

There is just one example we would like to demonstrate here. Imagine that as a result of the heating season the excess stock amounted 1 billion cubic meters of gas in the UGS. With a purchase price at 200 USD per 1,000 cubic meters it is 200 mln USD of 'frozen' capital. At a rate of return on equity of 10% a semi-annual maintenance of this reserve means 10 mln USD of spending its 'frozen' amount. We can only add the cost of transport from the supplier, the cost of pumping, storage and selection, and this amount will be doubled, which is half a billion in UAH. And what if extra gas reserves amounted 2 billion cubic meters? This is equal to a billion UAH of foregone profits. And it is questionable how to evaluate the fact that at the beginning of spring Ukraine has the largest reserves of natural gas among all European countries.

According to the logistics chain/ network concept of gas supply the supplier has traditional phase of supply: supply – distribution – consumption, which occurs during transportation, consolidation (association) in the GTS, storage in stock reserves (UGS), deconsolidation (distribution) and consumption. Some processes involve customs barriers, others – engineered barriers (injection, selection). And everywhere there are generated costs, the level of which depends on the physical volumes and unit costs.

So, as any logistic flow, in terms of the economy two parameters of its effectiveness are extremely important for the gas flow:

– The level of gas reserves;

– Turnover (rotation) of gas reserves.

In other words, reducing the average stock in the GTS, we, on the one hand, reduce the cost of its creation, maintenance (pumping, storage, selection), and manipulative move (UGS as virtual entire complex), on the other hand – make its turnover faster, reducing inventory turnover cycle, and thus the cycle of customer service.

The objective of the article is to introduce the directions of the macro-logistics concept into the natural gas market in Ukraine.

Key problem analysis

Based on logistics paradigms it should be categorically accepted that the natural gas market in Ukraine is an especially difficult macro-logistics system, which main research subjects are:

– physical movement of natural gas (transporting process);

– retention of gas in storage (stock);

– logistics costs (transportation costs, inventory, administrative and management costs);

– the information flow accompanying the gas flow, another tangent relevant information;

– infrastructure of logistics processes.

Obviously, each of these subjects may have a particular potential to improve efficiency of the natural gas market, in particular the cost, quality, customer service, flexibility, innovation and environmental benefits that also may require either unimportant or significant efforts (capital investment, time, reengineering, change management, etc.). The study of the defined systems should keep to the principles of logistics concept as thinking in categories of value/utility, system thinking categories, the categories of full/total expenditures, categories of efficiency and customer service categories.

Regarding the first set (transport processes), no significant reservations with regard to satisfactory technical conditions of GTS, necessary modernization of equipment, high labor discipline and good state of GTS engineering management. This equally applies to the information flow and infrastructure of logistics processes. Although, there is a significant opportunity to optimize the processes of production and transportation, taking into account the level of technological gas consumption in these processes, which is more than 10 % of consumption (in 2013 – 4.3 billion cubic meters in 2014 – 3.7 billion cubic meters) [16]. However, there are great restrictions about public policy management (creation, storage replenishment, maintenance and use) of reserves in UGS. Obviously, in the corresponding structures of 'Naftogaz' Ukraine there are documents and standard procedures for making decisions regarding inventory levels for different scenarios, but the fact of the recent reduction of insurance reserves for suppliers from 50 % to 10 % [7] causes doubts about the economic justification for such a decision, and shows that it is rather a political decision, though with positive content.

When evaluating a particular level of gas reserves, we always aim to get answers regarding its adequacy in terms of occurrence of certain deviations of actual demand from projected demand, both expected and unexpected, especially in crisis situations. However, we must also realize that excess inventory and insufficient supplies cause additional costs: with an excess reserves - the additional costs of creating and maintaining, with insufficient stocks – costs of stocks exhaustion (cost of lost sales, lost profits, cost of gas substitution, obvious and not obvious costs of social, political type, associated costs, etc.).

Thus, we have a classic situation of trade off: holding low stocks we get the risk of additional costs and the depletion of stocks, and the opposite: high stocks lead to the additional costs of creating and storing, but less risk of exhaustion. And the "arbitrator" in this situation serves a particular stock level in the system. Graphically this can be represented as follows (Fig. 1).

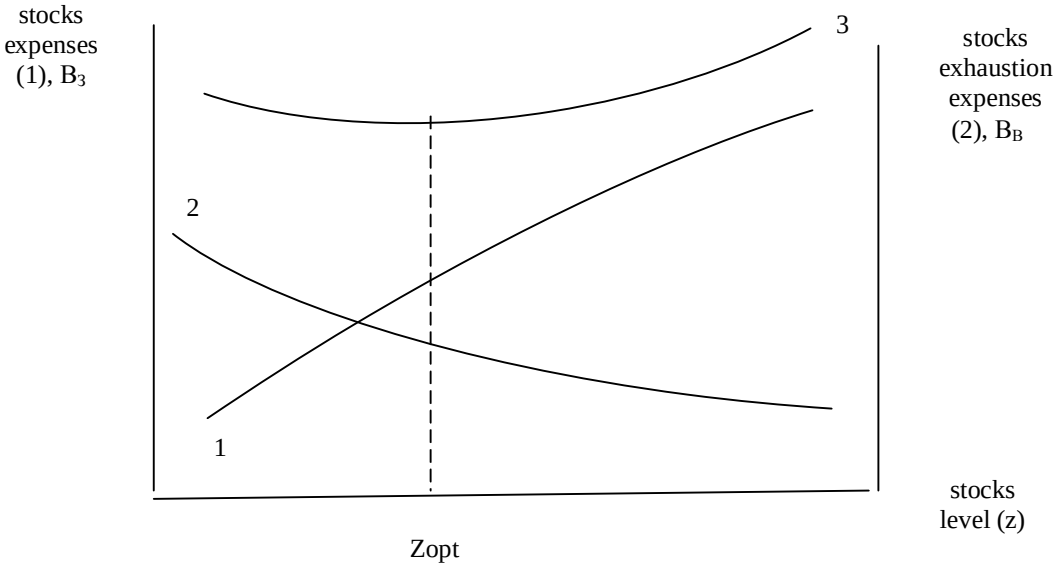

Fig. 1. The ratio of stocks expenditure (1) stocks exhaustion costs (2) and their sum (3)

Figure 1 shows a hypothetical curve (3) as the sum of stocks costs (costs of creation and storage of stocks) and the likely costs of stocks exhaustion exemplifies the existence of "arbitration" of stocks level (Zopt):

$$Zopt = f(), \quad (1)$$

its credibility is entirely determined by the reliability of forecasts of deviations, factors, estimates, etc. At the same time, it can be assumed that this level should not necessarily be universal, the same for all supply gas chains on the natural gas market in Ukraine. Obviously, the principle of unification of stock maintenance is good in terms of control, monitoring, provision of similar barriers of entry/exit, but not always economically rational as both suppliers and consumers / customers can vary significantly by conditions and prerequisites for doing business, avoiding crisis situations and others.

Therefore, the authors offer to implement a differentiated approach to setting standards of mandatory reserves, but using the principles of the typical basis of structuring gas reserves by the functions they performed. Usually, the logistics concept transforms the reasons of accumulation of certain stocks to respective functions. Traditionally the following reasons of stocks accumulation are distinguished:

- Savings while purchasing;
- Savings in transportation;
- The need for a guarantee (insurance) stock;
- The need to create seasonal stock;
- The need to create promotional reserve;
- The expediency of creating a speculative stock.

According to these reasons, the total amount of stock can be classified / structured by functions, as shown in [12, p. 247] (Table 2).

Table 2

Functional classification of everyday consumer goods' stocks

No.	Functional purpose	Type of stock
1	Compensating the lack of harmonization (synchronization) of intensity levels of demand in related supply chain	Current (cyclic)
2	Meeting the unexpected increase in demand, intensity, and also because of delays in the implementation of orders and incomplete orders	Guarantee (margin of safety)
3	The same, but because of the possible strikes, unfavorable political conditions, deviations from the stationary conditions, etc.	Insurance (security)
4	Holding stock to meet foreseen demand, particularly its growth, and to increase the space-time product availability to the customer	Anticipative (predictive)
5	Leveling the time difference between the amount of the purchase, transport and mode of production and supply in the chain of distribution, its variations, including seasonal, which makes it possible to optimize the use of production capacity in the supply chain	Leveling
6	Ensuring timely supply in case of significant distances between the supplier and the recipient	Stock on the way
7	Loss of functionality and lack of benefits of its ownership in operation stationary conditions	Dead

Source: [12, p. 247].

Taking presented in Table 2 functional separation of stocks as a basis, an algorithm of actions for calculating stock levels is proposed:

1. Differentiated identification of the functions of gas reserves. Obviously, for different customers (communal services, manufacturing, and energy sector) the relevance of certain features may vary.
2. Calculation of norms for creation and storage of stocks by their functionality
3. The construction of these standards into a unified norm of gas reserves.

The proposed algorithm of setting norms for stock level will ensure its differentiated use more reasonable to interpret the relationship between the subjects of natural gas market in Ukraine, taking into account existing specificity. This somehow optimizes cost of suppliers in the creation and storage of safety stock and the state which responsible for the risks in the public service sector.

Another, equally important derivative aspect of public policy of creation and storage of natural gas is the turnover of reserves during the year, assuming

that the turnover of property is one of the three most important factors affecting the profitability of capital (according to Dupont model, the other two are – return on sales and financial leverage). Simple calculations 'roughly' demonstrate impressive results on the turnover of stocks:

$$O = \frac{P_{C,}}{C_3}, \quad (2)$$

where P_C – annual consumption, C_3 – average stock.

With annual consumption of 30 billion cubic meters of gas and average gas reserves of 10 billion in UGS the gross turnover of stocks will be only three times a year. If the minimum technological reserve in the PSC is considered about 5 billion cubic meters [4.7 billion cubic meters according to [13], which cannot "turn over", the net turnover of gas reserves will amount 6 times a year, thus the average turnover duration is 2 months. Obviously, for such goods of rapid rotation the turnover duration is too long. Given the existing system of payments for the consumed gas its turnover would have to increase by 1.5–2 times, making 9–12 times a year.

To achieve this there should be done the following:

a) to reduce the power used by UGS by at least one-third, bringing to 20 billion cubic meters from the current 31 billion cubic meters, which will help to reduce the technology stock to 3.2 billion cubic meters;

b) to reduce the average level of gas reserves in underground storage facilities by 1.5–2 billion cubic meters by optimizing the supply of gas at the beginning of the heating season.

These measures will lead to an increase in gross turnover to 4 times a year, and taking into account the technological stock the turnover of the net may reach 8 times a year. Obviously, we must take into account the pricing environment during the heating season and summer season, because there is always an alternative: to buy during a season of low prices and keep in reserve for the funds or to buy in the mode of actual needs eliminating the storage phase (pumping, screening) of gas in underground gas storage facilities, as for example in a situation similar to the current (early March 2017), when the selection of 20 million cubic meters could be replaced by supplies from Slovak Republic, Poland and Hungary.

Obviously, we must take into account the risks and the outflow of gas from the core zone of underground gas storage facilities into the peripheral stagnant gas deposits zones [15], which increases the amount of passive gas, risks of rejection of project performance of UGS from operational, risks of violations of their cyclical exploitation, etc.

Another important aspect of the natural gas market in Ukraine is pricing, including the costs relating to storage (pumping, screening) of gas [7, 10]. First, the establishment of normative profitability for planned spending does not stimulate to minimize the cost of the gas reserves maintenance. Second, the attribution and distribution of various cost elements of the phases of retention of gas in underground gas storage (pumping, storage, selection) is easy to account for, control and calculation (100 %, 50 %, 25 %), but does not have a sufficient objective reason that discourages optimizing the cost structure. Thirdly, the existence of additional barriers for external gas suppliers to enter (input tariff for gas transit system [7]), compared to the internal. Fourth, the one that needs urgent attention is the issue of costs associated with the creation and maintenance of the technological stock in UGS, which is estimated as 4.8 billion cubic meters, and filled in GTS. Should not the gas market participants bear joint responsibility for the associated with this 'dead' stock (dead, because you can not sell it) costs? All the described factors do not facilitate healthy competition in the natural gas market in Ukraine both among suppliers and/or distributors, and among the parts of gas supply chain.

Conclusions

1. It should be accepted with no restrictions that the natural gas market in Ukraine is a complicated macro-logistics system, which, in addition to its important strategic function of forming national security, has considerable economic potential, able to significantly influence the GDP, both directly and in terms of synergies. It is important to understand public policy to improve its efficiency and competitiveness.

2. A key set of research and policy for the natural gas market in Ukraine is a requirement for the establishment and maintenance of natural gas reserves: how much, who and when. Implementing typical logistic approaches for choosing external suppliers, coordination of their purchase volume and timing of purchasing and stockpiling can significantly reduce the likelihood of corruption component in the process of gas reverse. Optimization of these requirements can significantly affect the profitability growth of the natural gas market in Ukraine (not only

by consumers) and increase its attractiveness to foreign investors.

3. Improvement of the natural gas market in Ukraine requires the introduction of competitive market principles into a pricing system for services provided by the subjects of this market, above all, the GTS, underground gas storage facilities, distribution network. This will lead to a gradual transition to the accepted and fair prices for goods and services.

4. Even for such a very complex macro-logistics system as natural gas market the dilemma "security contra economy" does not lose its relevance.

References

1. *Ukrayna voshla v fevral s zapasamy v PKhH 9,885 mlrd kub. m haza / Novyny na UKR.NET// http://www.ukr.net/#homeDetails/jekonomika/52414741/*
2. *Ziskochyty z rosiiskoi hazovoi holky: yak zminiuvalos spozhyvannia blakytnoho palyva v Ukraini - Telekanal novyn24//http://24tv.ua/ziskochiti_z_rosiyskoyi_gazovoyi_golki_yak_zminyuvalos_spozhivannya_blakitnogo _paliva_v_ukrayini_n767507.*
3. *Uvelychennoe yz-za morozov potreblenye haza rezko sokrashchaet zapasы v ukraynskykh khranylyshchakh// https://strana.ua/news/49128-uvelichennoe-iz-za-morozov-potreblenie-gazarezko sokrashaet-zapasy-v-ukrainskih-hranilishah.html.*
4. *Novosty эkonomyky – V "Naftohaze" proschytaly kryzysnыe stsenaryy sokrashchenyia hazovoho ymporta v otopytelnыi sezon – Stranytsa novosty - m.zn.ua//http://m.zn.ua/ECONOMICS/v-naftogaze-proschitali-krizisnye-scenarii-sokrascheniyagazovogo-importa-v-otopitelnyy-sezon-235894_.html*
5. *Pro zatverdzhennia Polozhennia pro Natsionalnu komisiiu, shcho zdi... | vid 10.09.2014 #715/2014// http://zakon3.rada.gov.ua/laws/show/715/2014*
6. *Zvidky Ukraina importuie haz: tsikava infohrafika - Telekanal novyn 24// http://24tv.ua/zvidki_ukrayina_importuye_gaz_tsikava_infografika_n771729.*
7. *Stvorennia rynku hazu: imitatsiia chy realnist? http://m.dt.ua/energy_market/stvorennya-rinku-gazu-imitaciya-chi-realnist-_.html.*
8. *Pro rynok pryrodnoho hazu | vid 09.04.2015 # 329-VIII http://zakon0.rada.gov.ua/laws/show/329-19/page.*
9. *Rada ukhvalyla zakon pro stvorennia stratehichnoho zapasu hazu https://bdzhola.com/news/rada-uhvalila-zakon-pro-stvorennja-strategichnogo-zapasu-gazu*
10. *Novyny - Opryliudniuietsia proekt postanovy, shcho maie oznaky rehuliatornoho akta, – zminy do Kodeksu hazoskhovyshch, Typovoho dohovoru zberihannia (zakachuvannia, vidboru) pryrodnoho hazu i Metodyky vyznachennia ta rozrakhunku taryfiv na posluhy zberihannia (zakachuvannia, vidboru) pryrodnoho hazu shchodo hazoskhovyshch, do yakykh zastosovuietsia rezhym rehulovanoho dostupu http://www.nerc.gov.ua/?news=5747.%20.*
11. *Kabmin zmenshyv strakhovyi zapas hazu | Ekonomichna pravda https://www.epravda.com.ua/news/2016/11/16/611351/.*
12. *Krykavskyi Ye.V. Lohistyka dlia ekonomistiv / Krykavskyi Ye.V.// pidruchnyk - 2-e vydannia – Lviv: Vydavnytstvo Lvivskoi politekhniky, 2014. – 476 s. (Seriia "Svit marketynhu i lohistyky", vyp.9).*
13. *Naftohaz: Zakinchyly zymu iz zapasamy hazu, vyshchymy za prohnozy - 02.03.2017 21:09 – Novyny Ukrinform https://www.ukrinform.ua/rubric-economics/2186299-naftogaz-zakincili-zimu-iz-zapasami-gazu-visimi-za-prognozi.html*
14. *Zapasy hazu v skhovyshchakh Ukrainy znyzylysia do 10 miliardiv kubiv – "Ukrtranshaz" http://www.slovoidilo.ua/2017/01/30/novyna/ekonomika/zapasy-hazu-v-sxovyshhax-ukrayiny-znyzylysya-do-10-milyardiv-kubiv-ukrtranshaz*
15. *Otsiniuvannia zapasiv hazu v pidzemnykh skhovyshchakh / O. T. Chernova // Rozrobka rodovyshch: Zb. nauk. pr. – 2015. – T. 9. – S. 267–274. – Bibliohr.: 7 nazv. – ukr.*
16. *Spozhyvannia hazu v Ukraini skorotylosia na 16%, chastka importu vpala nyzhche 50% - Ekonomika - ZAXID.NET http://zaxid.net/news/showNews.do?spozhivannya_gazu_v_ukrayini_skorotilosya_na_16_chastka_importu_vpala_nizhche_50&objectId=1336974*
17. *Zymova kampaniia proty "Naftohazu": khto vynuvatyi i shcho robyty - Detektor media. http://detector.media/infospace/article/123848/2017-03-07-zimova-kampaniya-proti-naftogazu-khto-vinuvatii-i-shcho-robiti/*