

UDC 332.012.2(477)

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## **EXPEDIENCY OF APPLICATION OF THE REGIONAL AND MUNICIPAL (COMMUNAL) WEALTH INDICATORS AT THE GENERATION OF THE REGIONAL AND URBAN DEVELOPMENT STRATEGIES**

In accord with the analysis of fulfillment of the active regional development strategies in regions of Ukraine the effectiveness of their realization is rather low. There is no correlation between the determined strategic purposes of the regional development. The diversity of targets, which are determined in the strategies, leads to the resource scattering and makes the adequate quality monitoring of these strategies fulfillment impossible. It is impossible to define whether the positive changes took place during the given period in the final conclusion. The analogical situation happens in the process of building the strategy of the local communities' development.

Also, the absence of the evaluative composite indicator of the effective realization of the development strategies prevents from the interregional comparison of the social and economic development and the monitoring of the contribution of each region in the national social and economic development.

The presence of the evaluative composite indicator of the effective realization of the development strategies of any territorial entity allows to evaluate the changes in the development quickly and precisely. It allows to define the expediency of the social and economic transformations and to make the ways of correction.

In the function of this indicator it is rational to point out RW (regional wealth), MW (municipal wealth) on both levels: regional and municipal. The whole of the regional wealth forms the national wealth (NW), and the municipal wealth is included into the regional wealth body. For the consolidation of terms, such as: national, regional and municipal wealth it is reasonable to introduce the only category – spatial wealth (SW).

The role definition of each author of the regional and municipal wealth will help to increase the level of attraction of the local community and the regional business community to the progressive development of the relevant territorial subdivisions and the accumulation of the regional (municipal) wealth.

The spatial (regional and municipal) wealth is the evaluative composite indicator of the effective realization of the development strategies of any territory which

displays all the aspects of the region development or the municipal subdivision.

The overwhelming majority of investigations concerning the structure and measuring the economical category of wealth refer to the national level. At the same time the attention is paid to the separate strands of wealth. This problem is being researched by the following national economists: V. P. Antonyuk, S. I. Doroguntsov, I. M. Bobuh, S. S. Shumska, L. V. Shynkaruk; also, this problem is paid attention to from the international organizations, such as The World Bank and Organisation for Economic Co-operation and Development (OECD).

Summing up the present scientific approaches to the definition of the concept “wealth” it is possible to point out such its strands as: human capital (the quality and quantity of the human resources), natural capital, physical capital (fixed capital, the cushion of the working capital, intangible assets including licences, patents, software etc.).

Regional (municipal) wealth structure scheme in fig. 1.

The defined strands of wealth are universal; in case of calculation they can be reconciled to the countervalue that provides the mutual additivity. That is why the general calculation formula of the spatial (regional and municipal) wealth is the following:

$$SW (RW, MW) = HC + NC + PC, \text{ where}$$

SW (RW, MW) – spatial (regional and municipal) wealth;  
HC (human capital)  
NC (natural capital)  
PC (physical capital)

It is inexpedient to point out the financial capital in the form of financial assets as a different strand of the national wealth by some researchers because the financial capital is the monetary form of the defined kinds of capital only. Also, it is necessary to note that household loans for education decrease the cost of the human capital.

In accord with the given scheme of the regional (municipal) wealth the content of the regional development strategies and the development strategies of territorial communities has a potential concerning the concretization of designation of quantitative characters of each element

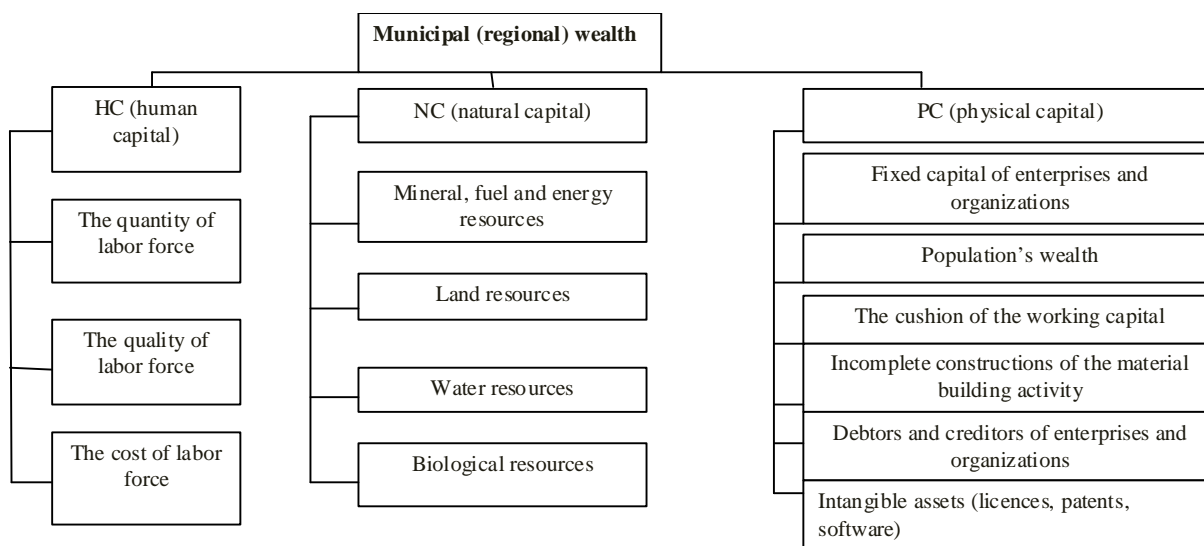


Fig. 1. The Structure of the spatial (regional and municipal) wealth

weight of the regional (municipal) structure and the ways of increase and optimization of its volume in actual data and monetary forms during the defined term of the strategy functioning.

The quality of spatial (regional and municipal) development is being estimated as changes of the corresponding wealth volume during the estimation period. If the period of the strategy functioning –  $t$  years, starting from the year  $n$ , then changes of spatial wealth will be  $\Delta SW = SW_{n+t} - SW_n$ , where  $SW_n$  – regional wealth volume in the beginning of the strategy functioning,  $SW_{n+t}$  – regional wealth volume in the end of the strategy functioning.

In this case the strategic management of the regional (municipal) development concentrates to the maximization of the additional wealth  $\Delta SW$  ( $\Delta RW$  та  $\Delta MW$ ). It allows to give a grounding in formation of the single system for taking decisions concerning strategic directions of the development of the certain territory and their estimation.

Human capital in the structure of spatial wealth plays a main role. In economically developed countries a part of human capital works out approximately 3/4 in national wealth and has a middle tendency to increase during the last century, at the same time in Ukraine it is 1/2 only. It is human capital that contains a potential for the faster accumulation of spatial wealth on the basis of the simultaneous economic postindustrialization and neoindustrialization.

There are two main approaches to estimate human capital. The first one is based on consideration of cumulating expenditures connected with its formation, and the second one – with the evaluation of the total income which will be obtained by an individual during the whole his life.

Cost method contains a number of disadvantages among which the usual consumption and multivalued allocation of charges between investments in the development of the personality (i.e. his ploughback) are. Also, cost method as a rule touches the previous expenditures.

Discounted cash flow method also is not perfect. The proper definition of the rate and the assessment of the future cash flows for the long-term outlook belong to its crucial problems. But this is the method that is directed to the future and allows to follow the single methodology of the calculation with other strands of spatial wealth. That is why this method is appropriate to evaluate the human capital.

The wide approbation of the calculation of the human capital with discounted cash flow method was applied at the realization of the relevant OECD project. Within the framework of this project only the market part of the human capital was taken into account in the age from 15 to 65 years old which were divided into 2 groups. The first group – people in the age from 15 to 40 years old, who are able not only to work but also to study. The second group – people in the age from 41 to 64 years old who can work only.

For people in the age from 15 to 40 the human capital calculation formula is:

$$\begin{aligned}
 LIN_{age}^{edu} &= EMR_{age}^{edu} \times AIN_{age}^{edu} + (1 - \sum_{edu} ENR_{age}^{edu-\overline{edu}}) \times \\
 &\times SUR_{age+1} \times LIN_{age+1}^{edu} \times ((1+r)/(1+d)) + \sum_{edu} ENR_{age}^{edu-\overline{edu}} \times \\
 &\times ((\sum_{t=1}^{t_{edu-\overline{edu}}} SUR_{age+t} \times LIN_{age+t}^{edu} \times ((1+r)/(1+d))^t) / t_{edu-\overline{edu}})
 \end{aligned} \tag{1}$$

Where

$EMR_{age}^{edu}$  – the probability for people in the “age” with education “edu” to be busy;

$AIN_{age}^{edu}$  – the current annual income in the “age” with “edu”;

$ENR_{age}^{edu-\overline{edu}}$  – the part of people in “age” with education “edu”, who obtain the education of the next level “edu”;

$SUR_{age+1}$  – the probability for people in the “age” with education “edu” to live till the “age+1”;

$LIN_{age+1}^{edu}$  – the discounted value of the lifelong incomes in the “age+1” with “edu”;

$r$  – annual growth rate of the real salary;

$\delta$  – rate of discounting;

$t_{edu-\overline{edu}}$  – the terms of education (the amount of years) of people with “edu” in the educational institutions with the higher level;

the amount of years of studying at the educational institutions where “edu” is given.

For people in the age from 41 to 64 the calculation formula is the next:

$$LIN_{age}^{edu} = EMR_{age}^{edu} \times AIN_{age}^{edu} + (1 - \sum_{edu} ENR_{age}^{edu-\overline{edu}}) \times SUR_{age+1} \times LIN_{age+1}^{edu} \times ((1+r)/(1+d)) \quad (2)$$

Thus, the cost of the human capital depends on the workers' education and the economic situation of the relevant territory which is characterized with the level of employment and the cost of manpower. That is why this directions must be the priorities of the strategic development.

It is expected that the owner has a rational behavior. He is aiming to maximize the utility of his future real consumption  $C(t)$ :

$$\int_0^T U(C(t))e^{-\delta t} dt \rightarrow \max \quad (3)$$

$$U(R) = \frac{C^{1-b}}{1-b}, \text{ при } b \neq 1; U(C) = \ln C \text{ при } b = 1,$$

where  $\delta$  – time advantage,  $b$  – aversion for the owner's risk. The owner solves the task (3)

due to the selection of the values

$$M(t) \geq 0, S(t) \geq 0, C(t) \geq 0,$$

within the framework of the balance with the primary conditions which have been set

$$M(0) = 0, S(0) \geq 0$$

and the price forecast  $p(t)$ , profitability  $r(t)$  and the stock price  $s(t)$ , that also have been set.

We include the linear terminal condition of the

general kind:

$$M(T) + a_s S(T) \geq 0.$$

The owner's task is the standard problem of the choice of the income optimal division. The task solution specifies:

demand for consumer goods  $C(t)$  in the goods market;

demand for stock  $S(t)$  in the stock market;

demand of the owner for money  $M(t)$

at any moment  $t \in [0, T]$  in dependence on the forecast  $p(t)$ , profitability  $r(t)$  and the stock price  $s(t)$  for the whole period  $[0, T]$ .

Under the natural resource potential we understand a set of natural resources and natural conditions that are situated in certain geographic boundaries that ensure satisfaction of economic, environmental, social, cultural, recreational and aesthetic needs of the individual and society.

There is a number of approaches of the identification and assessment of natural resource capital. Some researchers identify up to 10 methods of the assessment. However, discounted cash flow method and cost method can be considered as basic ones. Cost method includes cost estimates needed to restore the existing natural resources. The discounted cash flow method is actually considering the transformation of natural resources into capital through its economic capitalization.

This calculation formula of the present discounting value of the separate natural resours was offered by the specialists of the World Bank:

$$V_t = \sum_{i=t}^{t+T-1} p_i q_i / (1+r)^{(i-t)} \quad (4), \text{ where}$$

$\pi_i, q_i$  – common production profitability at the moment of time  $i$  ( $p_i$  – rent,  $q_i$  – manufacture),

$r$  – social discounting rate;

$t$  – the starting point of resource use;

$T$  – the resource use duration.

Spreading formula (4) on the natural capital it is possible to define that

$$NC \text{ (natural capital)} = \sum_{k=1}^N V_k, \text{ where}$$

$N$  – the number of natural resources names,  
 $V_k$  – discounting cost of the natural resource  $k$ ,  $k=1 \dots N$ .

Taking into account the dynamism of the modern economy, restriction of period  $t + T$  (the life cycle of the resource from the beginning of its development), with valid strategy is appropriate.

The essential problem is to determine the social discounting rate that reflects the alternative possibility of using resources by society or between two time periods or between different investment options.

As a matter of fact, the physical capital is materialized

labor of past generations, or its cash equivalent. Therefore, the physical capital includes not only tangible assets (fixed assets, equipment, machinery and equipment, transport infrastructure, personal property, etc.), but also the intangible assets in the form of licenses, patents, software, etc. as well as the accounts of enterprises and organizations.

Approaches to the assessment of each of the components of wealth are mixed.

First of all, there are contradictions in the apportionment of natural resource and physical capital. For example, mineral resources, which are on the balance of individual businesses, are the factors creating its value of its assets. I.e. they were capitalized at the level of enterprise and should be classified as physical capital. From the other hand, natural resources are the part of the natural capital. Similar arguments can be made about land or forest resources. Also, looking at the forest resources as a component of the natural resource capital, their evaluation can be done in two ways. First, the cost of wood, and secondly as a recreational area that can receive income due to recreational services.

Significant problems with evaluation of spatial wealth exist in accounting the financial resources in case of a debt creation at multinational companies in a particular area, and so on. For example, in Donetsk region there Mining and Metallurgical Company "Metinvest" debt exceeds 4 mldr. U.S. dollars. This debt was formed, on the one hand, on the security of fixed assets (bank loans), and on the other, in the form of bond issues ie, guaranteed by business in general. The business generally includes the ownership and use of mineral resources (coal, iron ore, etc.). Thus, this debt load should correct the decrease of the cost of natural resources and physical capital.

Methodologically coordinated and scientifically substantiated evaluative composite indicator of the effective realization of the development strategies is a useful tool for the consolidation of forces to reach the separate strategic goals which form the spatial wealth and help the qualitative monitoring of these strategies fulfillment to take place.

Due to the evaluative composite indicator the effectiveness of realization of the management strategy of the regional and local development leads to capital portfolio management (human, natural and physical) with the aim of its accumulation and increase.

The coordination of economic and social processes which take place in a region with the further definition of the effectiveness indicators as for the socially responsible business environment and also for the united citezenhood is a perspective direction of the regional wealth accumulation.

Taking into account that the part of the human capital in Ukraine is well below than the same part in economically developed countries the structural

changes of the spatial wealth should be realized in the increase of the human capital part. Also, considering the ambiguity and contradictoriness of the natural and physical capital calculation it is expedient to shift the accents up to the increase and estimation namely of the human capital.

National wealth is a strand and the most important part of the social and economic potential of the country and its regional resources. National wealth – as an important economic category and important indicator of the obtained level of the economic development – is being calculated in all the developed civilized countries of the world and is applied in the international comparisons. For example, national wealth is defined as resource pool of the country (economic assets), the necessary conditions of commodities production, service and protection of human life in Russian official statistics. It consists of economic objects which crucial criteria is a possibility to have an economic profit by their owner, i.e. acquisition of income from the property.

By international standards, the national wealth is a collection of accumulated wealth and intangible assets (financial and non-financial), created by the labor of all previous generations (national wealth) belonging to the country and its residents in the economic territory and abroad, and also explored and attached to economic circulation of natural resources. The volume of the national wealth depicts the results of the own capital accumulation: financial and non-financial assets from legal persons and individuals in sectors of industry of the country and its regions. The national wealth is the torque indicator, which distinguishes it from many other macroeconomic ones.

The important moment of the regional wealth definition is its element evaluation. The following forms of evaluation are in the national statistics: book value (historical) – in accord with the original price; the cost of change (replacement value) – in accord with the cost in the end of the period being analyzed; market value (according to the market price). Interesting attempts to evaluate the national wealth in Ukraine are given in [1; 2]. On the basis of evaluation of the strands of national wealth which are offered in the work by I. M. Bobuh [2, p. 150 – 151] we have made the calculative values of the regional wealth of the old-industrial economic regions of Ukraine: Donbass (Donetska and Luhanska regions), Prydniprovyia (Dnipropetrovska, Zaporizka and Kirovogradaska regions), Slobozhanschina (Kharkivska, Sumska, Poltavaska regions) which are shown in the table 1.

Such an approach can be used to develop scenarios of institutional and structural changes, and indicators of evaluation of the implementation of regional and urban strategies of socio-economic development.

Table 1

The assessment of regional wealth division within the borders of the old-industrial regions of the Eastern Ukraine 01.01.2011,  
thousands of US Dollars

Regional wealth element	Prydniprovyia		Slobozhanshchyna		Donbas		inquiry	
	For population	on territory	For population	on territory	For population	on territory	For 1 person	on 1 km <sup>2</sup>
Human potential	1 735 954 286	18 327 596 49	1 526 040 428	18 393 286 880	1 898 740 591	1 164 908 164	282,37	21896,77
Natural potential, including land resources	8 349 327 118	881 479 854	7 339 715 64	884 639 280	9 13 227 183	560 271 544	135,81	105 31,42
biotic resources	6 118 905 34	64 601 668 8	5 378 999 32	64 833 216 0	6 669 269 579	410 610 368	99,53	7718,24
Water resources	5 533 020	58 497 93	48 639 60	58 707 60	6 051 870	3 718 148	0,90	69,89
Mineral and Energy Resources	5 963 366	62 992 62	52 422 68	63 218 40	6 522 571	4 003 832	0,97	75,26
Recreational Resources	2 060 742 56	21 756 894 3	18 115 548 8	21 834 876 0	22 539 853 6	138 287 548	33,52	2599,39
Ecological capacity of the environment fixed assets	4 918 240	51 894 00	43 235 20	52 080 00	5 379 440	3 298 400	0,80	62,00
Current assets in stocks of	5 533 02	55 493 1	48 639 6	55 692 0	605 187	352 716	0,09	6,63
Material assets	2 723 475 4	28 764 34 2	2 394 149 2	28 867 440	29 788 649	18 282 712	4,43	343,66
Intangible assets	7 192 926	75 723 39	63 231 48	75 994 80	7 867 431	4 813 004	1,17	90,47
Objects of incomplete building	-	-	-	-	-	-	-	-
Elements of financial capital	4 057 548	43 130 61	35 669 04	43 285 20	4 438 038	2 741 396	0,66	51,53
Total	-1 168 082	-68 634	-1 026 836	-68 880	-1 277 617	-43 624	-0,19	-0,82
Total by column	2 604 269 558	27 495 567 18	2 289 357 884	27 594 117 60	2 848 480 723	1 747 627 448		
Population, thousands of persons	4 311 452 140	4 553 096 697	3 790 105 720	4 369 416 040	6 614 492 181	4 058 871 656		
Square, km <sup>2</sup>	6 147 800	83 700	5 404 400	8 400	6 724 300	53 200		

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**Ляшенко В. І., Жихарєва Ю. І., Вишневський О. С.** Доцільність застосування показників регіонального та муніципального (комунального) багатства під час розробки регіональних та міських стратегій розвитку

Як свідчить аналіз виконання наявних регіональних стратегій розвитку регіонів України, ефективність їх реалізації є вкрай низькою. Між визначеними стратегічними цілями регіонального розвитку відсутнє взаємозгодження та взаємозв'язок. Різноманіття цільових показників, визначених в стратегіях, призводить до розпилення ресурсів та унеможливує проведення адекватного моніторингу якості виконання цих стратегій. У кінцевому підсумку неможливо визначити, чи мали місце позитивні зміни загалом протягом визначеного періоду. Аналогічне становище має місце під час стратегування розвитку місцевих громад. Відсутність комплексного показника оцінки ефективності реалізації регіональних стратегій розвитку перешкоджає міжрегіональному співставленню соціально-економічного розвитку та моніторингу внеску кожного регіону в національний соціально-економічний розвиток.

*Ключові слова:* багатство, регіони, стратегія, показник, місто, розвиток.

**Ляшенко В. И., Жихарева Ю. И., Вишневский О. С.** Целесообразность применения показателей регионального и муниципального (коммунального) богатства при разработке региональных и городских стратегий развития

Как свидетельствует анализ выполнения действующих региональных стратегий развития регионов Украины, эффективность их реализации является крайне низкой. Между определенными стратегическими целями регионального развития отсутствует взаимосвязь. Многообразие целевых показателей, определенных в стратегиях, приводит к распыленности ресурсов и делает невозможным проведение адекватного мониторинга качества выполнения этих стратегий. В конечном итоге невозможно определить, имели ли место позитивные изменения в целом в течение определенного периода. Аналогичное положение имеет место при стратегировании развитии местных сообществ. Отсутствие комплексного показателя оценки эффективности реализации региональных стратегий развития препятствует межрегиональному сопоставлению социально-экономического развития и мониторинга вклада каждого региона в национальное социально-экономическое развитие.

*Ключевые слова:* богатство, регионы, стратегия, показатель, город, развитие.

**Lyashenko V. I., Zhykhareva Yu. I., Vyshnevskyy O. S.** Expediency of Application of the Regional and Municipal (Communal) Wealth Indicators at the Generation of the Regional and Urban Development Strategies

In accord with the analysis of fulfillment of the active regional development strategies in regions of Ukraine the effectiveness of their realization is rather low. There is no correlation between the determined strategic purposes of the regional development. The diversity of targets, which are determined in the strategies, leads to the resource scattering and makes the adequate quality monitoring of these strategies fulfillment impossible. It is impossible to define whether the positive changes took place during the given period in the final conclusion. The analogical situation happens in the process of building the strategy of the local communities' development. Also, the absence of the evaluative composite indicator of the effective realization of the development strategies prevents from the interregional comparison of the social and economic development and the monitoring of the contribution of each region in the national social and economic development.

*Key words:* wealth, regions, strategy, index, city, development.

Received by the editors: 24.09.2013  
and final form 04.12.2013