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## **THE«RESOURCES CURSE» PHENOMENON IN CONTEXT OF SOCIO-ECONOMIC TRANSFORMATION OF UKRAINIAN ECONOMY**

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Ukrainian natural resources have played an important role in strategy of socio-economic development. Ukraine has significantly strong natural resources potential, that is visibly reflected on the industrial agglomerates formation process: fuel and energy, metallurgical and chemical. At the same time, not only are the economic growth rates in this country unsatisfactory, but there are certain displays of regress and socio-economic system degradations as well. In this aspect we have returned to the question of whether there is any relationship between a Ukrainian endowment of natural resources and its rate of economic growth.

An actual for today conception of steady development assumes the obligatory taking into account natural capital when a deep estimation of the efficiency of the socio-economic system is being considered. The quantitative indexes that have been worked out within the framework of this conception allow estimating the degree to which natural resources contribute in the process of the national product creation. The economic system, in which added value is created mostly due to the labor and capital resources exploitation, carries an intensive character, as it mortgages possibilities for the further recreation and balanced development. The more considerable is the contribution of natural capital in the national income receipt process, the more economic activity carries an extensive character of growing consumption, abbreviating possibilities for future development. The unevenness of natural capital territorial allocation, its structure and degree of bringing

in reproductive processes directly influence the model of separate region and even the whole country social and economic development.

The results of the recent researches dedicated to the process of an effective socio-economic development model forming are rather contradictory. Thus, the World Bank research group under the direction of D. Lederman and J. Maloney (2007) has come to the conclusion, that a so-called phenomenon as "the resources curse" does not exist at all. Accordingly, the natural capital concentration has positive correlation with the rates of the economic growth. However, an outstanding research held by Professor J. Sachs illustrates a negative influence of the natural resources surplus on long-term tendencies on national economies development all over the world. In addition to that, several convincing proofs of the existence of "the resources curse" were studied in the work of P. Collier (2007) and points out that only countries with effective market institutes can avoid a resources surplus negative influence. An ineffective institutional structure of the transforming economies, high level of public and private consumption, not significant or irrational investments and several trials to replace productive activity by easily achievable margins are all these sources of "the resources curse".

Within the considered problems framework, the interrelations between "natural resources - transforming economy - an economic growth" are the most interesting for a national researcher. The main goal of the article is a deep research of the "resources curse" phenomenon in the context of the world economic system development and determination of the features that reflect in the Ukrainian economy.

One of the most detailed natural capital descriptions is provided in the studies of R. Costanza and G. Daly (1992) where it is seen as a stream of natural services source and real natural resources. This term embraces both physical resources and environment. The main natural capital components are the following: depletable natural capital (non-renewable energy resources), recyclable or cyclically used natural capital (non-energy mineral resources), renewable or potentially renewable natural capital (soil and environment in general).

A natural capital (NC) being the factor of the economic growth finds the display only in totality with other types of capital. Within the limits of conception of national wealth, offered by the World Bank, a strong intercommunication is formed between three capital types: natural, produced and intangible capital. A produced capital (PC) includes a supply of machineries, equipment, raw materials and buildings that can

be used for a further production. It is a natural capital which has been transformed by a human labor into physical assets that is able to continue generating goods and services. An intangible capital (IC) in practice is settled as the remains or, in other words, as a difference between the general national wealth volume and the sum of natural and produced capitals.

According to the World Bank recommendations, the ( $W_t$ ) gross value at the moment of time ( $t$ ) may be calculated in the following way (World Bank 2006: 144):

$$W_t = \int_t^{25} C(s)e^{-r(s-t)} ds \quad (1)$$

Where  $C(s)$  — the gross level of consumption at the moment,  $R$  — a social investments' profitability rate, that represents the alternative costs that are charged to the society and which are constrained with abandonment from investing in a private sector in favor of the public one. The constituents of this index are: a net sentinel profits rate ( $p$ ); a product of utility elasticity goes in accordance to the consumption level ( $\mu$ ) and the growth of consumption ( $\Delta c$ ) rate. In the following calculations the 25-year period and the corresponding social rate of 1.5 percent are used (Pearce and Ulph 1999).

An intangible capital (IC) is the most ponderable constituent of national wealth regardless the level of the proceeds. Specific gravity of this index increases simultaneously with the national wealth increase. An increase in the intangible capital absolute size and a respective fall in its specific gravity in countries with the income below the average is the display of «the middle income trap» effect (Canuto and Cavallary 2012). High rates of wealth increase in the lower middle income sector are conditioned by investment streams repressing aspiration in a produced capital. The cheap labor force presence and subzero production charges are allowed by an extensive way to support the GDP increase and a welfare promotion. However, the potential of such increase that is settled exceptionally in the real capital may deteriorate very quickly: the increase of salary and living standards does not allow the national producers to compete on export markets with countries that experience higher production subzero charges. A competition becomes impossible both with low-income countries and with the most developing economy. Overcoming this "trap" is stipulated only by an intangible capital. A

future improvement in the human capital quality, institutional structures perfection and innovative alteration will form several additional factors of the economic growth and will definitely provide the increase in the intangible capital productivity.

The results of the conducted analysis do not allow to simply effect on positive or negative natural capital influence on the economic growth, coinciding with some international specialist's viewpoints. At the same time, there is a possibility to complement the conclusions set by Professor P. Collier (2007). In countries with the low level of incomes and a weak institutional structures a certain form of "resources curse" undoubtedly finds the display the insufficient level of the intangible capital provision and, consequently, in its insignificant cost estimation. The countries of this group are only theoretically, but not yet actually able to realize a potential that is located in the natural capital. In countries with the higher level of incomes the effect of "resources curse" is almost absent, and too high natural capital efficiency is mostly conditioned by the efficiency of the intangible capital. At the third group of countries (with incomes that are higher than average) the influence of resources on national welfare should be considered as neutral, that is conditioned by a repressing orientation on the innovative economics sector development. The national wealth structure mostly depends on the states starting positions in the moment of their transitional period formal beginning. For example, substantial socio-economic changes in Ukraine began only after the Soviet Union disintegration, and in the former countries of socialistic camp in Central and East Europe — have been formed within few years or even decades before the event, that defined their leadership in the process of market reforms realization.

Regarding this aspect, it would be quite interesting to compare Ukraine with the state of the Visegrad Four countries: the Czech Republic, Poland, Slovakia and Hungary. It is clear that these countries have far passed Ukraine on the way to the market transformation and to the process of assimilation to European socio-economic community. Also, a very high economic, sociocultural and, in a certain understanding, paternalist influence of Russia on the choice of priority directions of the development of Ukraine deserves to be taken into account. During 2000-2005, it was possible to establish a considerable break between the levels of national wealth in Ukraine and in the Visegrad Four (table. 1). The natural capital volume in 2000 almost coincided with the level of the Czech Republic, Slovakia and Ukraine,

7440 USD, 7797 USD and 7235 USD per capita respectively. During a five-year period, the use of natural capital in reference countries decreased at about 34 – 36 percent, and in Ukraine — only at 4.7 percent. A substitution for the natural capital took place due to the increase in both produced and intangible capital - on the average in the Visegrad group at 12.4 percent and 33.7 percent. For the same period, the use of the produced capital in Ukraine fell down almost at 8 percent or 626 USD per capita. The national increase of the intangible capital laid down at almost 203 percent.

**Table 1. The National Wealth structure according to the types of capital (Visegrad group and Ukraine)\***

Country	Wt, USD	Part, percent			
		IC	NFA	PC	NC
Basic dataset					
Czech Republic	152 942	70,35	-0,60	25,38	4,86
Hungary	134 456	74,31	-4,54	23,54	6,70
Poland	113 350	76,72	-1,95	15,74	9,49
Slovakia	112 471	68,51	-1,22	25,78	6,93
Ukraine	19 693	25,88	-2,62	40,00	36,74
Current dataset					
Czech Republic	180 820	74,83	-1,85	24,47	2,54
Hungary	173 007	81,67	-5,45	20,32	3,45
Poland	135 941	80,87	-2,51	15,10	6,54
Slovakia	142 373	77,45	-3,39	22,44	3,50
Ukraine	29 322	52,81	-1,06	24,73	23,53

\* This dataset is no longer updated. Latest data is available as part of the Wealth Accounting <http://data.worldbank.org/data-catalog/wealth-accounting>

On one hand, such results can be interpreted as the tendencies to overcoming "the middle income trap", passing to the intensive economic growth. But on the other hand, it is evident from the figures that in 2005 the GDP level per capita in Ukraine amounted to only 1828 USD, that is

far fewer than the limits of origin of the primitive and the secondary "trap" (11.0 thousand USD and 15.0 thousand USD (Eichengreen et al. 2013: 4).

Second, the intangible capital increase is accompanied by the absolute fall in volume of natural and produced capitals. Thus, infrastructural and institutional changes in Ukraine, that found the reflection in the increase of non-material capital during 2000-2005, are the certificate of the real capital "eating" away. The economic growth in Ukraine carries "artificial" character, and the authenticity of economic collapse rises in a long-term period (after the produced and natural capitals resources exhaustion).

If the recyclable natural capital (minerals) use does not provide forming the other types of wealth and spend only for consumption, then we will have its complete exhaustion without any alternative assets that would be able to generate income. The inefficient administrative mode and ineffective specification of ownership rights can stipulate the recyclable part of natural capital exhaustion.

In obedience to international classification, Ukraine is attributed to the countries with the lower middle income level. The domestic structure of national wealth is very near to the world average indexes of a corresponding group. However, the pattern of the use of capital has substantial differences. The elasticity in national wealth increase according to the level of natural capital is 10.52 units (every additional percent of wealth abbreviates natural capital on 10.52 percent). A corresponding index is calculated for the volume of produced capital – 6.14 percent. And all this is accompanied by the national wealth increase on 48.89 percent. Such nonsense may be explained by two main factors. First, the national wealth logic settlement as totalities of the discounted consumer charges, but not of the real material and non-material assets cost estimation could be a reason. Thus, a growing Ukrainian intangible capital is a synthetic and conditional index. Second, the exhaustion and capital assets recreation in Ukrainian national economy are the sources of such "increase" as well. Expansion of current consumption exists due to the conscious leading out of money from an investment sphere. Correlation between the degree of assets depreciation and the GDP level in Ukraine could serve as a bright illustration of this process.

In a period from 2001 to 2013 assets depreciation degree in national economy grew from 4 percent to 77 percent. At the same time, GDP in

settling per capita increased from 796 USD to 3862 USD. However, already in 2013 the falling of GDP (according to the official sources) amount to 0.13 percent. The process of produced and natural capital "eating" has a certain limit and the Ukrainian economy attained it. Thus, the use of the economic growth formed model in the future is not only inefficient, but it is simply not possible.

One might argue that within the Ukrainian economy it's observed a good example of irrational and wasteful natural resources use. We have found the relationship between a country's rate of economic growth and the relative abundance of its natural resources depends on each country's national wealth structure. This thesis considered several explanations for the perceived poor performance of resource-intensive Ukrainian economy. We find evidence of a possible negative impact of natural resource abundance on long-term growth (Burlutski, 2015).

In the terms of "the resource curse phenomenon" the development of rent-seeking economic behaviour becomes possible: the economy is operating only in the interests of particular elite, and public interests are secondary importance.

Traditional political economy understanding the definition of rent due with full reimbursement from the gross income of current costs and the distribution results to normal profits and rents (the surplus of the owner's a production factor). Formal entry of this definition (Smith interpretation) has the form:

$$R = S - (W + M + A + i \times K), \quad (2)$$

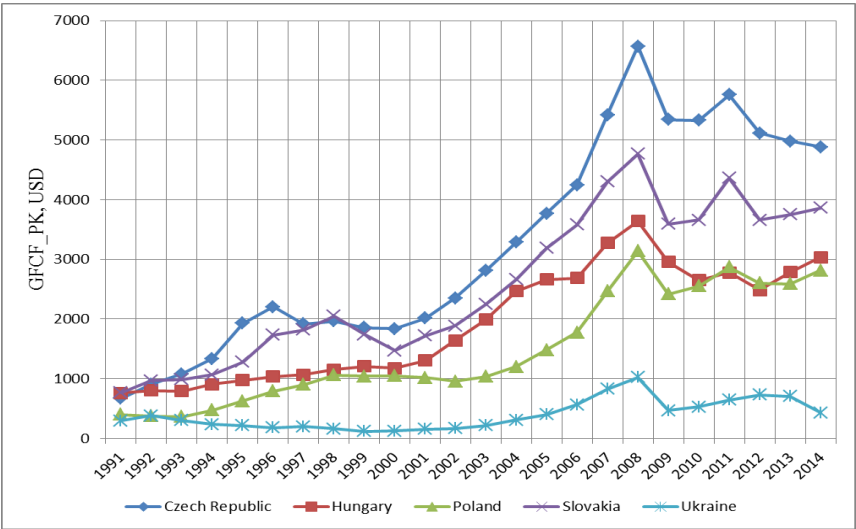
where R - the gross rent; S – gross national product in cash equivalent (value); W – cost of labour; M – material and equivalent costs; K – produced capital; A – capital consumption; i – the average rate of return.

Rational public policy should be aimed at increasing the national product volume and increasing its quality. In our case this is illustrated, at first, by growth element (S), and as a consequence increasing government revenue and increasing social welfare. At second, if the resources owner (mostly natural) is the government, the formation and withdrawal of rent will promote an economic growth. Everything is changing for the existence of the situation where the rent is not given by the government, but individual economic agent. If the marginal cost of increasing the product (S) exceeds the marginal costs of rent retention,

the cost-normal orientation of entrepreneurs to maximize (S) will be replaced by priority maximize (R), and hence will be the rent-seeking behaviour basis. The greatest risks of occurrence of such situation are inherent to the transformational type economies, including Ukraine.

The elements of capital and capital consumption significantly correlated with each other (equation 2). The amount of capital consumption (A) depends on the existing depreciation policy and the sum involved fixed capital (K). Therefore the capital reduction leads to the depreciation decrease and further leads to greater loss of fixed assets. The result of the loss and the capital depreciation (physical and moral) will be a loss of product competitiveness. But, if we accept a priori the minimum product quality that can be maintained without significant investments, and the use period of fixed assets is significant, we will formulate **Hypothesis 1**: *the source of rents in the short run is not complete recovery of fixed capital*.

The rent formation is possible as a result of recovery absent of fixed capital. Consequently, gross fixed capital formation in Ukraine will be significantly different from the reference Visegrad four. For the analyzed period this indicator had a tendency to increase in all countries of the analyzed sample (Fig. 1)



**Figure 1 Gross fixed capital formation**

*Composed by the authors according to Word Bank data*



But the backlog of Ukraine from other countries every year increased and reached a maximum value in the pre-crisis 2008. Minimum rate of growth of gross fixed capital formation in 353 % was observed in Hungary and a maximum in Poland – 728 %. It should be noted that in 1992 the rate of accumulation in Poland and Ukraine is almost identical and accounted 384,8 and 379,1 USD respectively. But in 2014, the ratio was 431,5 and 2816,1 USD. Identified rate of growth almost equal to the rate of GDP growth in respective countries.

As a result of the regression analysis of the dependence GDP (GDP\_PC) of the degree of produced capital accumulation (GFCF\_PC) obtained according to (3), (4):

$$\text{GDP\_PK}_{\text{POL}} = 4,6767 \text{GFCF\_PC} + 355,22; \quad (3)$$

$$\text{GDP\_PK}_{\text{UKR}} = 4,1609 \text{GFCF\_PC} + 165,8. \quad (4)$$

The regression coefficients indicate the relative growth of the gross domestic product at 4,6767 USD and at 4,1609 USD as a result of additional investments in fixed capital of 1,0 USD.

The elasticity of GDP by capacity investments is almost the same in Poland and Ukraine, and consequently, *ceteris paribus*, the efficient capital's use is also equivalent. At the beginning of the period the GDP of Poland and Ukraine are almost matched, in 2012 differed in 3.28 times. Therefore, there are other factors that contribute to this difference.

The institutional forms of the market type, developing under the influence of the international economic integration process and globalization induce the instability of the transformational economies. In terms of imbalances in the international distribution of production factors it is the combination of internal economic, institutional instability and the possibility to integrate into the world market system may create an adverse impact on economic growth. Foreign trade in transition economies can be designed to obtain international economic rent.

It is advisable to distinguish two main channels of export influence on the country GDP. Firstly, the export is a direct calculation element of GDP. Secondly, the income export component stimulates domestic demand. Significant revenues from exports, potentially aimed at renewal of production and innovation development, is the economic growth

source. And therefore these revenues can be cause of found differences in equations (3) and (4).

**Hypothesis 2.** *The amalgamation of capital into financial-industrial group provides the rent getting in high cost of debt capital.*

The high credit risks such as change in national currency exchange rate, political instability, nationalization, etc. inherent to the transformational economies. But the threat level of the real existence of such risks is not very significant, but interest rates are on the verge of maximum acceptable level. The analysis results of the relation between changes in interest rates on loans in foreign currency (EUR) granted to legal entities for a one year period in Poland and Ukraine indicate a nearly fourfold excess of the cost of debt capital for Ukrainian business. In 2011, the average rate on credits in Poland was 3.6 percent, and in Ukraine - 15 percent. The interest rate has reached 23 percent for credits in UAH to legal entities.

Rental income arises as a result of evasion of income tax. Hence the use of offshore financing schemes (direct investments in shareholders' equity, loans) allows you to get a similar result.

**Hypothesis 3.** *The condition for the economic rent's genesis is a lack of national recaptured and the lack of extended human capital reproduction.*

The analysis results of the labour productivity (per capita ratio of gross domestic product to employed person) indicate trends similar capital accumulation conditions. In 1990 the labour productivity in Hungary, Poland and Ukraine overlapped (from 12088 USD to 12576 USD), but in 2011 the Ukrainian economy backlog amounted to more than 200 percent. Over the last decade the rate of the labour productivity growth in Ukraine amounted to 144 percent. Average level of remuneration for 2001-2011 it reached to almost 560 percent (from 708,15 USD to 3972,16 USD per year).

**Hypothesis 4.** *The condition of getting of the economic rent absolute form is relatively low the capital's organic structure (the hypotheses 1,3 consequence)* In the first approach selling price of the product "SP" is a cost reflection of capital (variable "v" and constant "c") that generates a cost and profit on this capital "p" (margin on cost):

$$SP = c + v + p = c + v + (c + v)p'; \quad SP = (c + v)\left(1 + \frac{m'}{1 + (c/v)}\right). \quad (5)$$

Rate of return "p" is directly proportional to the rate of surplus value "m" and opposite to the rate of capital organic composition "c/v". Hence the trend to reduce the organic structure will determine the increase in profit margins and absolute profits. The differences in the capital's organic structure can be significant both in industry and within national economies. This is a consequence of variation in the real economy from the conditions of perfect economy. The more the economic structure is approaching a monopoly or oligopoly type (and this is inherent in the Ukrainian economy), the more possibilities of obtaining absolute rent.

Thus, the hypothesis about the ability and opportunities of subjects of the Ukrainian economy to charge an economic rent received appropriate empirical evidence. The analysis results of the of parameters of the national economy functioning indicate that the presence of significant resource potential creates the opportunity to obtain rental income, and rent-seeking behaviour, in turn, slows down economic growth. The Ukrainian phenomenon of "resource curse" reflected in general economic stagnation and the resource potential loss. The overcoming of institutional traps rent-seeking behaviour is only possible through a radical change in the investment and financial policy, produced and human capital recovery.

## REFERENCES

BURLUTSKI S., BURLUTSKI SV. (2015). The «resources curse» and special features of the economic growth in Ukraine. Journal of Life Economics. Istanbul.

BURLUTSKI S., BURLUTSKI SV. (2016). The Socio-economic Development of Ukrainian Economy: «Resources Curse» Phenomenon. Formation Strategy of Economic Structures: the Tools and Practices. Riga: «Landmark» SIA., pp. 25-35.

CANUTO, O., CAVALLARI, M. (2012). Natural Capital and the Resource Curse. World Bank, Washington, DC.

COLLIER, P., GODERIS B. (2007). Commodity Prices, Growth and the Natural Resources Curse: Reconciling a Conundrum. Working Paper 276, Centre for the Study of African Economies, Oxford.

COSTANZA R., DALY H. E. (1992). Natural Capital and

Sustainable Development Conservation Biology, Vol. 6, No. 1., pp. 37-46.

EICHENGREEN B., PARK D., SHIN K. (2013). Growth Slowdowns Redux: New Evidence on the Middle-Income Trap NBER Working Paper No. 18673.

LEDERMAN, D., MALONEY W. F. (2007). Natural Resources: Neither Curse nor Destiny. Washington, DC: World Bank; and Stanford, CA: Stanford University Press.

PEARCE D.W., ULPH D. (1999). A Social Discount Rate for the United Kingdom, In Environmental Economics: Essays in Ecological Economics and Sustainable Development.

WORLD BANK, 2006, Where is the Wealth of Nations? Measuring Capital for the 21st Century. Washington.