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SCIENTIFIC ARTICLES

Economic Theory

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I. V. Rozmainsky,
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"REVERSE GRADUALISM", INVESTMENT COLLAPSE AND MONETARY DEGRADATION IN RUSSIA IN THE 1990s

I. Introduction

In the 1990s The Russian transitional economy was characterized by many adverse economic processes, and this paper will focus on the two of these ones. The first one was the long and biggest fall in output and fixed capital investment. The second was *monetary degradation* (this term will be explained below). These phenomena (especially the first one) reflected clearly failure of economic reforms in Russia, because large negative economic growth implied nothing but fiasco. Why the Liberal Reforms of the 1990s were so unsuccessful?

The goal of this article is to give the answers to this and some other questions. I will show that roots of economic failure of Russia in the 1990s are in the type of the strategy of economic reforms. I called it "*reverse gradualism*"; indeed it is the newest label for the shock therapy strategy, as I will explain below. Such strategy generates the criminalization of the economy, which, in turn, does the adverse influence on investment, output and finance. The interaction between investment sector and monetary processes deepened crisis. The general outcomes are underdeveloped economy, technological backwardness and ineffective institutional environment. These ones can be considered as one of the roots of social and political processes started after reelection of Putin in 2012 in Russia.

The structure of the paper is the following. The Section 2 describes (in detail) the essence of gradualism and its important elements and also explains why shock therapy strategy – at least, in the case of Russia – is nothing but "reverse gradualism". The Section 3 illustrates the ideology of the Russian transitional reforms. The Section 4 describes both concrete carrying-out of reforms in Russia and how these reforms generated criminalization of the economy. The Section 5 describes the influence of criminalization on fall in fixed capital investment. The Section 6 contains the description of the influence of the same process on monetary degradation. Section 7 tells about the interaction between changes in fixed capital investment activity and financial development in the developed countries (including "new industrial countries") and in Russia. The Section 8 is the conclusion.

2. Gradualism versus Shock therapy or "Normal Gradualism" versus "Reverse Gradualism"

The problem of the gradualism/shock therapy choice is widely discussed among the economists who are concerned with the economics of transition (Dewatripont & Roland, 1995, 1997; Aslund, 1996 etc). It seems to me that, however, underestimation of the essence of gradualism takes place. Gradualism is the sequencing of reforms. Yes, of course, it is true. But this definition is not sufficient. It does not give the information about duration of each of these reforms. This point is very important.

What reforms constitute gradualist transition to the market economy? I think that it is necessary to mention the following ones.

- a) The creation of the legal framework for the market economy. I mean such things as clear system of property rights, contract law, the definitions of rights and duties of private and state enterprises, the procedure of the bankruptcy, provision of the general coherence of laws (for example, coherence of instructions of the President with laws of legislative organs) etc (see Udovenko and Gurinovich (1994)).
- b) The development of private sector.
- c) Demonopolization and restructuring of the enterprises.
- d) Privatization.
- e) Price liberalization.
- f) The departure of the government from the economy (in particular, from the sphere of the enterprises administration and management).

What especial feature of this list? Each successive reform takes less time than preceding one. The duration of price liberalization or of departure of the government from the business administration can be equal to one day. On the other hand, the creation of the good legal framework or the development of (even small) private sector can take a few years. More early reforms are longer (and also complicated).

It means that shock therapy policy is the immediate introduction of all reforms but is not immediate completion of all ones! If that policy takes place, logically later reforms are ended more early because of its extremely small relative duration! For example, imme-

diate introduction of both the development of private sector and the departure of the government from the business administration simply means that, as a (intermediate) result, many enterprises will remain without any administration (Raskov, 1995)! Or the attempts to create simultaneously privatized enterprises and legal framework will lead to the situation of the "game without rules". Both such situations took place in Russia in the 1990s.

I would like to note that the shock therapy policy *ex ante* has been transformed into the "reverse gradualism" *ex post*. Those reforms that must (from economic point of view) be implemented later, take place more early (it is the definition of the "reverse gradualism"). Such "bad" succession complicates the transition to the market economy and also generates chaos and increases the uncertainty of the future. But the main evil of the "reverse gradualism" is the creation of the prerequisites for criminalization of the economy. In other words, such policy gives the broad possibilities for the getting income by cheatings, plundering and other "black" (i.e. illegal) kinds of economic activity (I will show it in the Section 4).

Broadly speaking, the above reasoning implies that the ("normal") gradualism is the only effective strategy for the transition to the market economy. Privatization and price liberalization can be successful only if these reforms are based on clear legal framework and are realized under the existence of private sector. It means that the time period between the initial decision to create the market economy and fully desired liberalization must be long. But then that transition will be very effective, as experience of China (country which was gradualist very consistently) shows. Quick reforms in the spirit of shock therapy approach, on the other hand, can lead to the sharp economic slump and to many social problems.

So there is effectiveness/duration trade-off. More effective reforms are more long and vice versa. The effective policy *a la* ("normal") gradualism is slow. The quickest shock therapy measures (the "reverse gradualism") are harmful for the macroeconomic performance and financial development.

But the political constrains also take place. Many economists believe that high costs of reversal are disadvantage of shock therapy policy (Dewatripont & Roland, 1997). But if there are both extreme political instability and the threat of the seizure of power by the reactionary forces, then transitional reforms must be quick and irreversible in order to make the market economy rising inevitable. In that case high costs of reversal are the advantage of shock therapy policy (Aslund, 1996) because in such politically adverse situation rapidity is more useful "good" than effectiveness and macroeconomic performance (it is the point of view of many extreme liberal reformists). It is such circumstances that took place in Russia, when the Rus-

sian government made the decision to create the market economy.

3. The Ideology of Transitional Reforms in Russia

In order to understand especial features of the Russian economic reforms, it is necessary to ascertain its ideology. According to my opinion, this ideology was characterized by the following points.

a) The idea of the "jump into the market". Many economists said: "the main is to jump into the market, all the rest does not matter". In other words, for many Russians the market economy was not the means but the goal. The market became the idol. "Towards the Market at any cost". I think that it is the reflection of the essential features of the psychology of the Russians. "All or nothing" is the principle of many Russian people. For such people the "cost/benefit" thinking (which is so typical for the Americans) is not characteristic.

b) The Hayekian idea of the "spontaneous rising of the market institutions". This idea occupied the brains of Gaidar and many other reformists. According to this principle, the creation of the market economy must not be concerned with the government actions. The government should depart from the economy and open the way for the rising of the market institutions. The emergence of such institutions is the effect of the chaotic interactions between many atomized individuals. The government must not disturb the "mystery" of spontaneous rising of the market economy.

c) The above-mentioned fear of the seizure of power by the reactionary forces, i.e. of the revenge of the communists. "If we will make reforms very quickly, the return (to the power) of the communist forces cannot deteriorate situation, because the transition to the market will become irreversible". It is the way of thinking of many Russian reformists. "The main thing is to make the reforms as quick as possible".

These fundamental principles had laid the foundation of the Russian transitional reforms. The analysis of these principles shows that such reforms were extremely quick and completely "unreasoned" and "unstructured". The implementation of these reforms generated big chaos and increased the uncertainty of the future in Russia.

4. "Reverse Gradualism" and Criminalization of the Economy in Russia

By the 1991 in Russia the state organs of the enterprises administration were abolished. In the January of 1992 price liberalization took place. In 1992 - 1994 the main part of privatization took place. But these reforms were executed in conditions of the absence of such important elements of the healthy market economy as a clear legal framework, private sector and competitive environment. In other words, economic agents got large possibilities to "make money" by illegal means. The main such means was the "*nomenklatura*-

ja privatizacia". It took place when managers of state enterprises created false firms and transmitted resources of these enterprises into such firms. These and similar actions (together with famous "rent-seeking activity") displaced "usual" productive and investment activity. The point is that because of the government departure the property which belonged to the state became belonging to nobody. It led to massive redistribution of incomes and criminal formation of capital of many economic agents. More exactly, the most part of the Russian private capital was created because of such "reverse gradualism" by criminal and semi-criminal methods, that is, by "nomenklaturnaja privatizacia", speculation, theft, rent-seeking activity and so on. These phenomena became possible owing to the absence of clear property rights and other "rules of game". Such institutions are the necessary condition for domination of the motive of profit maximization on the base of productive and investment activity. In the transitional economy these institutions must be created in the first phase of "normal" gradualist reform and make the base for the subsequent measures (see the Section 2). In Russia in the 1990s this base was not satisfactory. That is why as in the beginning of the transition as in the end of the 1990s, speculation, cheatings and transactions with rights, privileges and licenses generated more benefit to economic agents than "normal" productive and investment activity.

In 1992 and 1993 the amount of criminal appropriation by private agents was equal to 75-80% of GDP; in 1996 (when law framework became already a little more clear) it was equal to 12-15% of GDP (Shmeljov, 1997, p. 32).

As a result in the Russian economy in the 1990s there was rising of informal rules of game created by criminal groups. Criminalization of the economy was self-intensifying. It did the adverse influence on the investment and financial sector, as I will show in the next two sections.

5. Criminalization of the Economy and Collapse of Fixed Capital Investment in Russia

It is known that fixed capital investments are the moving force of macroeconomic dynamics. Such investments increase the level of aggregate demand, expand productive possibilities of the economy (Lavoie, 2006, ch. 5) and are the channel of innovations' diffusion. Without fixed capital investment there are no economic growth and technical progress. The consequences of the slack capital investment activity are stagnation and technological degradation. The long decrease in such investment leads to the heavy slump.

But fixed capital investment activity is concerned with the long-run estimates and expectations of the future. The necessary condition for the carrying-out of fixed capital investment projects is (more or less) stable socio-economic environment. In other words, fixed capital investment is the decreasing function of the

(high) uncertainty of the future, economic and political instability, "non-clear" legal framework, the absence of certain guarantees from the government etc (Rozmainsky, 2013).

It is stupidly clear that conditions which are favorable for fixed capital investment and ones which are favorable for criminalization of the economy are opposed each other. Criminal and semi-criminal kinds of activity - stealing, illegal speculations, "games" with rights and licenses - are the "fishing in troubled waters". *Criminalization needs chaos, instability and uncertainty*. Time horizon of the representatives of criminal groups is extremely short-term. The goal of such economic agents is to make money as quickly as possible ("while waters are still troubled"). Such agents are characterized by *investor myopia* which means that agents evaluate consequences of their decisions only over short-time horizon (Rozmainsky, 2013). Criminal actions are inconsistent with any long-run activity. In short, the uncertainty of the future, socio-economic instability and helter-skelter with legal framework both increased the uncertainty of the future and created prerequisites for the success of criminal activity.

On the other hand, investment activity needs the "calm waters". Time horizon of "fixed capital investors" is very long (5-40 years). The goal of such agents is to earn maximal profit during a very prolonged time period. Any uncertainty, instability and chaos are extremely disturbing the fixed capital investment activity.

So if in the economy the most profitable activity becomes short-term and extreme short-term one, that it means unattractiveness of fixed capital investment. Such investments are impossible in the system of short-term horizon economic agents. At the same time in this system criminal activity can be gainful.

Two of the most harmful effects of the Russian "reverse gradualism" were "troubling of waters" and forming of short-term orientation of economic agents. These effects are interactive. "Troubled waters" were ideal for criminal activity; such activity, in turn, "troubles waters" in a more degree. So "reverse gradualism" in Russia generated catastrophic effects to fixed capital investment activity. The main channel of influence of these effects was criminalization of the economy. The profitability of criminal and semi-criminal actions implied non-profitability of fixed capital investment because of sharp distinctions in accompanying conditions (short/long time horizon, non-clear/clear legal framework, high/low level of uncertainty of the future etc).

But criminalization was harmful for fixed capital investment activity not only because of these listed forces (of "troubled/calm waters"). The second fundamental reason was the criminal origin of new private capital. Many Russian reformists believed in the Marx's theory of "primitive accumulation of capital". "Let them accumulate as they (new entrepreneurs)

like". According to the point of many Russian reformists, criminally formed private capital was much better than absence of private one. Reformists believed that new entrepreneurs will invest own criminal capitals in the Russian economy and, therefore, help both to transit to the market system and to begin economic growth. And then rich criminals will become honest (fixed capital) investors (Davydov, 1997).

It turned out that this conception is not true. Criminal origin of capital induced owner of such capital to invest outside the country where this capital was formed because that owner wants to conceal his (or her) crime from authorities of this country. This "law" is the main reason for the huge capital outflow from Russia during the transition to the market system. Annual capital outflow (in the 1990s) equaled about \$ 50 billions. Foreign financial and productive assets were the main (and very strong) competitor to Russian fixed capital for Russian investors. The glaring blunder of Russian reformists was creation of favorable conditions for the concentration of capital at criminal groups; for example, in 1997 in Russia domestic and foreign criminals possessed 55 per cent of capital and 80 per cent of voting stocks (Davydov, 1997, P. 116). As a result, those who wanted to invest in fixed capital, had no money, and those who had money (these people were criminals), did not want to make it.

In 1999 investment in Russian fixed capital was equal less than 25 per cent of its level in 1990 (and during the transition period R&D expenditures, according to the studies of Shmeljov (1996), fell by ten times). That collapse was much more awful than the American Great Depression. Such collapse, as I showed, was the effect of failed "reverse gradualism" which led to the "troubled waters" (high uncertainty, absence of clear legal framework, "short-termisation" etc) and concentration of capital at criminal groups.

6. Criminalization of the Economy and Monetary degradation in Russia

In developed countries (including new industrial ones) financial evolution takes place. This term means rising and spreading of new kinds of money (and quasi-money) and new financial practices. I mean liability management, securitization, off-balance sheet activities etc. As I will show in the Section 7, there is a positive interaction between financial evolution and economic growth. The former facilitates fixed capital investment activity, which, in turn, is the reason for the further development of financial system.

In Russia during the transition period there was monetary degradation. I use this term as a reflection of increase of primitive mediums of exchange and means of payment - cash, inter-enterprise arrears ("non-payments") and barter - and (relative and absolute) decrease of "advanced" kinds of money. The negative influence of such degradation on investment activity will also be shown in the Section 7. In this Section I

will describe criminal roots of monetary degradation in Russia.

The point is that criminalization needs "adequate" financing. Financing is "adequate" for criminal activity, if it allows to conceal outcomes of (criminal) transactions and makes more difficult of all calculation and accounting. In other words, such financing creates conditions for above-mentioned "fishing in troubled waters". Bank money is not good for it. But any new, "advanced" kinds of money and quasi-money (certificates on deposit, repurchase agreements etc) are bank money or are created by the financial institutions' activity. Therefore, to some extent, financial evolution disturbs criminal activity, because it makes all transactions "transparent" for the statistical services and tax authorities.

On the other hand, primitive kinds of mediums of exchange can help criminal groups to hide its actions.

a) Cash. Black cash ("chjornyj nal") is cash inflows and outflows which are not reflected in ("official") enterprises accounting. Such kind of financing is the simplest way to hide income from taxation. In Russia in the 1990s so-called "black cash" was widespread. The share of cash in the total Russian money supply increased in the 1990s (for example, in December of 1991 cash/M2 ratio was equal to 0.18, in December of 1993 it was equal to 0.36, and in October of 1998 it was more than 0.38). It is reflection of criminalization of the economy (Nesterov & Vakurin, 1995).

b) Barter. Barter is ideal means to conceal incomes. Under barter pricing is very muddle, and material things flows are reflected in accounting only partly (or not reflected at all). Multi-stage barter exchanges are based on "word of honor" and personal connections between enterprises top managers and very often unknowable for the other workers. (Makarov and Kleynner, 1997). So barter allows to hide from tax authorities and police enormous amount of wealth. The cases were known when managers of some Russian enterprises bought "Mercedeses", and at the same time "simple" workers could not get wage during the months. In 1996 in Russia barter financed 34-50 per cent of turnover of manufacturing enterprises, 70-80 per cent of transactions with raw, and 75 per cent of turnover of small businesses producing nonconsumption goods (Makarov and Kleynner, 1997, p.26). According to sociological interrogatories, in 1996 Russian firms financed 35-38 per cent of its transactions by barter (and only 17-23 per cent by bank money and 9-12 per cent by cash); the share of transactions financed by barter had risen in this year by 15 per cent (Klepach, 1997, p.45, 54).

c) Inter-enterprise arrears ("non-payments"). Arrears did the influence on criminalization through three channels. In the first place, mutual arrears between firms are not but specific kind of barter. In the second place, "non-payments" allowed enterprise-creditor to

delay tax payments. In the third place, rising of "bad" arrears induced firm-creditor to ask criminals to take debt principal and interest away from firm-debtor. In other words, in this last case, incentives to cooperation between firms and criminal groups appeared. Only in 1996 annual increase of inter-enterprise arrears was equal to 16 per cent (Klepach, 1997, p.54). In January of 1997 "mismatured" inter-enterprise arrears were more than 23 per cent of Russian GDP (Shmeljov, 1997, p.26).

Degradation of monetary system was both cause and consequence of criminalization of the Russian economy in the 1990s; the former was the reaction of financial sector on development of criminal tendencies; but such degradation, in turn, created conditions for intensification of these tendencies.

Monetary degradation (and especially barterization) was harmful for economic development and technical progress. It increased transaction costs - because the carrying-out of exchanges becomes more difficult - and reduced allocative efficiency (Makarov & Kleyner, 1997, p.33; Malahov, 1997, p.86). But, possibly, the main evil of monetary degradation was negative influence on fixed capital investment.

7. Fixed Capital Investment and Financial Development: Very Important Interaction

In orthodox macroeconomics the problem of financing fixed capital investment and economic growth is, unfortunately, not studied. Only some representatives of Post Keynesian Economics explored this question (Minsky, 1977, 1985, 1986; Carvalho, 1992; Pollin, 1994; see also Rozmainsky, 1995, 1996).

On the one hand, permanent expansion of investment possibilities increases enterprises demand for finance and induces banks and other financial institutions to search new ways to satisfy this demand. In these circumstances financial institutions try to escape from the central bank (reserve) control; to make it, these institutions create new kinds of money and financial practices (already mentioned liability management, securitization, use of credit lines etc). So banks and other financial institutions get the possibility to create money independently on central bank policies. Money supply becomes endogenous (Chick, 1992; Chick & Dow, 1988; Niggle, 1990, 1991; Rozmainsky, 1995; Nozdran and Berezin, 1993).

On the other hand, such financial evolution expands opportunities for financing expensive and long-term fixed capital investment. The financial barriers to investment projects weaken. The increase in the productive possibilities becomes quicker. The economy grows more rapidly. All this is the essence of mentioned interaction between economic growth and financial development.

The above-described story is about positive tendencies in economic and financial development. But negative tendencies can also take place. It is case of

Russia in the 1990s. I showed already how criminalization (induced by "reverse gradualism") generated both collapse of fixed capital investment and degradation of monetary system. The problem is that now even under the successful struggle with criminal tendencies investment fall and monetary degradation can interact and deepen each other. On the one hand, fall in investment will decrease demand for finance and, therefore, do not stimulate financial development. On the other hand, decrease in real (deflated) amount of financial sources (because of monetary degradation) will narrow possibilities for financing investment expenditures and, consequently, economic growth. Growth is impossible without sufficient financial resources, *without separation of finance* (financial sources of investment) *from savings* (Carvalho, 1992; Pollin, 1994) because otherwise for increase of investment it is necessary at first to increase savings; but owing to famous the "paradox of thrift" such increase will lead to output fall.

I mentioned already the data about a level of investment fall in Russia and about a monetary degradation measured by increase of share of cash in the total money supply. Now I would like to note that during the period of 1992-1995 the price level rose by 8,500 times, money supply (including cash) rose by 230 times (and cash rise was more than increase in the total money supply). The M2/GDP ratio was equal to 0.7 in 1991 (this figure is typical for industrial countries) and 0.1 in 1996 (Shmeljov, 1997, P.26). According to Shmeljov, the total money supply was less than aggregate money demand of the economy by 15-20 times. The quasi-money/total money supply ratio was equal to about 0.01-0.03 during all the transition period in the 1990s (in the developed countries now this ratio is equal to about 2/3). In other words, in Russia M2 and M3 were not created. Nozdran and Berezin (1993, P.39) believe that the reason for it is the investment collapse. I agree with this point of view. So we can see that combination of investment collapse and decrease of real (deflated) money supply (especially "advanced" kinds of money) was the reality in Russia in the 1990s.

During this period there was threat for Russia to get into dangerous "trap of absence of financial sources of growth". This trap is the part of or even the reason for the "trap of equilibrium at low level of income" described by Kornai (1994). Moreover, during all 1990s gross domestic output and investment fall in spite of the government's promises of "stabilization".

8. Conclusion

In this paper I tried to describe the essence and some negative consequences of shock therapy policy of transition to the market system. I called this policy "reverse gradualism" because in fact all reforms cannot be completed immediately (as the "philosophy" of shock therapy postulates); there is full realization of reforms with less duration; it is these reforms that should from economic point of view be last. For exam-

ple, privatization must be implemented only after creation of clear legal framework; and attempts to make both reforms simultaneously lead to situation when state enterprises are privatized without clear system of law.

So "reverse gradualism" increased uncertainty, instability and creates law chaos. All these phenomena generated profitability of short-term kinds of economic activity, first of all, criminal and semi-criminal "operations": stealing (for example, "appropriation" of state property by managers of state enterprises without state administration), illegal speculations, transactions with rights, privileges and licenses etc. Economic agents tried to "fish in troubled waters". Criminalization of the economy took place.

This process, in turn, had two adverse effects. In the first place, criminalization was inconsistent with long-term fixed capital investment activity. Criminalization "troubled waters" in a more degree; at the same time fixed capital investment projects can be executed only in the "calm waters" (clear legal framework, including clear property rights and duties of government; low uncertainty of the future; socio-economic stability etc). Many agents started to behave in the manner described by the concept of investor myopia. Furthermore, owners of criminal capital did not want invest it inside the country where they formed this capital (in order to hide crimes from police and tax authorities). Such criminalization generated huge capital outflow.

In the second place, criminalization required "adequate" financing, that is, financing which allows to conceal value of transactions from the government agencies (tax authorities etc). Such financing was provided by monetary degradation, i.e. spreading of primitive kinds of mediums of exchange - cash, barter and inter-enterprise arrears ("non-payments").

But fall in fixed capital investment and degradation of monetary system interacted and deepened each other. This interaction pushed the economy into the "trap of absence of financial sources of growth". The backwardness of such transitional economy from the developed industrial economies increased. That is why collapse in Russia in the 1990s was so huge. It was, to a large extent, a consequence of "unreasoned" "reverse gradualist" reforms in Russia in the 1990s.

And the echoes of these processes are beyond the 1990s! Let me give one example. The average age of equipment in the USSR and the US was equal in 1970 to 8.4 and 6.4 years respectively, in 1990 10.8 and 7.1. In 2004 the same variable was equal to 6 years in the US and 21 years in Russia (Fedotov, 2005). So, the resulted technological and financial backwardness together with higher uncertainty is perhaps one of the roots of adverse political and economic processes in Russia after reelection of Putin in 2012.

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Розмаїнський І. В. «Зворотний градуалізм», колапс інвестицій і грошова деградація в Росії в 1990-ті роки

У 1990-і роки російська перехідна економіка характеризувалася безліччю несприятливих економічних процесів, але найважливішими були два з них. Перший - тривалий і величезний спад виробництва і інвестицій в основний капітал. Другий - грошова деградація, що була збільшенням ролі примітивних засобів обміну і засобів платежу - готівки, неплатежів і бартеру - укупі з відносним і абсолютним зменшенням ролі «просунутих» видів грошей. Мета цієї статті полягає в поясненні взаємозв'язків між цими процесами. Основна ідея полягає в тому, що ці феномени генерувалися політикою шокової терапії, яка виявилася чимось на зразок «зворотного градуалізму». Останнє означає, що політика шокової терапії є миттєвим впровадженням усіх реформ, але не їх миттєвим завершенням. Якщо така політика здійснюється, то ті реформи, які логічно мали б бути проведені пізніше, реалізуються раніше із-за їх надзвичайно малої відносної тривалості. Це і відбувалося в Росії в 1990-і роки.

Ключові слова: градуалізм; інвестиції; грошова деградація; перехідна економіка; економічна теорія переходу; російська економіка.

Розмаинский И. В. «Обратный градуализм», коллапс инвестиций и денежная деградация в России в 1990-е годы

В 1990-е годы российская переходная экономика характеризовалась множеством неблагоприятных экономических процессов, но самыми важными были два из них. Первый – длительный и громадный спад производства и инвестиций в основной капитал. Второй – денежная деградация, представлявшая собой увеличение роли примитивных средств обмена и средств платежа – наличности, неплатежей и бартера – вкупе с относительным и абсолютным уменьшением роли «продвинутых» видов денег. Цель этой статьи заключается в объяснении взаимосвязей между этими процессами. Основная идея состоит в том, что эти феномены были генерированы политикой шоковой терапии, которая оказалась чем-то вроде «обратного градуализма». Последнее означает, что политика шоковой терапии является мгновенным внедрением всех реформ, но не их мгновенным завершением. Если такая политика осуществляется, то те реформы, которые логически должны были бы быть проведены позже, реализуются раньше из-за их чрезвычайно малой относительной длительности. Это и происходило в России в 1990-е годы.

Ключевые слова: градуализм; инвестиции; денежная деградация; переходная экономика; экономическая теория перехода; российская экономика.

Rozmainsky I. V. "Reverse Gradualism", Investment Collapse and Monetary Degradation in Russia in the 1990s

In the 1990s The Russian transitional economy was characterized by many adverse economic processes, but the very important are two of these ones. The first one was the long and biggest fall in output and fixed capital investment. The second was monetary degradation which is increase of primitive mediums of exchange and means of payment – cash, inter-enterprise arrears ("non-payments") and barter – and (relative and absolute) decrease of "advanced" kinds of money. The goal of this article is to explain interconnections between these processes. The main idea is that these phenomena were generated by shock therapy policy which is turned to be a something like “reverse gradualism”. It means that shock therapy policy is the immediate introduction of all reforms but is not immediate completion of all ones. If that policy takes place, logically later reforms are ended more early because of its extremely small relative duration! That was a case of Russia in the 1990s.

Keywords: gradualism; investment; monetary degradation; transitional economies; economics of transition; russian economy.

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ADAPTIVE ORGANIZATION – MANAGEMENT TOOL IN VARIABLE ENVIRONMENT

Problem Statement. Instability and uncertainty of the current market environment is becoming a major factor, without which the successful functioning of enterprises is impossible. Analysis of enterprises of Lugansk region shows that only those that were in the process of development of market relations restructuring to reflect changes in the conditions of their operation (such as diesel locomotive Lugansk, Stakhanov railcar plants) retained its activity. Other enterprises that were not promptly respond to changes in the external environment, are now in a state of deep crisis (such major engineering plants in the past as Lugansk machine tool, automobile assembly, for the production of crankshafts and other) [1].

In an increasingly unstable market environment the need for decisive restructuring of enterprise management systems, perfection of all management functions, including the organization, which as a function of management, must adjust to changing conditions, that is to be adaptive. The delay with the necessary reorganization is fraught with severe financial and economic consequences for any economic entities. A feature of the organization is that of all the functions of management, it is the most inert, since it is fixed in the production structure of the company, its management system, internal cooperation relations, distribution of powers, information flow, responsibility for results, etc. Any reorganization more than any other function of management associated with changes in technology, traffic flows, the development of new technology. In the development of the organization asks of enterprises dedicated to the many of scientific research and advanced global companies demonstrate many new organizational solutions that ensure the effective operation of enterprises in a changing environment.

However, in recent years we have seen a serious ideological paradigm shift in terms of understanding of environmental uncertainty. The fact that all the uncertainty inherent in a market economy, economists have noted yet in the 19th century, predicting the economy and business eternal struggle with it, but under uncertain market environment they were understanding as unknown future states of it. Such an understanding of instability explains the application of all the ways to know the future by means of mathematical analysis, forecasting, risk management, etc.

However, over the last 30 years, and especially now after the global financial and economic crisis, comes a different understanding of the uncertainty, not like uncertainty, and as chaotic. In this regard, once

again proved to be right, Peter Drucker, which established in 1985, the subsequent development of the market as "an era without laws" [2]. As part of this new paradigm is redefining the nature and organization of enterprises in a randomly changing environment, which determined the need for these issues reviewed in this article.

Analysis of Researches and Publications. Results of studies the organization of enterprises as a category, subject to adjustment to changing conditions of the market environment, highlights the many works of well-known western authors: W. Bridges, O. Toffler, M. Hammer and J. Champi [3; 4; 5]. Their followers in Ukraine and Russia O.V. Vasilenko, A.P. Gradov and B.I. Kuzin, A.A. Sadekov, A.M. Tkachenko and S. Tielin, focused on crisis management and management of sustainable development of enterprises in uncertain market environment conditions [6; 7; 8; 9]. An attempt to define a model of enterprise behavior in the process of self-organization is made in the article of G.S. Lihonosov [10]. The monograph of the author of this article [11] considered the methodology of adaptive activity. But all published works not yet reflect the new elements regarding the use of adaptive organization as an effective tool of management in changing environment.

The objective of the article is to considerate new elements regarding the use of adaptive organization as an effective tool of management in changing environment.

Presentation of the Main Material. Adaptive organization of the enterprise is an alternative to the practice of discrete reorganization, which always has retarded character, resulting in negative economic and financial results. Adaptive organizations differ:

- 1) constant monitoring of the operational environment of the enterprise;
- 2) parameterization of environment with the help of simple, but effective indicators: the volume of orders, market consumption, prices, etc;
- 3) adjustment of the existing organization when the parameter of environment reaches a certain value.

However, there are at least two major problems of an adaptive organization.

The first – is determined by the essence of the organization as a system category that displays only composition of elements of the system and the interaction among elements without forming their own idea of the quality of the organization. Good organization is the one in which the activity is effective, that is, the

goals are more or less achieved. But as soon as manifest negative results of operations: unprofitability, lower sales volumes, losing to competitors, organization, yesterday considered good becomes bad, as first proposed by one of the pioneers of a systematic approach to the management of W. R. Ashby [12].

The second problem is, in many it determined by the first, – it is not clear how to change the organization to increase the efficiency of the system, and this problem is not solved by all formed so far the theory of organization.

In contrast to scientific and technological progress, the results of which are material and have always manifested in the creation of new technology, today, especially in the development of IT technology, ways of improving the organization of both production and management are ambiguous and quite different for enterprises of mass, serial or single production of products and services. In some cases, has the advantage, for example, the subject specialization of production units, in others – technological and so on.

For decades, the progressive development of the organization considered the development of advanced experiences – especially foreign companies, in today's language – benchmarking. It was believed, who first successfully stepped into the future, and he is a role model. Thus, decades of development trends of the organization identified the experience of «General Electric», the Japanese «kanban» system, business process reengineering by M. Hammer and J. Champy, balanced scorecard planning by D. Norton and R. Kaplan, etc.

Companies are afraid to experiment in the sphere organization of its activity, and as a result the most of them replicated standard solutions. For example, enterprise management system by 90% presented the traditional linear-functional structures with a rare the inclusion of the target or the matrix elements.

Functionalism of today's control systems is a serious anachronism, even though he has a seemingly serious objective base. Enterprise management system is based on the principle: the goals are generating functions, and functions – executive bodies – service departments, bureaus, etc.

These systems, as experience shows, quite tough, functional service cling to their function and did not want to fulfill the emerging goals, although they appear with an accelerating rate. It generates inevitable internal horizontal conflicts, the resolution of which requires considerable efforts. Theory of organization recommends a timely response to the emergence of new goals by updating new features, giving rise to a process of restructuring the organizational structure, which is already in an updated form still remains mostly functional.

Thus, a critical goal of adaptive organization of enterprise management systems is to overcome the

functionalism. In practice, this means a departure from the strict regulation functions, rights, obligations and liability for their execution, and the transfer of all activities under the regulation aimed to solution emerging problems. We illustrate this simple circuit in Fig. 1, which shows that the level of the regulation of should decrease with the growth of the variability in the environment, while showing the equilibrium relations between regulation and self-organization, between the since olden times established principles of bureaucracy and adhocracy, as it the contrary, a departure from the rigid hierarchy to create a non-hierarchical teams, etc. This inevitably raises the role of self-organization. Regulation itself takes the form of the well-known management cycle, including the necessary set of functions. However, as actually running this cycle under conditions of uncertainty, illustrate the scheme in Fig. 2.

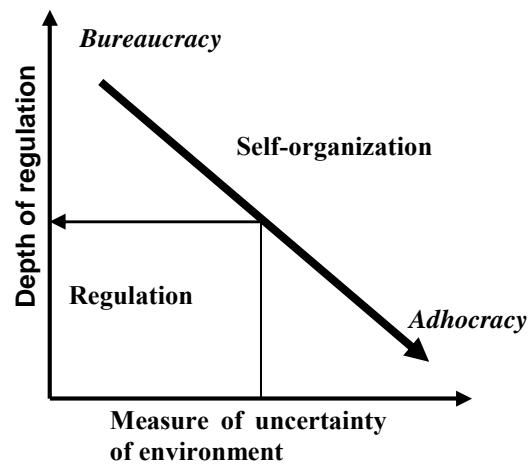


Fig. 1. Inverse relationship of depth of regulation in dependence of the measure of uncertainty of environment

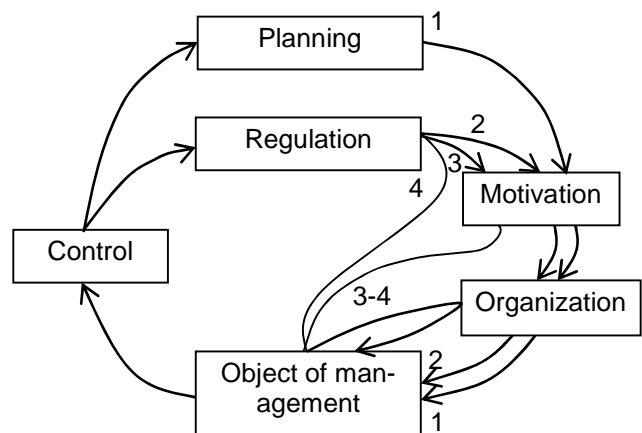


Fig. 2. The composition of the functions of management circuit depending on the uncertainty of environment

Only in a constant environment management is carried out on the basis of all functions: planning, organization, motivation, control and regulation. In unpredictable situations from this range of functions can fail planning, or organization, or motivation at the same time, sometimes only one good motivation supports the achievement of the desired result. When a managed object is left alone with the set task, what is the basis for its decisions: an accident, experience, luck? In any case, without specific self-organization in the object itself can not do. In the case of greater uncertainty of the environment the more responsibility must be transmitted to lower levels of management and production.

However, in the exaggerated functionalism is very difficult to do because of the resistance of the internal environment of the enterprise. Analysis shows that the units of the enterprises have varying degrees of its economic independence within the whole that demonstrated in Fig. 3, in which the forms of organization units ranked in order of increasing their level of independence.

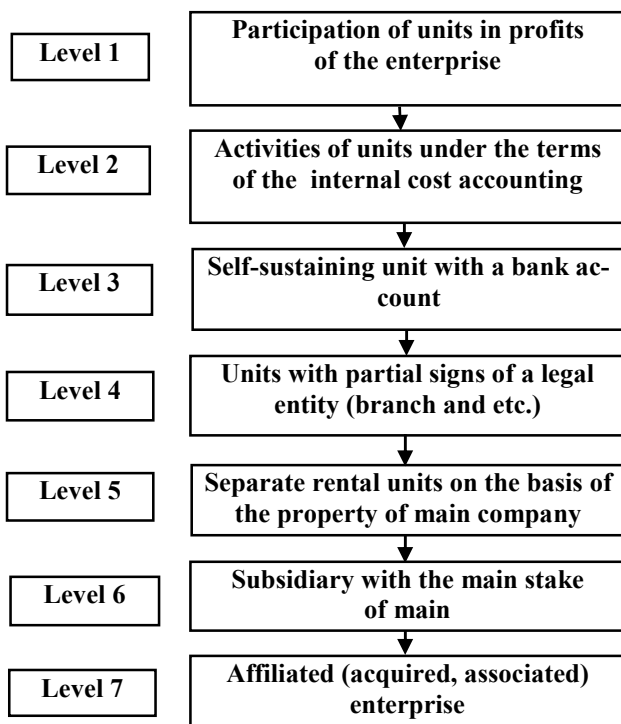


Fig. 3. Levels of independence of the units of enterprise

If external circumstances dictate, the will of business owners or management of the companies must be to reorganize the company on the basis of decentralization. Economic basis for this may be the presence of various structural business units (SBU) as parts of the company, working on their own market sectors. Then in the decentralization process earlier unitary enterpris-

es will reorganized into divisional, holding, outsourcing and network, as shown in Fig. 4.

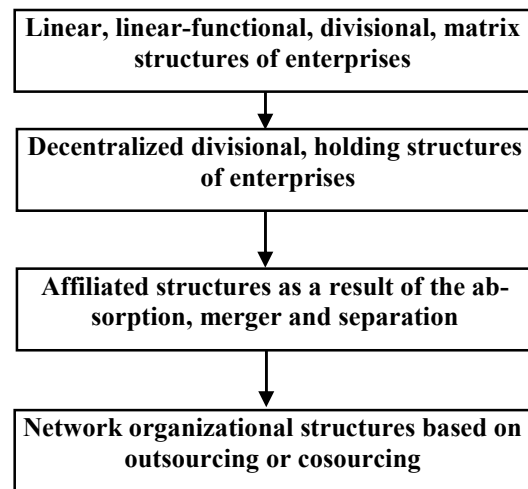


Fig. 4. The general trend of decentralization of organizational structures of the enterprises

Objective parameters for assessing the need for the next step in the decentralization of the company is the share that in common transactions of the enterprise (the upper curve of the graph displayed in Fig. 5) takes the unit (shown in the lower curve).

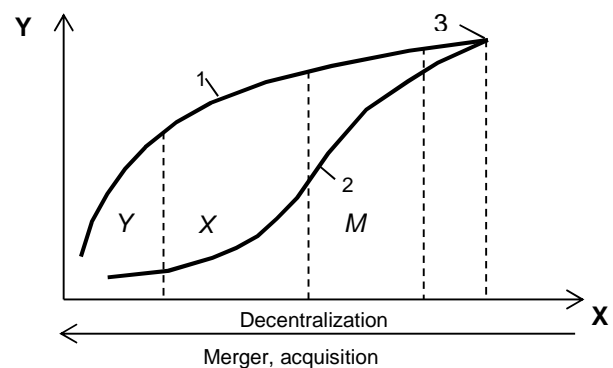


Fig. 5. Parameterization of solutions on reorganization of enterprises:

Y – the volume of transactions; 1 – variation of common volume of transactions; 2 – volume of transactions carried out by unit; 3 – the highest point of self-sufficiency of unit; Y – area of unitary enterprises; X – area of holding enterprises; M – area of divisional enterprises.

Demonstrate conducted with the participation of the author an example of separation from Lisichansk plant of rubber products (Lugansk region) the department for processing of rubber waste and turning it into a separate company while increasing its share in total transactions of the enterprise, associated with the purchase of raw materials and improving the technology of its processing, as reflected in Table. 1.

Table 1

Changes in the share of raw rubber processing department in the total amount of transactions of the plant and increasing the level of its economic independence

Phase	The main content of transactions and shares in it of plant (a) and department (b) in%				Conversion steps of the department
	Functions of the enterprise, a	Functions of the department, b	a	b	
1	Purchase of raw rubber	Participation in purchase of raw rubber	80	20	The shop within the enterprise
2	The sharp reduction in purchases due to lack of processing technology of tires with metallic cord	Self loading of the shop by external orders	30	70	The shop as leased enterprise
3	The termination of participation in the work of the shop	Development the technology of processing the tires with metallic cord, full self-sufficiency in raw materials and orders	0	100	Creation of a separate joint-stock company

Of course, that getting a parametric assessment of the unstable environment – this task becomes very important. But wrongly to consider uncertain and chaotic conditions as not to be evaluated. These are the signs of that an environment perceived as chaotic, has properties to self-organization, which is being the object of study of science synergetic. The object of synergetic, as the science of self-organizing systems, are undeniable, as it is believed that the phenomena that are perceived as a system were emerged in the process of self-transformation, when their former estate was considered as chaotic.

The current market environment is made under the influence of many unaccounted factors that can be considered as open, dissipative system, which is the object of study of synergy. Recent research in physics, biology, social sphere, and now in the economy show that instability – namely through chaotic system – prompts changes within her way asymptotic translating it into a new, relatively stable state. Such asymptotically stable stationary states which seek any open system, called attractors.

Attractors, in contrast to traditional research tools of social processes by mathematical analysis, programming and others differ by so important property as the invariance, i.e. independence from the previous state of the process. This property has very important ideological and practical importance, since through this attractors can be studied without the history of interpretation of massive processes, many factors that affect it, and only the stationary states in which they evolve.

Formally the evolution of such systems can be described for example by means of so-called Poincare maps, which is as follows:

$$X_{n+1} = F(X_n), \quad (1)$$

where X_n – coordinate crossing phase trajectory evolution of the cutting plane in the n -th moment of the time;

X_{n+1} – coordinate of phase trajectory crossing the cutting plane in the $(n+1)$ -th moment.

As an example, show in Fig. 6 fragment chart daily fluctuations in load of furnaces in the shop of the enterprise as a fragment of the usual diagram. To display the dynamics of loading of furnaces as a point mapping input data represented in the Table 2 in a form that meets the requirements of the creation the function (1).

According to data from the Table 2 display the point map of the process on Fig. 7, where the abscissa indicates the value of today, and ordinate – tomorrow, and so on, changing places. The resulting locus of evolution shows unstable process. If it was a constant, then displayed to a point at bissektrissa of quadrant, but in this case shows a decrease boot, revealing three points of time delay of the process of decline. These points are characterizing the attempts of internal self-organization of the system, which can not be called attractors, i.e. new stable states, to which it aspires.

As a highly successful example of an attractor show process of variable fluctuations in sales in a supermarket on weekdays, as presented in Table 3.

According to data of Table 3 the point mapping of process is shown in Fig. 8a, and averaging in the form of an attractor in Fig. 8b. The data of these attractors are the reliable tool for planning and organizing activities. Stability of the attractor tested for two years, that shows the graph in Fig. 9, where for two years only a few have changed the price parameters of the process, but steady state is preserved.

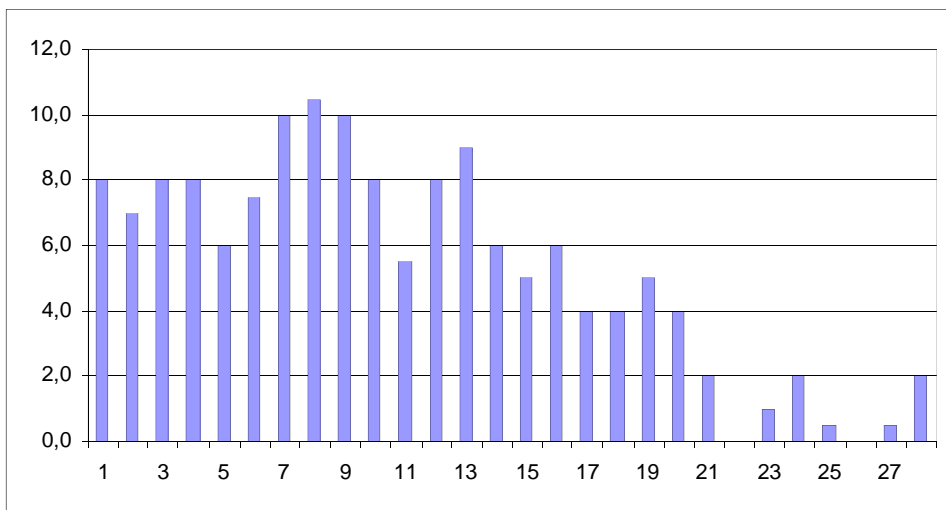


Fig. 6. Chart of download of furnaces

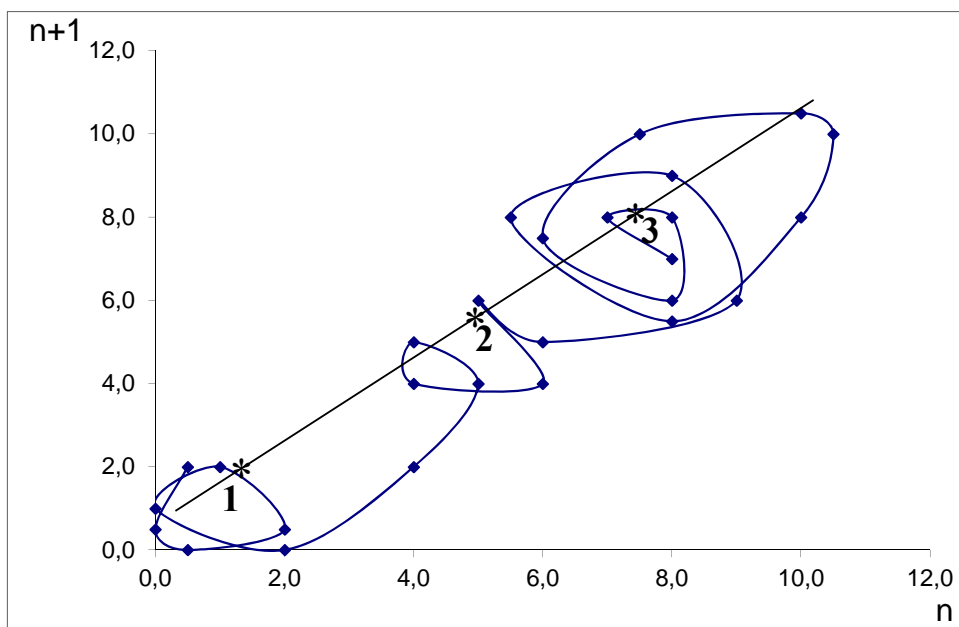


Fig. 7. The point mapping process of download of furnaces

Table 2

Data for point mapping process changes loading of furnaces

Point	n	$n+1$	Point	n	$n+1$
1	8	7	15	5	6
2	7	8	16	6	4
3	8	8	17	4	4
4	8	6	18	4	5
5	6	7,5	19	5	4
6	7,5	10	20	4	2
7	10	10,5	21	2	0
8	10,5	10	22	0	1
9	10	8	23	1	2
10	8	5,5	24	2	0,5
11	5,5	8	25	0,5	0
12	8	9	26	0	0,5
13	9	6	27	0,5	2
14	6	5	and so on		

Table 3

Data on the daily fluctuation in revenue in the supermarket (with respect to the lowest value taken for 1)

Weekday	Data on the daily fluctuation in revenue			
	1-st week	2-d week	3-d week	And so on
1. Monday	1,035	1,113	1,0	...
2. Tuesday	1,226	1,055	1,129	...
3. Wednesday	1,091	1,088	1,145	...
4. Thursday	1,162	1,124	1,117	...
5. Friday	1,188	1,29	1,296	...
6. Saturday	1,391	1,353	1,277	...
7. Sunday	1,262	1,033	1,06	...

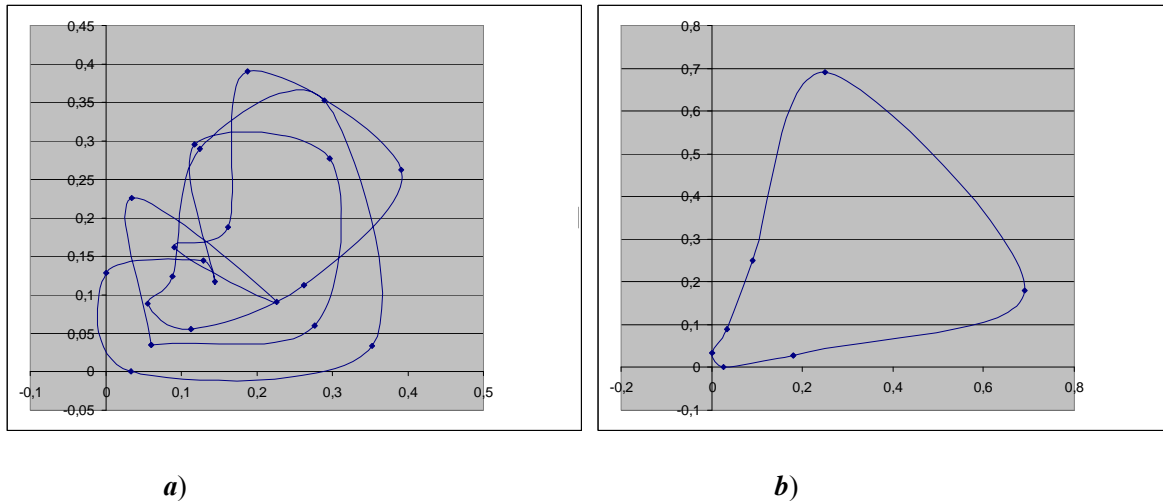


Fig. 8. The point mapping of attractor of self-organization process of consumption by weekdays:
a) point mapping of self-organization process of consumption by weekdays;
b) attractor towards which seeks the process of self-organization of consumption.

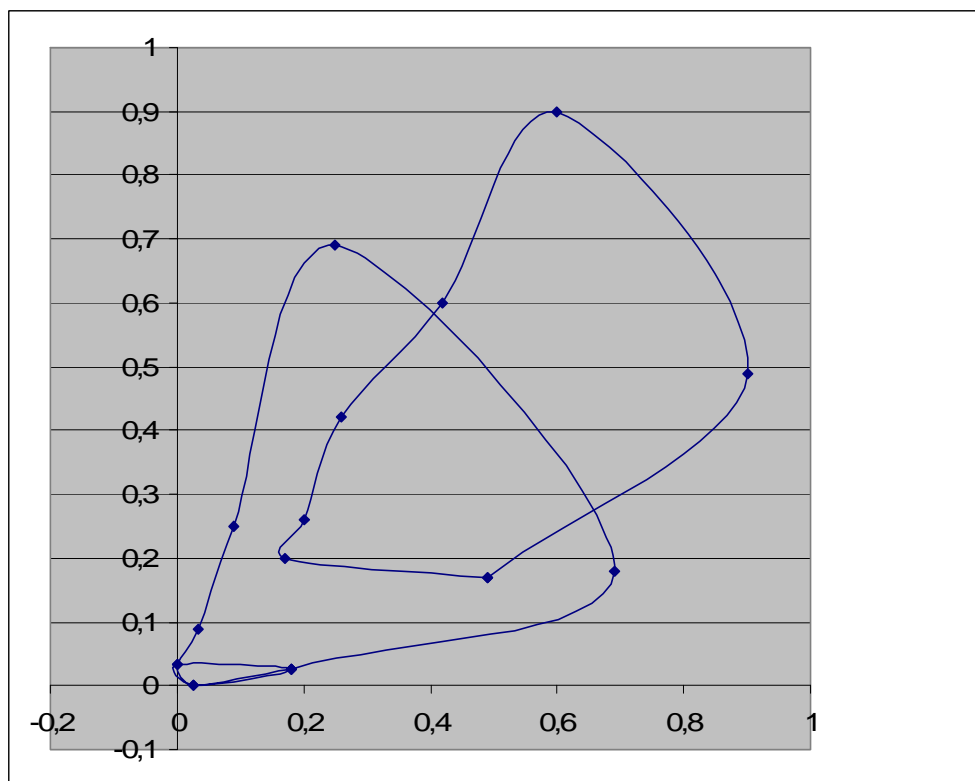


Fig. 9. The evolution attractor of daily sales on weekdays for two years

Such attractors rather accurately reflect the dynamics of consumption and in annual terms, by month of the year, certain groups of goods and the like, at the same time – without public opinion polls and other methods to determine the reasons for why variability of consumption has namely such character. The important thing is that the establishment of such attractors for future states of environment allows us to go from extrapolation to the interpolation parameters of the medium, that is more accurate.

Show in Fig. 10 as a stable attractor value of some general economic indicators of Ukraine compared with the average data of European countries, according to which Ukraine is far behind Europe in terms of domestic market share (DM) in total turnover, the share of small and medium-sized businesses (SB) in gross domestic income and wages (LW) at the same time, having the most taxes on business (Lt) than in European countries. Reduced in adopted Ukrainian budget for

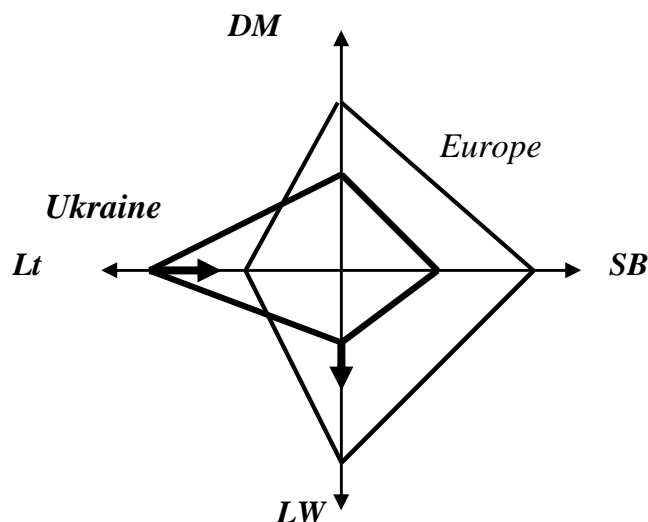


Fig. 10. Attractor sustainable ratio of macroeconomic indicators of Ukraine and Europe:

DM – share of domestic market in total turnover; *SB* – share of small and medium-sized businesses in gross domestic income; *LW* – level of wages; *Lt* – level of taxes on business.

2015 the rate of single social contribution on business while raising wages can move off the ground shown in Fig. 10 attractor towards the performance of European countries that will fully update base budgeting as a whole of Ukraine as within it up to planning the activity of individual enterprises.

Conclusion. Thus, adaptive organization of the company in the variable and chaotic environment in conjunction with its parameterization in the form of attractors of self-organization processes becomes relevant management tool in the conditions of today's market.

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Колосов А. М. Адаптивна організація – інструмент управління в мінливому середовищі

У статті розкривається поняття адаптивної організації як інструменту управління підприємствами в мінливому середовищі. В умовах все більш нестабільного ринкового середовища зростає необхідність у рішучій реструктуризації систем управління підприємствами, удосконалення всіх функцій управління, включаючи організацію, яка, як функція управління, повинна пристосовуватися до мінливих умов, тобто бути адаптивною. Основна мета адаптивної організації системи управління підприємствами є подолання її надмірного функціоналізму. Тому рівень регламентації процесу управління повинен знижуватися в міру того, як мінливість навколишнього середовища зростає. Це неминуче підвищує роль самоорганізації, як в процесі управління всередині підприємства, так і в хаотичних процесах у навколишньому середовищі. Зміна зовнішніх умов має формувати у власників бізнесу або керуючих компаній волю до реорганізації підприємства на основі децентралізації. Об'єктивним параметром для оцінки необхідності наступного кро-

ку в процесі децентралізації компанії стає частка, яку в загальному обсязі транзакцій підприємства виконує його окремих підрозділ. Поточне ринкове середовище формується під впливом багатьох неврахованих факторів, але в процесі самоорганізації воно рухається до відносно стійких станів, названих аттракторами. Формально розвиток таких систем можна описати за допомогою так званого точкового відображення Пуанкаре. У статті представлений досить успішний приклад аттрактора, який відображає процес самоорганізації коливань обсягів продажу в супермаркетах по днях тижня. Параметри подібних аттракторів формують надійну базу для планування та організації діяльності підприємства в мінливому середовищі.

Ключові слова: організація, адаптивна організація, інструмент управління, мінливе середовище, функціоналізм, децентралізація, самоорганізація, хаотичний процес, аттрактор.

Колосов А. Н. Адаптивная организация – инструмент управления в переменной среде

В статье раскрывается понятие адаптивной организации как инструмента управления предприятиями в переменной среде. В условиях все более нестабильной рыночной среды возрастает необходимость в решительной реструктуризации систем управления предприятием, совершенствование всех функций управления, включая организацию, которая, как функция управления, должна приспосабливаться к изменяющимся условиям, то есть быть адаптивной. Основная цель адаптивной организации систем управления предприятием является преодоление ее чрезмерного функционализма. Поэтому уровень регламентации процесса управления должен снижаться по мере того, как переменность окружающей среды нарастает. Это неизбежно повышает роль самоорганизации, как в процессе управления внутри предприятия, так и в хаотических процессах в окружающей среде. Изменение внешних условий должно формировать у владельцев бизнеса или управляющих компаний волю к реорганизации предприятия на основе децентрализации. Объективным параметром для оценки необходимости следующего шага в процессе децентрализации компании становится доля, которую в общем объеме транзакций предприятия выполняет его подразделение. Текущая рыночная среда формируется под влиянием многих неучтенных факторов, но в процессе самоорганизации она движется к относительно устойчивым состояниям, называемым аттракторами. Формально развитие таких систем можно описать в виде так называемого точеч-

ного отображения Пуанкаре. В статье представлен достаточно успешный пример аттрактора, который отображает процесс самоорганизации переменных колебаний объемов продаж в супермаркетах по дням недели. Параметры подобных аттракторов формируют надежную базу для планирования и организации деятельности предприятия в переменной среде.

Ключевые слова: организация, адаптивная организация, инструмент управления, переменная среда, функционализм, децентрализация, самоорганизация, хаотический процесс, аттрактор.

Kolosov A. M. Adaptive Organization – Management Tool in Variable Environment

The article argues the notion of adaptive organization as the tool for management enterprises in variable environment. In an increasingly unstable market environment the need for decisive restructuring of enterprise management systems, perfection of all management functions, including the organization, which as a function of management, must adjust to changing conditions, that is to be adaptive. A main goal of adaptive organization of enterprise management systems is to overcome the functionalism. Thus the level of regulation the management process should decrease when variability of environment is growing. This inevitably raises the role of self-organization as in management process within enterprise as in chaotic processes in environment. If external circumstances dictate, the will of business owners or management of the companies must be to reorganize the company on the basis of decentralization. Objective parameters for assessing the need for the next step in the decentralization of the company is the share that in common transactions of the enterprise takes the unit. The current market environment is influenced of many unaccounted factors, but in the process of self-organization it moves to relatively stable states called attractors. Formally the evolution of such systems can be described by means of so-called Poincare maps. Enough successful example of an attractor that show process of variable fluctuations in sales in a supermarket on weekdays is shown in the article. As a highly successful example of an attractor show process of variable fluctuations in sales in a supermarket on weekdays. The data of these attractors are the reliable tool for planning and organizing activities.

Keywords: organization, adaptive organization, tool of management, variable environment, functionalism, decentralization, self-organization, chaotic process, attractor.

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FORMATION OF METHODOLOGICAL SUPPORT ASSESSMENT OF NEOINDUSTRIAL MODERNIZATION

The beginning of the XXI century is the era of the rise of crisis tendencies, and as a result, many imbalances of economic development. The instability of the current economic model, which led to talk about the general crisis of capitalism has necessitated the development of new models of economic policy of the West. Reindustrialization is the concept of the new industrial policy, which focused on strengthening the industrial base of the economy on qualitatively new basis. It has become one of the measures to ensure the steady growth of national economies of developed countries and to strengthen their economic security within unstable global economy. As a measure of the new industrial policy of reindustrialization is seen mainly within political economy analysis, but detection of conceptual frameworks is beyond purely economic issues, and allows to correlate reindustrialization with modern modernization process [1; 2]. Modernization of developing countries, led to them formation of the neoindustrial economic base and model of society that is built the last one. This society has value and ideological installations inherent to developed modern. This caused a movement of industrial capacity of developed nations of the West to the newly industrialized countries with technologies of mainly 4th technological generation. The reduction of the industrial base at the expense of technologies of 3rd and 4th generations, "deindustrialization", was explained by the necessary of transformation of the economic foundation of society, within the period of development "after modern". In addition, the permanent scientific-technological revolution as a "driver" of socio-economic development began to shift from industrial to post-industrial areas, from the production of material goods to the production of information and services. The described changes have been conceptualized in post-industrial scheme of public transformation and in some way reflect a loss of material production role of its driving force.

However, "without such manufacturing - even modern, highly efficient, minimizing the use of human labor and material resources, but manufacturing - the state, even the most highly developed, can not rely on the fact that for a long period to retain the commanding heights of world politics and economy" [3, p. 31]. Post-industrial transformation of developed countries have not led to the formation of a sustainable model of crisis-free development; conversely, the need to over-

come further degradation and destruction of industrial infrastructure have arose. The solution to this problem is possible only within the framework of reindustrialization – a process which is a reproduction of a new industrial base of the economy and giving it the role of the driving force of economic and social development. Reindustrialization not imply the mechanical repetition of traditional industrialization, which was the driver of the former previous stages of the modernization: it is in fact the new wave of modernization that happens on a new long wave of scientific and technological progress. The development of high technology begins to make transformative effect on industrial and preindustrial manufacturing methods by improving their means. Analogies of this process can be found in the past when industrial development started making direct effect on the agricultural sector and other pre-industrial sphere through revolutionary upgrade of traditional tools and technologies. Thus, successful reindustrialization presupposes the existence of developed post-industrial sector in the economy. Technological groundwork created by this is a prerequisite for neoindustrialization, because allows upgrades based on the prevalence of high-tech industry. At the same time, post-industrial transformation does not necessarily imply neoindustrialization in its historically specific forms – as a new industrial policy of developed countries, which carried out within the framework of their national economies. In the presence of an open world globalized economy postindustrial progress can go to any place in the world which has developed industrial base. However, the new wave of modernization has great opportunities to realize where the previous one is completely finished; the process of de-industrialization is actually a historical precondition for the "new industrialization".

Consideration of neoindustrialization as a phenomenon that occurs primarily within national economies, requires ascertaining of some contradictions between its ideology and the ideology of globalism. First of all, unlike globalization, neoindustrialization has a subject: it is the state that conducts a deliberate policy of not return of lost industry, and creation of a new one. The literature stands out a range of measures of industrial policy, as wide (import, export support, increase of credit resources, reform of the tax system) as well sectoral [4, p. 27]. There is another contradic-

tion, also. This contradiction is between active role of the state, which involving the creation of optimal conditions for its industry, and the principles of free market and international competition.

The very existence of such contradictions shows that the ideology of reindustrialization has significant differences from the old liberal ideology of industrial modernization in the West. Inherent in it ideologemes of open borders, free markets and the rejection of protectionism contribute to the establishment of a global economy which frameworks make modernization waves are not confined within national economies and facilitating the movement of capital and industries where this created the best conditions. On the one hand, overcoming deindustrialization, which became one of the consequences of globalization entails the partial rejection of liberal ideology. But on the other hand – the reproduction of production potential once deindustrialized countries is essentially a manifestation of the same logic that once led to deindustrialization: a capital moves followed by favorable business. At the same time there are some differences between modern neoindustrialization or reindustrialization and the socialist model of traditional industrial modernization: the active role of state in the "new industrial policy" is not imply centralized planning the modernization process in all various of its manifestations. Despite the focus on the "closure" of production chains within the national economies, the talk about withdrawal of neoindustrialized countries from the network of world economic relations which have developed in the global capitalist economy does not occurs.

It seems that specifying sign of ideology of neoindustrialization can be described with the words of Daniel Bell "subordination of economic function to social objectives" [5, p. 22]; and this is also a contradiction with the ideology of globalism, which opposes "the imperialism of economic component" to social policy [6, p.24]. Deindustrialization has played a negative role in the ability the states to fulfill their social obligations, that is why aims and objectives of a social nature can not fail to be taken into account when developing the new industrial policy from now. In this context positive social effects of neoindustrialization include: increased employment, increased incomes, improvement of the business climate, budget support of different areas across the financial capacity of the state and so on., which greatly increased. At the same time, as A. Andreev notes, "the successful implementation of industrial policy becomes a cause of social problems itself" [4, p.28]. Thus, the new wave of modernization which is related to neoindustrialization leads to increase in labor productivity and, as a result, dismissal of the traditional industrial workers. The change in the structure of employment and the development of new types can be a one way to solve the contradiction between the creation of new jobs and layoffs due to the

modernization of manufacturing. The coincidence of industrialization with new post-industrial shifts allows to use postindustrial type of employment in industrial manufacturing: industry that do not require a large number of employees, may be formed on the basis of some innovative technologies and development, or even individual manufacturing functions. Thus, the development will boost small and medium-sized industrial business, which can be the bearer of such values as freedom of entrepreneurship, private initiative, the ability to succeed at their own competencies and others. The former traditional industrial modernization led to the establishment of state-monopoly capitalism, then turned to deindustrialization and gradually washed away social base of such values. However neoindustrialization able to contribute to its strengthening, despite the increased role of the state as regulator and supervisor of economic and social processes.

«The industrialization of the XIX-XX centuries, which experienced all the developed industrial countries (even as recently said – highly developed countries), the phenomenon is more or less clear: the extra-human and extra-animal energy (the coal and steam, the oil and internal combustion engine, electricity with current that running through the wires); metal, machinery, machine tools, parts, unearthly engines; mechanized factories, mines; partial worker, who also is an appendage of the machine, machine tool, line, conveyor; machinist, mechanic, technician, engineer; self-propelled land, water and air transport; railways, highways, airports, underground and elevated metro; wired and wireless communications; large industrial or with the industry, or simply industrially equipped city; industrialized agriculture. The equipped industrial living space, industrial and lifestyle related and industrial landscapes correspond to the industrialization. Nice and all welcomed industrial revolution with the industrial revolution of all earthly existence: from nature to nonnature, from natural to art, from naturalty to artificiality!

There is harder with neoindustrialization, because, on the one hand, it is continued industrialization, and with another - its negation. Considering with negation together, not only in terms of conservation of all, or nearly all, or just a lot of industrial - as the basis of (positing), but also in terms of additions for already old industrial by qualitatively new industrial, which is already not quite industrial - not metalline, not machinine, not heavy, not weight not visible - namely, chemical, biological, microworld, countably informational, automatic, timeless, spaceless, unearthly (cosmic) megaworld, already largely extra-human (instead-human). A sort neoindustrial industry, or may be, at least in part of its - and simply neoindustry, but rather - "technation" technologism, technum. And it so happened that in the last quarter of XX century highly industrialized countries have definitely move on to

neoliberalism which was presciently named even post-industrialism, which, in general, is correct, but in conjunction with the reality still is not quite, because the industry has remained, and post-industrialism have enough of industrialism – the common to the whole of the industrial age, not only the "iron" industrial age. And in the early XXI century it became quite clear that the advanced countries have become countries with a powerful post-industrial neo-industrial moment.

The USSR clearly missed its large-scale neoliberalization in its recently. Of course, something was, but not widely, not volume, not sequentially. It was possible even to plan industry, but ne industry, its creation – already no. This is wrong world, this is not planned, because it is very much closed, unknown, undefined, independent, willful, capricious, and even insidious. It was possible to design it, at least for target-posed funding and incentive, but it was no one to do it for, because scheduled agents - is not agents at all, they are only artists, but the great initiators are required here, that is not so accountable servicemen as their own acting agents, which was not exist, as it was no an effective self-organization at the bottom coupled with an innovative initiative from below, because all this was foreign for the total planned system, and it could not to adjust itself to the stimulative design, and... could not. The "plan - planning - planning" dogma won the reality, which required only orientation-assisting design at the top, and a great creative activity of all possible neoliberalization agents that seem to have been technically, but was not economically, at the bottom. As a result, the country was left without the necessary neoliberalization, and then, without a lot of industrialism, as the result of the "reforms" of the 1990s - both died in accordance with "say-so" from above and do not withstand the competition from the outside - from abroad. And what is today? And today, the problem of self (a) neoliberalism, and possibly that with some recovery of industrialism, faces just before the country at least for the sake of national security.

Is not to say that we have no our neoliberalism, that all of it is borrowed, but it can be certainty said that it is clearly not enough, and not so for the reproduction of this being, as for its all-round development, but not in breadth, not quantified as it was under industrialism, but depth and quality - as it should be under neoliberalism. Now it is important not so equip society industrial base, although its quality improving is expected, as to equip a society of new techno-technological system, which qualitatively changes the whole way of life, not only in the direction of its intellectual and the operational complexity, but also in the direction of its economy, and about the nature and most human. Do not limitless consumption of man and nature, but their full savings - with a parallel attaching to being of an existential responsibility,

behavioral modesty and vital proportion. Neoliberalism - is not mere material and technical facilities update, and this is not only update the material and technical bases of life, this is also the renewal of man, of his consciousness; society and its organizations; culture, and its formal expression; civilization, and its mechanism. Neoliberalism – is essential (and even essential) changes in the outlook, in categorical equipment of knowing, meditating, and displays projecting intelligence, in discourses, in languages, in communications, in sociability (net-like, netium), as well as, of course, in the man as in the subject of being (human-computer instead of just a human; computer-human instead of just a computer). Hence the indispensable novelties in the upbringing, education, enlightenment, formation of the person and his personal world, already least of all socially sustainable - closed-cell, family, collective, but above all individnyh, stand-alone, atomic, but, nevertheless, very mobile. One way or another, but neoliberalism - is another part of being, additional, riser, but also advanced, leading, influential, if not dominant.

The pure intellect with free intellectualism owned a special place in the neo-industrial society-netium. Life, management, organization, updating - now it is a big intelligence-game in which the main prize is... this very game! Something like a modern cosmopolitan football, but just without terrible dimensionless fees. All the same who all the same where, all the same for which - if only the process-game - continuous and entertaining! Neoliberalism against not only tradition, but also of any permanence. It against all the bases, bases, roots and attachments. All the same which one - the Fathers, "native", regional, country, folk, national, continental, and even the earth. Like it to someone or not, but neoliberalism – is a sort of sub-system is not only the highest, but also... high anti-system - corrosive, facilitating and devastated the existence of any stable, although it parasite need. Neoliberalism is so creative in virtual-intellectual sphere, as so destructive in real-life. Neo-industrial revolution - albeit a need and an inevitable measure, but at the same time and quite a dangerous game - a life and death! Neoliberalism has more death than life! That is why there needs understanding, discernment and anxiety, leading to control and curb neoliberalism: neoliberalism leads to the final alteration human posthuman, and society posthuman mass. Neoliberalism – perhaps, without knowing, – involuntarily calling out to the instinct of universal security, which able to realize itself within the framework of reasonable neo-industrial policy.

Neo-industrial policy can not fail to include not only incentives of neoliberalism, but also and control over it. In general - a holistic comprehensive regulation by the responsible for the human survival regulatory center. Neo-industrial imperialism, not to men-

tion fascism - not only virtual, but very real possibility! That is why the need comes up as a tactical developing neoindustrialism as its strategic sequencing, even limiting, central dirigisme, and in this particular case – neodirigisme. Neodirigisme – is the dirigisme of era of neoindustrialism: flexible, discrete, motivating, game (something like a referee at a football field). This is dirigisme, combined with neo-liberalism, which, unlike the industrial liberalism, is no stranger to some self-

restraint and do not reject limits and guidelines given by dirigisme» [7].

For each stage of modernization we defined a set of indicators, the share of which is universal, and their reference (standard) values (Tab. 1). Reference values for indicators modernization vary depending on the stage of modernization, the assessment of which they are used.

Table 1

The indicators of assessment of modernization stages and their reference values

The indicator's name (specification of used parameter)	Reference value		
	industrial modernization	post-industrial modernization	neoindustrial modernization
Economic indicators			
Gross regional product (GRP) per capita, UAH.	34746,57 ¹	200000 ²	200000
The share of value added in agriculture in GRP, %	15 ³	x	x
The share of value added in services in GRP, %	45	x	72
The share of value added in the material sphere (the share of agricultural and industrial added value in GRP), %	x	28	x
The share of people employed in agriculture, %	30	x	x
The share of employment in services, %	x	x	72
The share of labor in the material sphere (the proportion of people employed in agriculture and industry), %	x	28	x
The share of recycled waste	x	x	100
Social indicators			
The share of urban population (urbanization level), %	50	78	78
Medical services (number of doctors per 1,000 inhabitants), ‰	1	3	3
The infant mortality rate (number of deaths per 1000 live births), ‰	30	2	x
Life expectancy, years	70	79	79
Indicators of knowledge and innovation in knowledge			
The level of literacy among adults, %	80	x	x
The share of persons with secondary education (the proportion of students in secondary schools, the population of the corresponding age), %	x	100	x
The share of people with higher education (the proportion of students receiving higher education among the population of the relevant age), %	15	67	67
Financing innovation in knowledge (the cost to R&D and GRP), %	x	3	3
The human contribution to innovation in knowledge (the number of scientists and engineers in R&D underemployed, population 10,000), people.	x	50	x
Patents for innovation in knowledge (the number of people that apply for patents per 1 million. Inhabitants), people.	x	774	774
The prevalence of the Internet (the number of Internet users per 100 inhabitants), people.	x	70	70
the proportion of those who raised the qualification and got a new profession	x	x	25

x – the indicator is not used for the estimation of modernization stage.

¹ The default value is accepted at the level of 6399 USD for 2000. In these calculations, the default value provided by NBU is 5.43 UAH to 1 USD for 2005.

² In determining the arithmetic mean of the indicator used values of the United Kingdom, Germany, China, Italy, USA, France and Japan for the correspondent year. Source: Organization for Economic Co-operation and Development / www.oecd.org. - 2013. - Access: http://stats.oecd.org/Index.aspx?datasetcode=SNA_TABLE4.

³ This and other default values suggested by the authors of The Overview report [8].

All indicators are divided into two groups - stimulants and destimulants. Stimulants (positive indicators) – are indicators, the increase in which value accelerates the modernization. The inverse indicators (destimulants) are indicators which values are holding back growth processes of modernization. The destimulants of industrial modernization is the infant mortality rate, the proportion of value added and employment in agriculture; for post-industrial modernization – this is the infant mortality rate, the proportion of value added and labor in the material (industry, along with agriculture) sector. All other indicators are stimulants. Destimulants are not used for calculating and integrated the modernization.

Each indicator is weighing by comparing it to the baseline (standard) value. Weighing of indicators carried by the formula:

a) for positive (stimulants) indicators:

$$I_i = (RV_{IND} / BV_{IND}) \times 100 \quad (1)$$

b) for inverse (destimulants) indicators:

$$I_i = (BV_{IND} / RV_{IND}) \times 100 \quad (2)$$

where I_i – is development index of the i -th indicator;

RV_{IND} – real (actual) value of i -th indicator;¹

BV_{IND} – basic (standard) value of i -th indicator.

For industrial modernization $i = 1 \div 10$; post-industrial modernization $i = 1 \div 16$; for integrated modernization $i = 1 \div 12$.

The indices indicators groups and index of integral stage of modernization are defined after indicators weighing. Indices of the industrial and integrated modernization are based on three groups of indicators, indices of post-industrial modernization - are based on four ones. The formula used to modernization indexes is as follows:

a) for post-industrial stage of modernization:

$$I_{PM} = (I_K + I_{KT} + I_{LQ} + I_{EQ}) / 4 \quad (3)$$

where I_{PM} - postindustrial modernization index;

I_K – knowledge innovation index ($I_K = \sum I_i/3$, $i = 1 \div 3$);

I_{KT} – knowledge transfer index ($I_{KT} = \sum I_i/4$, $i = 4 \div 7$);

I_{LQ} – life quality index ($I_{LQ} = \sum I_i/5$, $i = 8 \div 12$);

I_{EQ} – economy quality index ($I_{EQ} = \sum I_i/4$, $i = 13 \div 16$);

b) for industrial and integrated modernization:

$$I_{IM} = (I_{EI} + I_{SI} + I_{KI}) / 3 \quad (4)$$

where I_{IM} – industrial / integrated modernization index;

I_{EI} – economic indicators index ($I_{EI} = \sum I_i/4$, $i = 1 \div 4$);

I_{SI} – social indicators index ($I_{SI} = \sum I_i/4$, $i = 5 \div 8$);

I_{KI} – knowledge indicators index (for industrial modernization $I_{KI} = \sum I_i/2$, $i = 9 \div 10$; for integrated modernization $I_{KI} = \sum I_i/4$, $i = 9 \div 12$).

The industrial and post-industrial stage of modernization comprises the following phases of evolution: beginning, development, prosperity and the transition to the next stage of modernization. The instruments used to determine the stage of modernization phase involves the use of indicators of relevant stage only. The result of the final assessment is the total indexes and integral values of phases of each modernization stage. Indicators of industrial modernization phases are shown in Tab. 2, postindustrial – Tab. 3. Phases and phase values of integrated modernization are not considered.

Table 2

Classification of phases and values of the signal indicators of the industrial modernization

Phase	The ratio of value added in agriculture to GRP	The ratio of value added in agriculture to value added in industry	The ratio of agricultural employment to total employment	The ratio of agricultural employment to industrial employment
Transitional phase	<5%	<0,2	<10%	<0,2
Blossoming phase	≥5%, <15%	≥0,2; <0,8	≥10%, <30%	≥0,2; <0,8
Development phase	≥15%, <30%	≥0,8; <2,0	≥30%, <50%	≥0,8; <2,0
Initial phase	≥30%, <50%	≥2,0; <5,0	≥50%, <80%	≥2,0; <5,0
Traditional society	≥50%	≥5,0	≥80%	≥5,0

The following values assigned for each phase of industrial modernization: traditional society – 0; initial phase – 1; development phase – 2; blossoming phase – 3; transitional phase – 4. The calculation of the development phase of industrial modernization (P_{IM}) is carried out by the formula:

$$P_{IM} = (V_{VAA} + V_{VAA/VAI} + V_{EA} + V_{EA/EI}) / 4, \quad (5)$$

where V_{VAA} – phase set value determined based on the ratio of value added in agriculture (0÷4);

$V_{VAA/VAI}$ – phase set value determined based on the ratio of value added in agriculture to value added in industry (0÷4);

V_{EA} – phase set value determined based on the share index of agricultural employment in the total employment structure (0÷4);

¹ In this calculations, the publishing of The State Statistics Service listed on the website under "Publications" "Regional Statistics" and printed sources [10, 11] was used as sources of the real (actual) indicators. Access: <http://www.ukrstat.gov.ua>

$V_{EA/EI}$ – phase set value determined based on the ratio of employment in agriculture to employment in industry ($0 \div 4$).

Table 3

Classification of phases and values of the signal indicators of the post-industrial modernization

Phase	The share of value added in the material sphere	The share of employment in material sphere
Blossoming phase	<20%	<20%
Development phase	$\geq 20\%$, <30%	$\geq 20\%$, <30%
Initial phase	$\geq 30\%$, <40%	$\geq 30\%$, <40%
Preparatory phase	$\geq 40\%$, <50%	$\geq 40\%$, <50%

The following values assigned for each phase of post-industrial modernization: initial phase - 1; development phase - 2; blossoming phase - 3. The calculation of the development phase of post-industrial modernization (P_{PM}) is carried out by the formula:

$$P_{PM} = (V_{VAMP} + V_{EMP}) / 2, \quad (6)$$

where V_{VAMP} – phase set value determined based on the real value added of material production ($0 \div 3$);

V_{EMP} – phase set value determined based on the real rate of the share of employment in material production in the structure of total employment ($1 \div 3$).

The index of industrial or classical modernization represents a progress of socio-economic system in the transition from an agrarian to an industrial-type of manufacturing. There is a departure from primitive forms of manufacturing, which developing primarily in the areas that provide the extracting, primary processing of resources and require workers with low qualifications. The manufacturing of a wide range of pre-defined products that provide increasing skills comes instead of extraction of natural resources.

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Жихарева Ю. І., Котов Є. В. Формування методології оцінки підтримки неоіндустріальної модернізації

У статті розглянуто поняття реіндустріалізації, умов її виникнення, існування та переходу до поняття "нової індустріалізації". Виявлено позитивні соціальні ефекти неоіндустріалізації, умови розвитку дрібного і середнього промислового бізнесу. Для кожної стадії модернізації визначено набір

індикаторів. також формули зважування цих індикаторів та інтегральні значення фаз кожної стадії модернізації.

Ключові слова: реіндустріалізація, неоіндустріалізація, неоіндустріальна модернізація, інтегральна модернізація.

Жихарева Ю. В., Котов Е. В. Формирование методологии оценки поддержки неоиндустриальной модернизации

В статье рассмотрено понятие реиндустриализации, условий ее возникновения и существования и переход к понятию «новой индустриализации». Обнаружены позитивные социальные эффекты неоиндустриализации, условия развития мелкого и среднего промышленного бизнеса. Для каждой стадии модернизации определен набор индикаторов, а также формулы взвешивания этих индикаторов и интегральные значения фаз каждой стадии модернизации.

Ключевые слова: реиндустриализация, неоиндустриализация, неоиндустриальная модернизация, интегральная модернизация.

Zhykhareva Yu. I., Kotov E. V. Formation of Methodological Support Assessment of Neoindustrial Modernization

In the article the concept reindustrializatsiyi, the conditions of its occurrence, existence and transition to the concept of "new industrialization". The positive effects neoindustrializatsiyi social conditions of small and medium industrial businesses.

For each stage of modernization of the defined set of indicators formulas weighing these indicators and integral values of phases each stage of modernization.

Keywords: reindustrialization, neoindustrial economic, neoindustrial modernization, integrated modernization.

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NEW CONCEPT OF SUSTAINABILITY AND SCANDINAVIAN COUNTRIES' SUSTAINABLE DEVELOPMENT POLICY

Sustainability has been a burning issue for all times. As an abstract concept it is relative to all spheres of human development and existence. This notion is of primary importance for everyone: scientists, politicians and common citizens. However, the stakeholders are still looking for the reliable ways to reach sustainability in practice.

The following set of events can be mentioned as milestones in understanding sustainability. In the early 1970s J. Forrester and Donella H. Meadows created the background for its modern vision. J. Forrester was the first who raised and empirically proved a concern that the economic growth is limited by natural resources availability thus, from his point of view, the environmental factor can't be ignored in the modern economy [1]. A little bit later active discussions were focused on the paper "The Limits to Growth: a Report for the Club of Rome's Project on the Predicament of Mankind" written and presented by Donella H. Meadows [2], where the new vision of growth in a strong connection with the environmental factor was presented.

These papers tuned the attention of the world society to the new issue: how to use natural resources effectively to be less harmful to the environment and to extend the limits of growth. It was recognized that unlimited growth and sustainable economic development could be reached due to such factors as human knowledge, innovative technologies and resources substitutes.

The first and the most important step towards the new concept of sustainability formation was done at the United Nations Organization conference on the Human Environment at Stockholm in 1972 [3]. It was stated that sustainable development should be based on harmonious development of three pillars: economic, social and environmental. Almost two decades later, in 1992, the contemporary concept of sustainability was eventually formulated at the United Nations Organization conference on Environment and Development and, thus, recognized by the world community [4]. It was agreed that "human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature"

[4]. This is the assumption we operate with in this research.

It is also verse to mention the outcome document for Rio+20 United Nations Conference on Sustainable Development hold in Rio de Janeiro in 2012, entitled "The Future We Want" [5], where "a firm foundation for social, economic and environmental well-being is provided" as UN Secretary-General Ban Ki-moon said [6]. The document calls for a wide range of actions to go forward to the sustainable development of the world society.

The case for our research into the nature of a sustainable development was the pioneering experience of the Scandinavian countries who were the first to change the policy direction according to the ideas that appeared as early as in 1974.

The study is to answer the question: how effective has the Scandinavian countries' sustainable development policy based on the new concept of sustainability been?

In our essay we will first cover the main guidelines of their policy and dwell on its specific features. Then we will attempt to prove this policy effectiveness by demonstrating the dynamics of key indicators in three main domains: economy, society and environment. We will conclude with comparing the sustainable development policy results with the relevant indicators in three main domains of European countries development to prove the effectiveness of this policy to be followed and disseminated.

To ensure the reliability of our research we have regarded the following official documents: the Declaration of the United Nations Conference on the Human Environment (1972) [3], The Nordic Environmental protection Convention (1974) [7], Rio Declaration on Environment and Development (1992) [4], Press Release of Rio+20 United Nations Conference on Sustainable Development [6]; figures from The Global Competitiveness Report 2012-2013 (2012 World Economic Forum) [8], Human Development Report 2013 (the United Nations Development Programme) [9], indicators devised by Yale University [10] and data of The World Bank [11-14].

So let's begin with an overall snapshot. Nowadays Scandinavian countries are the prime example of countries with socially oriented economy based on the integrity of market economy and strict system of state regulation. But their phenomena we see in the fact, that they were the first among European countries who recognized "the urgent need to protect and improve the environment" [7] to reach sustainability in development and convinced their will in the frame of the Nordic Environmental Protection Convention commitment [7]. This particular decision determined precisely their leading position in the coming future in comparison with the world society which realized the necessity of caring attitude to the environment almost twenty years later [4].

The basic peculiarities of their policy are [15]:

- growing state governance role;
- high social responsibility of business;
- strict fiscal policy (multilevel system of tax rates, which depends on the level of individual income revenue);
- protection and support of domestic producers by subsidizing such spheres as (agriculture, industry, energy, shipbuilding, health service, ecology and science);
- foreign direct investments "filtering";
- strict government control over environment protection;
- power engineering development (based on energy conservation technologies);
- financing of research efforts to develop new energy conservative technologies;

emphasis on energy conservative and improved extraction technologies;
 protection of forest and water resources.

Thus the economic policy of Nordic countries is focused on the following directions: decreasing of anthropological burden on the environment, the control of ecological standards maintenance in activity of enterprises and increasing the level of energy saving due to the new innovative technologies introduction [15].

So let us now look at how this policy results in basic indicators of three main domains of countries sustainable development.

We have analyzed figures in dynamic from the starting point of Scandinavian Countries' Sustainable Development Policy (from 1974 and till now). Moreover, we compared them with the world and the European Union average to show the visible progress and the effectiveness of the policy.

In economy we have taken into consideration as a key indicator GDP per capita [11]. At Figure 1 we can observe steady growth of this indicator with insignificant fluctuation from 1974 until 2008. During that period GDP increased significantly, but the most impressive rates of its growth were demonstrated since 2001 till 2008. At the time of economic crises the indicator naturally dropped, but after 2009 we again observe its upturn. It gets clear from table 1 that GDP per capita of Scandinavian countries has been exceeding the EU's and the world average the whole investigating period.

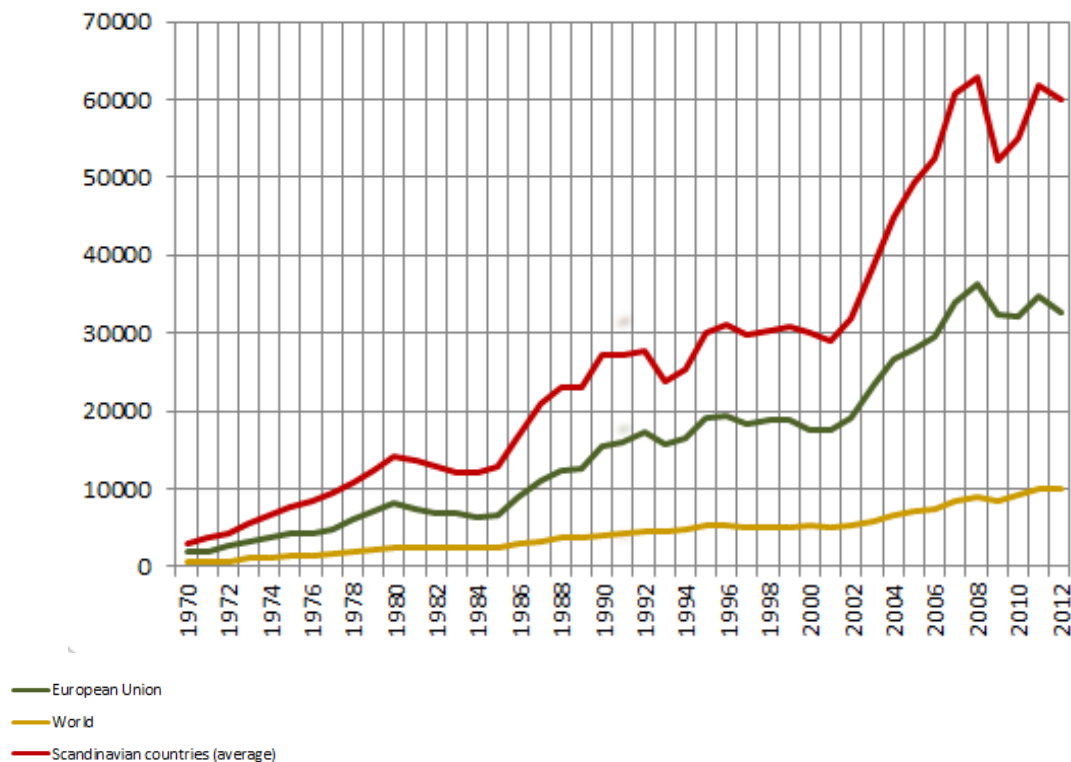


Fig. 1. Gross Domestic Product per capita (current US \$) [11]

In order to regard social sphere we have used such indicator as government consumption expenditure, in particular, its share in GDP (Figure 2) [12], which are used as social transfers in kind (value of goods and services that are supplied to households without any transformation (pension, social protection, health protection etc.).

Comparing the indicators of Scandinavian countries with the world and the EU' average, we determined the following tendencies: the indicators of Swe-

den and Denmark were exceeding the EU' and the world average during whole period, Finland managed to climb higher than the EU' rates in the middle of 80th and after that it held up its position stable, Iceland left the EU far behind roughly in 1992 and began strengthening its position submitting an upward trend the following next years. Norway demonstrated the level higher than the EU' only from the end of 80th till the 2004.

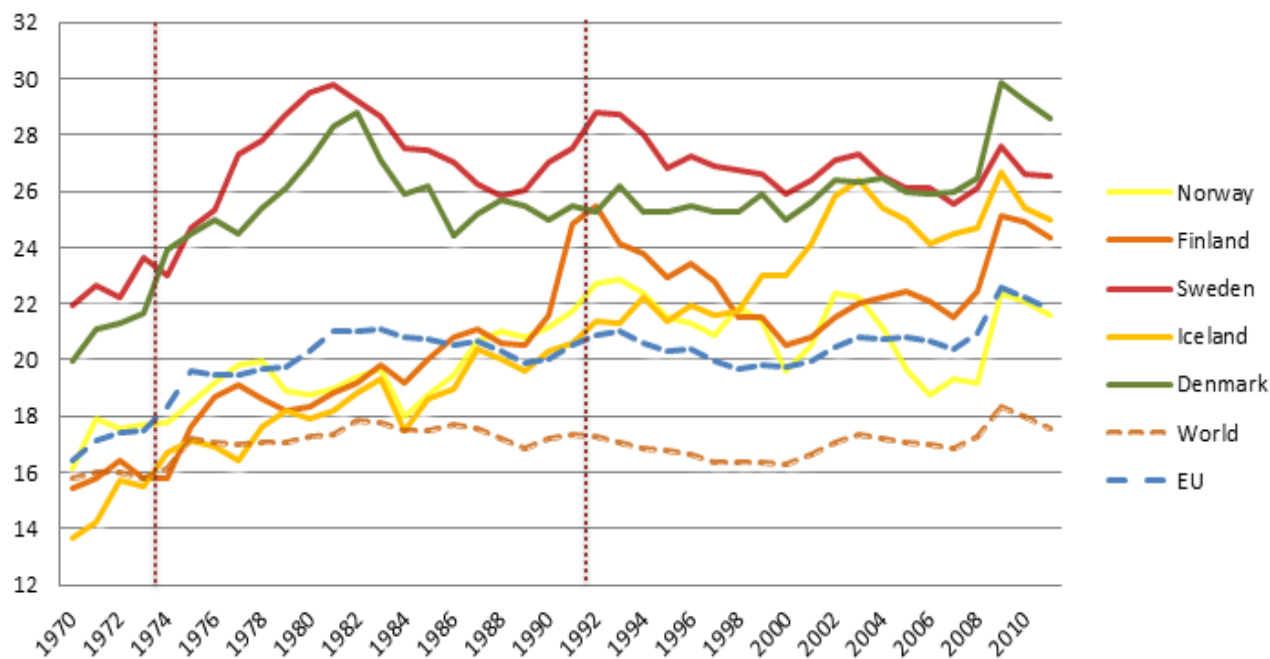


Fig. 2. Share of government consumption expenditure in GDP, % [12]

Then we marked at the graph the most important events in the new concept of sustainability evolution: the Nordic Environmental Protection Convention admitting (1974) [7], which determined the priorities of Scandinavian countries' sustainable development policy, the Rio Declaration on Environment and Development adopting (1992) [4], due to which the significance of the global environment was recognized by the world community.

The hidden point of Scandinavian countries' success we see in their immediate reaction on the new vision of sustainability appeared in the early 1970s. As soon as the world society got the recipe how to extend the limits of growth the Nordic countries changed the priorities of their policy and switched their attention to the environment protection.

As it was mentioned above, one of the main priorities in Scandinavian countries' policy is a creation of an appropriate financial basis for research and technology development. The diagram on Figure 3 reveals research and development expenditure of European countries in percent of GDP in 2010 [13]. As we see in 2010 four Scandinavian countries exceeded not only

the EU' and the world average rates, but also the target of EU for 2020.

As a rule, research efforts stimulate alternative and nuclear energy use. The graph on Figure 4 [14] shows superiority of almost all Scandinavian countries comparatively to the world and the EU's level during the whole regarded period. Ireland occupies the leading position demonstrating the highest percent of alternative and nuclear energy in total energy use (84%), the third and the fourth places belong to Sweden and Norway correspondingly, Finland stepped to the sixth position in rating. The first three Scandinavian countries exceeded the European Union average more than two times and more than four times the world average. Such impressive results confirm, that the priorities in Nordic countries policy are right and its instruments and methods seem to be the most effective ones.

Thus, having all domains regarded we may converge basic results in conclusive table (Table 1). We do this as follows: we will look at Scandinavian countries in world rankings using aggregate indexes which include previously mentioned indicators. They are the Global Competitiveness Index reflecting the economic

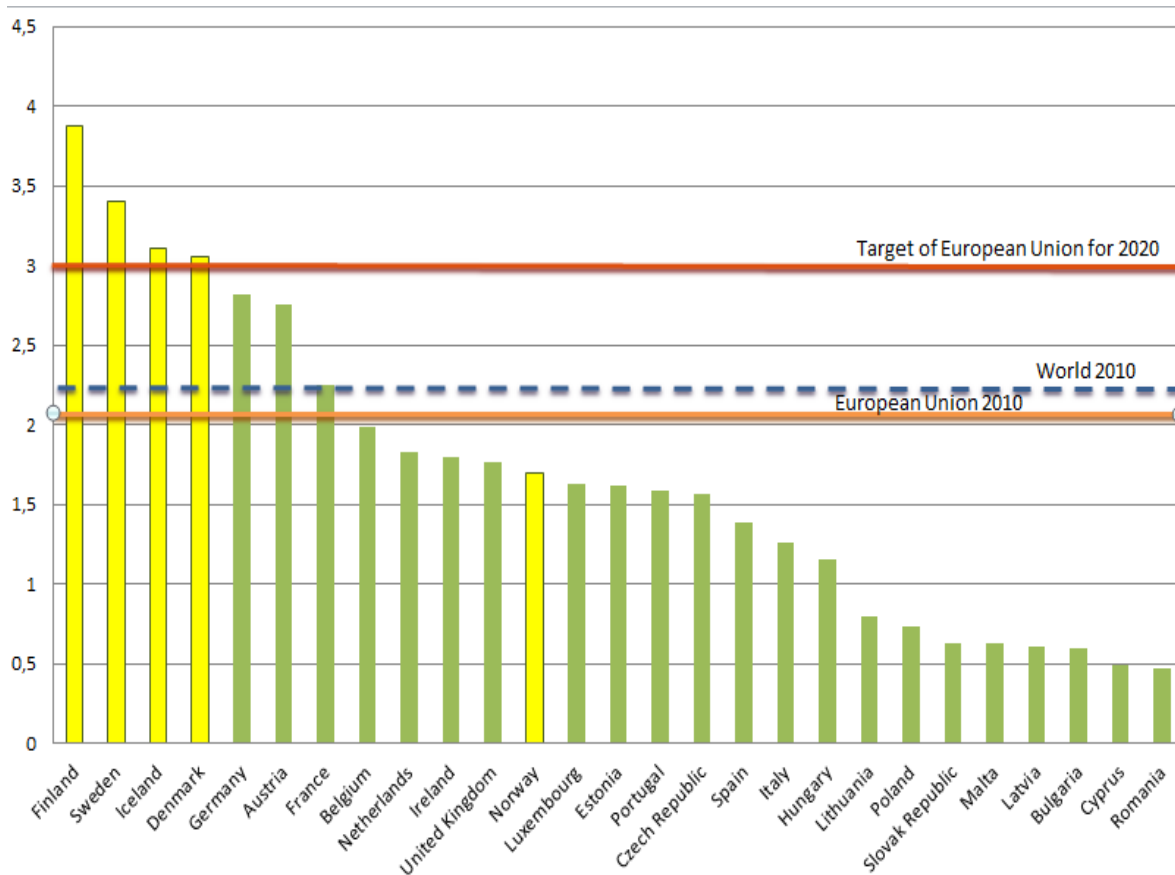


Fig. 3. Research and Development Expenditure in 2010, % of GDP [13]

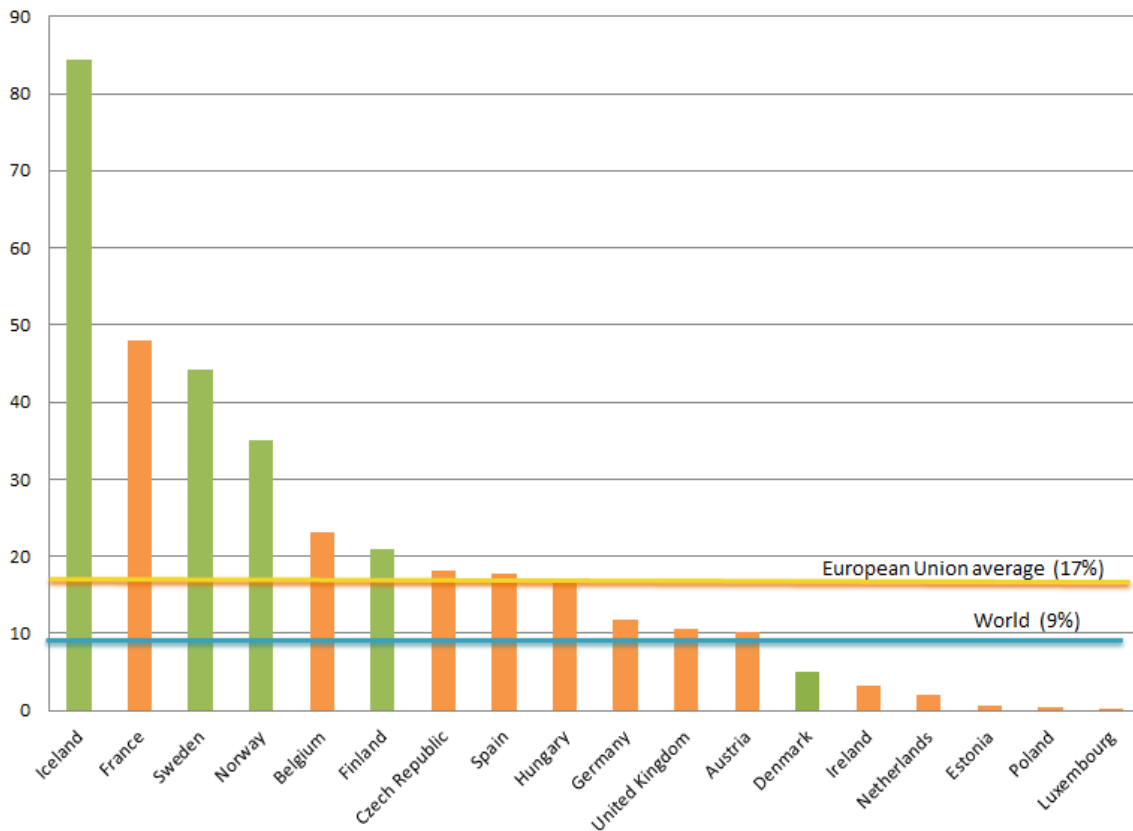


Fig. 4. Alternative and Nuclear Energy (% of total energy use) 2011 [14]

achievements [8, p.14-15], the Environmental Performance Index showing the current state of the environment [10] and the Human Development Index presenting quality of human being [9, p. 144-147]. They were regarded in recent years.

Being among thirty leaders Scandinavian countries demonstrate strong positions in the world economy. Finland and Sweden are the third and the fourth

country correspondingly in the Global Competitiveness Index ranking, Norway is the third country in the Environmental Performance Index ranking and the top one in Human Development Index ranking, Sweden remains on the seventh position in the last ranking. Thus, Norway, Sweden and Finland seem to be the most successful Nordic countries and the world ones as well.

Table 1

The Scandinavian Countries in the World Ratings [8, p.14-15; 9, p. 144-145; 10]

	Economy		Environmental sphere		Social sphere	
	Global Competitiveness Index*		Environmental Performance Index**		Human Development Index***	
	2012-2013		2012		2012	
Country	Score	Rank	Score	Rank	Score	Rank
Finland	5,55	3	64,44	19	0,892	21
Sweden	5,53	4	68,82	9	0,916	7
Denmark	5,29	12	63,61	21	0,955	15
Norway	5,27	15	69,92	3	0,955	1
Iceland	4,74	30	66,28	13	0,906	13
Ukraine	4,14	73	46,31	102	0,74	78

Sources:	* Global Competitiveness Report 2012-2013 (2012 World Economic Forum)
	** Human Development Report 2013 (the United Nations Development Programme)
	*** Yale University

So nowadays we may observe obvious results of Scandinavian countries policy proved by the certain figures. The hidden point of their success lied in the immediate reaction on the new concept of sustainability appeared in the early 1970s. They were the first who switched the priorities of their policy on decreasing of anthropological burden on the environment, the control of ecological standards maintenance in enterprises activity and increasing the level of energy saving due to the new innovative technologies introduction, thus implementing in practice the new vision of human life in harmony with nature, while the other countries were still in the process of discussing pros and cons of this concept. The right priorities chosen at the right time let Scandinavian countries demonstrate today strong positions in the world economy. Being among thirty leaders in the world ratings (Global Competitiveness Index Rating, Human Development Index Rating and Environmental Performance Index Rating) they are far ahead of the most European countries in their socially-oriented economic model, research efforts, advanced energy conservation technologies, innovations and environment protection attitude. Thus,

we have enough arguments to announce effective results of Scandinavian Countries' Sustainable Development Policy and recommend its basic principles as a roadmap for other countries willing to be responsible for their "economically, socially and environmentally sustainable future" [5]. Definitely the application of this approach in the frame on Ukrainian economic policy or some other countries' policy deserves deeper and more detailed investigation and could be the topic of my further research.

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Хоменко Я. В., Хоменко І. А. Нова концепція сталості та політика сталого розвитку країн Скандинавії

В даній роботі була здійснена спроба отримати відповідь на запитання: наскільки є ефективною політика сталого розвитку країн Скандинавії, що заснована на новому баченні сталості? В першій частині роботи було опрацьовано еволюцію концепції сталості, надалі було визначено ключові особливості сучасної політики країн північної Європи, яка зорієнтована переважно на реалізацію наступних напрямів: зменшення антропогенного навантаження на навколишнє середовище, контроль за дотриманням екологічних стандартів в діяльності підприємств та підвищення рівня енергозбереження за рахунок впровадження нових інноваційних технологій. Основна частина роботи присвячена

визначенню результатів політики. З цією метою базові економічні та соціальні показники було проаналізовано в динаміці з початку реалізації політики сталого розвитку країн Скандинавії (з 1974 р. по теперішній час). Окрім цього, щоб продемонструвати наочний прогрес та ефективність політики, проводилось їх порівняння з середнім рівнем в світі та серед країн Європейського Союзу. Перебуваючи серед тридцяти країн лідерів світових рейтингів (індекс глобальної конкурентоспроможності, індекс людського розвитку та індекс ставлення до навколишнього середовища), скандинавські країни займають сьогодні значні позиції в світовій економіці, таким чином підтверджуючи вірність обраних пріоритетів розвитку.

Ключові слова: сталий розвиток, політика сталого розвитку, сталість, країни скандинавії, енергозбереження.

Хоменко Я. В., Хоменко І. А. Новая концепция устойчивости и политика устойчивого развития стран Скандинавии

В данной работе предпринята попытка нахождения ответа на вопрос: насколько эффективна политика устойчивого развития стран Скандинавии, основанная на новом видении устойчивости? В первой части работы проводится обзор эволюции концепции устойчивости, далее определяются ключевые особенности современной политики северных стран, которая в большей степени ориентирована на реализацию следующих направлений: уменьшение антропогенной нагрузки на окружающую среду, контроль соблюдения экологических стандартов в деятельности предприятий и повышение уровня энергосбережения за счет использования новых инновационных технологий. Основная часть работы посвящена определению результатов политики. С этой целью базовые экономические и социальные показатели анализируются в динамике с начала реализации политики устойчивого развития стран Скандинавии (с 1974 г. по настоящее время). Кроме этого, чтобы продемонстрировать видимый прогресс и эффективность политики, проводится их сравнение с мировым средним уровнем и средним уровнем стран Европейского Союза. Будучи в тридцатке лидеров мировых рейтингов (индекс глобальной конкурентоспособности, индекс человеческого развития и индекс отношения к окружающей среде) скандинавские страны занимают сегодня серьезные позиции в мировой экономике, тем самым подтверждая правильность пріоритетов их развития.

Ключевые слова: устойчивое развитие, политика устойчивого развития, устойчивость, страны скандинавии, энергосбережение.

Khomenko Y. V., Khomenko I. A. New Concept of Sustainability and Scandinavian Countries' Sustainable Development Policy

This paper is to answer the question: how effective has the Scandinavian countries' sustainable development policy based on the new concept of sustainability been? At its first part it is given a brief overview of sustainability concept new vision evolution. Then the basic peculiarities of modern Nordic countries' policy are determined, which is mostly focused on the following directions: decreasing of anthropological burden on the environment, the control of ecological standards maintenance in enterprises activity and increasing the level of energy saving due to the new innovative technologies introduction. The key part of the research is devoted to the policy results justification. For this pur-

pose the basic indicators of economic and social development are analyzed in dynamic from the starting point of Scandinavian Countries' Sustainable Development Policy (from 1974 and till now). Moreover, they are compared with the world and the European Union average to show the visible progress and the effectiveness of the policy. Being among thirty leaders in the world ratings (Global Competitiveness Index Rating, Human Development Index Rating and Environmental Performance Index Rating) Scandinavian countries demonstrate today strong positions in the world economy and confirm in a better way the right priorities of their policy.

Keywords: sustainable development, policy of sustainable development, sustainability, scandinavien countries, energy saving.

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WORLD EXPERIENCE OF THE PUBLIC-PRIVATE PARTNERSHIP AND CHALLENGES OF ITS IMPLEMENTING IN UKRAINE

Introduction. The necessity to overcome crisis tendencies in the economy of Ukraine, to provide sustainable development, to upgrade the main industries and create foundations for economic and social growth in cities and regions creates main challenges to find effective mechanisms of collaboration between the government and business. Even the leading countries of the world can't ensure under current conditions the effective operation of strategic sectors of the economy and the realization of socially significant projects due to limited resources and their own finances. Therefore, pooling of resources and actions of the private sector and the government through mechanism of public-private collaboration is an essential step towards solving social and economic problems of social development and improving economic efficiency, becoming an effective tool to attract investment, introduction of innovative technologies, increasing national competitiveness in the global market.

The successful implementation of PPP in developed countries necessitates its positive experience research of these countries and creation recommendations to enhance public-private partnership in Ukraine.

In foreign and domestic literature has recently been given much attention to the problems of formation and development of public-private partnerships. General aspects of cooperation between the state and business were analyzed in the works of foreign scientists as D. North [1] V. Varnavskiy [2] J. Kuzminov [3] and others. Among domestic scholars who studied the separate spheres of contact and coordination of the government and business interests should be called works of Dementieva [4] A. Golovinov [5] and others. However, the question of theoretical study and practical development for the establishment of an effective mechanism of collaboration between business and the government in Ukraine remain relevant.

Purpose. Generalization of the experience of the public-private partnership implementing in the developed countries and development of proposals for the public-private partnership realization in Ukraine.

Method. The Comparative analysis of the practice of the realizing public-private partnership in the UK, France, the USA, the Netherlands.

Results. The formation of the basic concepts of creating partnerships between the public and private

sector in the leading countries of the world goes back to the distant past. Economic and legal rules and regulations, governing the partnership between the public and private sectors, has undergone some transformations during previous economic recessions, depressions, wars, but, in turn, contributed to the preservation and improvement of the basic principles of cooperation between the government and business.

In today's world there are two fundamentally different schemes of institutional changes varied in methodology and depending on the extent to which a significant shift is taking place within the sphere of the government and private sector relation. [6, c. 12].

The first scheme is a structural adaptation of the existing institutional frameworks to changing objectives, priorities and conditions along with the economic activity of the government. The introduction of new principles, norms and rules of cooperation between public and private sectors in existing institutions or occurring in the context of a new economic policy of the government regulation (the United Kingdom, New Zealand, Argentina, other countries of Latin America), or in the context of changes and amendments of the existing system of public administration (the US, Canada, Japan, EU). The developing countries, which market economy development is sufficient to establish partnership between government and business, are on track to introduce public-private partnerships in that way.

The second approach to the implementation of public-private partnership associated with the formation of entirely new institutional framework, which corresponds to the principles of the market economy and provides a new place in the economic life for the country. This scheme is implemented in the former socialist countries, the former Soviet Union, in some developing countries [6, c. 12].

Establishment of special institutions: agencies/departments (in the United States, Britain, the Netherlands), public corporations (Italy, New Zealand), associations/alliances (France) and others was enabled by the changing role of the government in the economy and expansion of partnerships. The undoubted leaders of the implementation of public-private partnership are the United Kingdom, the USA, France, the Netherlands.

UK. The peculiarity of the cooperation between the public and private sector in the UK was establishment of the Private Financing Initiative in 1992. During the Private Finance Initiative activity (hereinafter - PFI) was implemented about 700 projects, total investment of over £50 billion [9].

The main principles of PFI development were the efficient risk allocation and return on investment, good price and quality criteria, and the main form of PFI project implementation was identified – a life-cycle agreement, i.e. the long-term financing contract and operation of the facilities in return for periodic payments from the state budget. Thus, the government covered the cost of maintenance and repair of assets throughout the lifecycle of the project. Capital costs for construction should be carried out by the private sector, which then depreciated over the life of the project.

However, analyzing the experience of implementing projects, the British government concluded that several aspects of PFI does not work effectively and this has led to non-optimal value for money in some projects, including a slow and expensive process of procurement, not enough flexible contracts, lack of transparency future liabilities PFI projects and to obtainment by some investors unexpected gains.

But at the same time some features of PFI had a positive impact: projects were implemented on time and according to the predetermined budget costs, created incentives for the private sector for effective risk management and proper maintenance of assets provided during the implementation of contracts.

In 2011, after a detailed study of the problems of implementation of public-private partnership the UK government established a new approach to the development of public-private partnership called Private Funding 2, which is to raise funds to finance schools, roads, hospitals, water treatment facilities [9]. The main features of which are:

- 1) The government acts as an investor in equity (the purchase of the share in charter capital);
- 2) Diversification of funding sources: research for the long-term and less costly sources of finance (insurance and pension funds, long-term loan funds) compared to bank financing (expensive and short-term);
- 3) Transparency: a number of measures aimed at improving the reporting, including the establishment commitments to publish a report on the financing of the securities market;
- 4) Improved mechanism for risk sharing, risk sharing mechanism to improve by changing insurance and other areas of law;
- 5) Effective price/quality ratio: the government should provide advice to achieve the best price/quality ratio;
- 6) Centralization: reform involves strengthening centralized approach to the selection and implementation of PPP projects.

The United States. The US government and the close cooperation of private business particularly are widespread at the municipal level. There are no federal laws establishing common approaches to the implementation of PPP projects in the US. In the most states the public-private partnership is governed by existing legal acts on an industry basis.

The main institution responsible for the development of PPP in the country is the National Council for PPP (The National Council for Public-Private Partnerships) founded in 2005 [10]. The National Council is a commercial organization in the government. Promoting and fostering public-private partnerships at all levels, it creates conditions for cooperation between the public and private sectors in socially important for the public areas.

The Council has the following objectives:

- 1) provide general information in order to promote PPP approaches;
- 2) promotes data exchange between the government and private sectors in terms of practical implementation of PPP approaches;
- 3) conduct training PPP seminars and workshops;
- 4) provide technical assistance in the preparation and implementation of international PPP projects;
- 5) analyzes the legal framework related to PPP.

In addition, there are a number of other organizations related to the development of PPP in the US [10]: the Federal Highway Administration – in the field of transport infrastructure development, in supporting the international projects - Department of State: Global Partnership Initiative and the Millennium Challenge Corporation (MCC), and a number of regional centers of PPP.

According to the National Council for Public - Private Partnership, from 65 basic activities of authorities (water, garbage collection, schooling and parking so on) mid-size city uses private companies in the performance of 23 activities [10]. It is the only country with a completely private network telecommunications and one of the few countries that does not have state-owned enterprises in the oil, gas and steel industry. In some states in the US private firms manage prisons. National parks and forest parks managed by the relevant civil service now also controlled by private organizations.

In general, according to the National Council for Public-Private Partnership there are from 23 to 65 working municipal services in cooperation with private business in every city. Its participation in such project allows local authorities to save from 20 to 50 budget funds [10].

France. The modern world practice of PPP suggests that French companies are among the leading international firms using in their activities mechanisms of public-private partnership [10]. So, they established and continues to develop one of the two basic models

of the concession that is widely used in the world - the "French model", which is different from the rest of the base model – the Anglo-American - integrated nature of the concession, when the concessionaire both entrusted the development of concession and implementation of measures necessary for the establishment or upgrading infrastructure of objects and their operation. For example, in contrast to the Anglo-American model, where the choice of private partner held three separate tenders as: the design, the construction, the maintenance (or control), in France, by contrast, feature is that there is a tender for all types works or services.

It should be noted that there are no a single law that would unite all forms of PPP in France. Each form is governed by different legal acts and rules of administrative and civil law (for example, French law № 2002-1094, 29th of August 2002, known as LOPSI, allows private sectors to be involved in designing, building, financing and maintaining of objects for the purpose of justice, law enforcement, military and Ministry of defense, also Government decision № 2003-850 of 4th September 2003 allowing the private sector to participate in similar contractual schemes listed above, but also in the healthcare sector).

The Ministry of Finance of France initiated the establishment of a center of France PPP development (Mission d'Appui aux PPP (MAPPP), which was officially opened in May 2005. MAPPP main goal is to contribute to the executive branch (the initiator of PPP projects) in the preparation and implementation of projects PPP throughout France [10].

PPP Center founded as a structural unit of the Ministry of Finance of France has six people. All decisions made by the center and related to the operation of the rules in line with the ministry. MAPPP main functions are as follows: development of methodology for procurement and evaluation of PPP projects; compliance of the draft PPP to legal, financial and quality of requirements, validation and correctness of the present feasibility study of the project; help choosing private consultants; a comprehensive evaluation of the project before final approval of the Ministry of Finance. The center promotes training materials to provide advisory assistance to ministries and agencies in the development of PPP. The center is engaged in the publication of newsletters and participates in various conferences and other events aimed at expanding the scope of PPP and exchange of experience among the participants. But the center does not have the authority to self-realization of PPP projects, does not conduct requirements and any other activities related to the procurement process. In the past few years, the largest number of PPP projects are being implemented in the construction and maintenance of roads and water supply [10].

The Netherlands. For the first time a public-private partnership was applied in the Netherlands in 1980. But as a priority direction of development of the

economy public-private partnership began considered only 1995. Public-private partnership in this country has become an alternative to privatization. However, the government agencies that were responsible for the introduction and promotion of mechanisms for public-private cooperation opposed him. Primarily, this was because most departments of public-private partnership were unclear. Secondly, there were no experts who have had issues of public-private partnerships. Thirdly, government officials were confident that the public-private partnership - the first step to losing performed public functions by them.

The first PPP projects were related to the construction of roads of regional significance and high-speed rail networks of roads. All projects have been successful, as provided services of good quality at a lower price. Given that PPP has been difficult: projects were brand new with the latest schemes that are not repeated from project to project, not enough knowledge and experience in the implementation and evaluation of the success of the project, there was no projects that the government would have an opportunity to study and propose business for investment, the Ministry of Infrastructure and Environment established a special department of public-private partnerships.

Department of Public Private Partnership gives consultation to the Minister on PPP projects and report to Parliament on the progress of the preparation and implementation of projects. It also takes part in projects, especially on financing contracts in the life cycle, in addition, the Department conducts training programs. Before deciding the implementation of a project under the terms of the PPP government and the parliament affirm long-term program of public-private cooperation, designed for 10-15 years. Then the Department of Public Private Partnership evaluates the feasibility of PPP projects. If the PPP projects will be successful the government initiates their implementation. If not, then an appropriate justification is provided by the Department of the Parliament [12]. However, it should be noted that the general criteria for assessing the success of the project in the Netherlands to be developed. Phase of the project are estimated separately for individual criteria. The peculiarity of the public-private partnership in the Netherlands is that the PPP alone absorbed by regional agencies, which see in it an effective tool for sustainable economic development without promoting it by government or private sector. In addition, the Dutch PPP distinguished by standard contracts and procedures, that fast and reliable [12].

The most common model is a PPP contract life cycle, also used concessions, projects of integrated development activities and alliances. The scope of the use of PPPs are generally roads, but also it is used in the construction of educational institutions, museums, hospitals.

Thus, the analysis of PPP in the world shows two main ways of organizing this partnership: First, the public sector and private partners join an existing company or jointly establish a mixed company (generally the government has a greater impact). The main characteristic of this method - association of public and private finance. Second, representatives of the government and business sign contract - this can be a cooperation agreement, agreement on management, implementation of the Treaty, leasing agreement, concession agreement, etc. [12].

The common feature of all the countries surveyed, is that, for the implementation of public-private partnerships at the government level that it was established special centers of public-private partnerships. In different countries they have more or fewer rights regarding decisions on projects and generally administered by the Ministry of Finance. All centers PPP in one form or another involved in business planning, provide assistance to project promoters in addition to financial, technical and other consultants, participate in the process of public procurement, including taking suggestions of signing contracts, making analysis of proposals received, helping bodies of executive authorities concluding the contract.

Ukraine. Today in Ukraine the problem of new business opportunities using PPP mechanisms is becoming increasingly important. Ukraine has a legal basis for the development of PPP since 1999. The laws which have been adopted concerned concessions, the production sharing agreement, the public – private partnerships and other laws regulating the PPP.

In Ukraine the second half of 2013 started with the implementation of 160 projects under public-private partnership (PPP) [13]. They are implemented in different sectors of economic activity: 71 projects regard water supply, 32 – production, transportation and supply of heat, 16 projects – the construction and operation of transport infrastructure (including sea and river ports) are implemented, 9 projects in tourism, recreation, culture and sport, 7 projects aimed at cutting waste and 3 are implemented in the areas of health and energy.

Today the most common form of cooperation between the public and private sectors is a concession – an agreement where the government gives business rights to use any of the object or property. According to these terms now in Ukraine are signed 77 agreements, mainly in the provision of housing services such as water provision (61 contract), production and supply of heat and electricity, provision of services for the collection and removal of debris, providing services in housing maintenance sector. Most contracts of concessions implemented in the ARC (56 contracts) [13].

Another 39 contracts of public-private partnership – joint venture with respect to the objects of state (municipal) property, of which 16 signed by sea trad-

ing ports. In addition, 44 projects are currently being implemented with the use of other forms of PPP, signed 42 leases and 2 – on the equity [13].

To implement the National Action Plan for 2013 to implement the program of economic reforms in 2010-2014 "Prosperous Society, Competitive Economy, Effective State" Economic Development in cooperation with experts from UNDP PPP (USAID) and the author team of the Institute of Economics and Forecasting of Ukraine developed and submitted to the Cabinet of Ministers of Ukraine Concept of Public-Private Partnership in Ukraine in 2013-2018 years [13].

At present, work is underway to identify promising projects and opportunities for attraction of investments under the terms of PPP.

After analyzing the experience of implementing public-private partnerships in developed countries and Ukraine, we can conclude that Ukraine has difficulties in implementing PPP. The main problem is the presence of significant risks of investing in capital-intensive objects denoted in the absence of guarantees of the government due to political instability in the country. Country does not ready for the transfer of certain rights to businesses. Also the problems of PPP should include staffing component. Experts in public administration of Ukraine, capable professionally to make long-term investment contracts are virtually absent. Such experts do not prepare national educational institutions, there are no corresponding methods, programs and courses, in contrast to developed countries, where human potential and methodological developments is the base. In Ukraine the state level agencies that would directly involved in matters of public-private partnerships, ranging from proposals for projects that can be implemented through cooperation between business and government, and ending with the government as a co-owner of such projects, as practiced in Great Britain. Currently, the relevant departments of Ministry of Ukraine is a public-private partnership, but they are both informative agencies by providing information to the public concerning the conditions and the number of projects between government and business.

Given the experience in implementing public-private partnerships in developed countries, Ukraine has the key task is primarily the removal of bureaucratic obstacles to the implementation of PPP development mechanism in the spine availability and attractiveness of PPP municipal level, ensuring a transparent and public art and access to the implementations of AI PPP projects, creating a center of PPP at the national level that would have accumulated experience in implementing PPP projects at the local level, the analysis of positive developments of national scale.

At present, the issue of implementation of PPP in in the country is the most relevant, since allow to solve

a number of problems connected with the funding of strategically important objects in the regions.

Summary. Qualitative and quantitative leap in the development of PPP in these countries began after the establishment of the corresponding institution of enhanced well developed legal framework. Thus, we can conclude that the effective development of PPP in Ukraine in the long term is possible only if the creation of the PPP Center and further development of legislative framework at national and local levels. Practice of PPP implementing in several countries shows that this mechanism is used there where the government and business interests are complementary, but are not able to operate completely independently of each other.

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Оленцевич Н. В., Ковальова О. В. Світовий досвід державно-приватного партнерства і проблеми його використання в Україні

На основі дослідження світової практики здійснення державно-приватного партнерства виявлено особливості становлення національних моделей та окремих форм реалізації державно-приватного партнерства в провідних європейських країнах і США. Систематизовані еволюційні зміни у здійсненні функцій держави та обґрунтовано необхідність побудови системи партнерських відносин у напрямку диверсифікації учасників, забезпеченні прозорості та ефективності реалізованих проєктів. Аргументовано положення про те, що якісний і кількісний стрибок у розвитку державно-приватного партнерства забезпечується шляхом створення необхідних інституційних передумов і форм - спеціальних установ і інституцій для здійснення консультацій, економічної експертизи та сприяння становленню співпраці держави і бізнесу. Виявлено основні проблеми та пріоритетні напрямки здійснення державно-приватного партнерства в Україні в довгостроковій перспективі.

Ключові слова: держава; бізнес; державно-приватне партнерство; зарубіжний досвід; співробітництво; моделі реалізації державно-приватного партнерства.

Оленцевич Н. В., Ковалёва Е. В. Мировой опыт государственного-частного партнерства и проблемы его использования в Украине

На основе исследования мировой практики осуществления государственного-частного партнерства выявлены особенности становления национальных моделей и отдельных форм реализации государственного-частного партнерства в ведущих европейских странах и США. Систематизированы эволюционные изменения в осуществлении функ-

ций государства и обоснована необходимость построения системы партнерских отношений в направлении диверсификации участников, обеспечения прозрачности и эффективности реализуемых проектов. Аргументировано положение о том, что качественный и количественный скачок в развитии государственно-частного партнерства обеспечивается путем создания необходимых институциональных предпосылок и форм - специальных учреждений и институтов для осуществления консультаций, экономической экспертизы и содействия становлению сотрудничества государства и бизнеса. Выявлены основные проблемы и приоритетные направления осуществления государственно-частного партнерства в Украине в долгосрочной перспективе.

Ключевые слова: государство; бизнес; государственно-частное партнерство; зарубежный опыт; сотрудничество; модели реализации государственно-частного партнерства.

Olentsevych N. V., Kovalyova O. V. World Experience of the Public-Private Partnership and Challenges of its Implementing in Ukraine

Introduction. The implementation of the public-private partnership in Ukraine is becoming vital to the tackling financial challenges of the construction and operation of asserts of the strategic importance for providing socio-economic development of the society in an environment of budget shortfalls.

The analysis of a foreign experience in the realization of the partnership between public and private sectors allows us to organize guidance and conditions of the PPP implementation for further use in Ukraine.

Purpose. Generalization of the experience of the public-private partnership implementing in the developed countries and development of proposals for the public-private partnership realization in Ukraine.

Method (methodology). The Comparative analysis of the practice of the realizing public-private partnership in the UK, France, the USA, the Netherlands.

Results. On the basis of the public-private practice research in the developed European countries and the United States of America the special features of the establishment of national models and specific form of public-private partnership have been determined. Evolutionary changes in the performing the governmental functions and constructing the partnership system in the sphere of participant diversification and increasing the transparency and efficiency of projects have been traced. It was proved that the quantitative and qualitative leap in the public-private partnership development in the countries studied pertained to the establishment of the special public agencies and institutions to hold consultations, economic expertise and facilitated the introduction of the collaboration between government and business. Priority forms and areas of public-private partnership implementation in the countries studied have been defined. The main obstacles to the realization of long-term public-private partnership forms in Ukraine related to the political turmoil, absence of state guaranties and high risks of making investment have been revealed. The necessity to improve the staffing capacity of the public-private partnership implementation process and development appropriate methodology documentation has been proved. It was concluded that there is a need to create a special institution to coordinate the implementation of the partnership between the state and business in Ukraine and improve the legal framework for the regulation of public-private partnerships at the local and national levels.

Keywords: government; business; public-private partnership; foreign experience; collaboration; public-private partnership agencies.

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PRECONDITIONS OF STRATEGIC DEVELOPMENT OF SMALL MINING TOWN (CASE DOBROPILLYA SUBREGION)

Problem. Modern structural crisis and global post-industrial society building, where the extremely high value of intangible assets like images, ideas, concepts, identities, symbols, myths, texts, cultural and technological models, intellectual property, generate a representation of development programmability about the concept that future can not only be predicted but also modeled efficiently. The model of the 'closed future', where the probability of events is strictly determined, remained in the bygone era.

Recent researches and publications analysis. Recently, due to the increasing of complexity of global communications and control systems, the emergence of new political actors, the development of formal and informal networking communities, as well as in connection with the use of cognitive weapons, humanitarian technologies, technologies of 'controlled chaos' and asymmetric strategies, it's important to mention 'discovered future'. The horizon of prediction in conditions of globalization and increased social turbulence is lower, the probability of events to change is determined not so much as before, but their variability is greatly increasing.

Design and implementation of management scenarios for the future through coordinated point efforts at every level of the global world-system – are the tasks and occupation of few "creative class". But such management is possible only if the defining features of this class as a whole and its individual passionary and most charismatic representatives will be subjectivity, ambitiousness, strategic goal-setting, as well as will and reasonable qualities. Otherwise the future "for them," whether it be at the national, regional, local or of any other level will be created by other people – representatives of other nations and civilizations. Therefore, successful builders of the new future it would be better to define, according to A. Okara as 'ambitious creative class' [1].

'Creation' of such people in the country, region, city, etc. – their education, training, promotion at the effective position in the socio-political structure - becomes very important task for all countries aspiring to the leadership in the new world. Themselves as intangible assets and technology of the 'soft and reasonable power' become the "building blocks" which make up the future.

Independent problem in the Donbas is ecology. In 2011, the government adopted a new environmental strategy until 2020, which provides the reduction of air emissions from stationary sources by 10% by 2015 and by 25% by 2020 compared to 2010. However, at the end of 2012 the emission of pollutants (excluding carbon dioxide) from stationary sources only increased – from 4.13 to 4.33 million tons [2].

At the same time 35% of all the emissions there are in the Donetsk region from stationary sources (1510000 tons), although three years ago there were 33%. It is therefore not surprising that in 2012 the local government adopted its own plan of action for the protection of the environment for the next 8 years. It included 31 events totaling 30 billion USD. A major role in this regard is played by SCM Group Rinat Akhmetov – "Metinvest" and DTEK. The company group "Donetskstal" is on the second place.

It should be noted that such programs exist for years, but usually plans to reduce emissions were not met. Meanwhile, over the past year since the adoption of the regional plan, "Metinvest" implemented or begun the implementation of three projects that seriously change the situation. Thus, in December 2012 sinter plant at the steelworks "Azovstal" was suspended, which reduced emissions of suspended matter, carbon monoxide, sulfur and nitrogen compounds by almost 33 thousand tons. Then in summer of 2013 the project of building a new sinter plant at Yenakiyev Steel Plant was presented. Construction cost Rinat Akhmetov 360 million USD, and as a result of emissions of pollutants into the EMZ air pool Yenakievo decreased by 7 times. The start of building is planned for the second quarter of 2014 and start of the sinter plant operation – in 2016.

In December 2013 the group "Metinvest" signed a contract with the Italian company Termokimik Corporation to carry out basic engineering as a part of the modernization of the Ilyich Iron and Steel Works. This thing according to the program of the Environment and Ecological Safety of Mariupol will significantly reduce emissions of harmful substances. The project of the reconstruction of the gas cleaning of the Ilyich Iron and Steel Works involves replacing existing equipment to modern one to maximize clean gases from dust and sulfur oxides. The completion of a full cycle of reconstruction is planned by 2020. As a result, emissions of

dust and sulfur oxides from the sintering zone will be reduced by 85% and 30%, respectively, and dust emissions from the cooling zone – 90%.

This project will be implemented using the most advanced technologies. It is the best in terms of ecology and is sure to bring substantial benefits to all residents of Mariupol. There are not built such large-scale gas cleaning systems for sinter plants in the world. The Group continues to modernize the sinter plant for air cleaning in the cities of its presence – that is the task set by the owner of the company. Reconstruction of gas cleaning equipment of the Ilyich Iron and Steel Works will be the largest environmental project in the metallurgical industry of Ukraine. "Indeed, it will cost "Metinvest" almost 220 million USD.

By the end of 2018 gas cleaning equipment of sintering machines will ensure that the level of abatement corresponds European environmental standards, which wasn't met until today in the Ukrainian metallurgical industry. And all the above events of "Metinvest" will reduce emissions in Donetsk region up to 138000 tons per year, or almost 10% of last year's level.

According to the governor of the Donetsk region, events happening at the Ilyich Works show real patriotism. Despite the difficult economic period for Ukraine, and for the steel industry, "Metinvest" finds the strength and means to solve problems, including ecological ones. Reconstruction of the sinter plant - this is a very important step to improve the environmental situation in Mariupol.

In 2014, the Energy Division of SCM – DTEK planned to expand the competition "City by our own hands." Emphasis was made on innovative projects. Together with the main contest there will be television one, organized in collaboration with TRC Donbass and other regional channels, which will be a kind of an information platform for the contest. It will be possible to participate for all the inhabitants of the cities of DTEK business, and winner will be selected by TV-viewers. On January 23, 2014 a DTEK conference was held, where the company has summed up the competition "City by our own hands" for 2013. The conference was attended by members of DTEK, city councils representatives of cities participating in the project, the organizers of the contest in the eastern region - Foundation of local initiatives of Donetsk region - and three of the winner teams of last year. Overall winners of the competition "City by our own hands" in 13 cities became 74 initiative groups of citizens and civil society organizations. DTEK allocated about 2 million USD in the form of mini-grants for their projects related to the modernization of cities, social protection, the organization of children's leisure time. Projects were implemented in the end of 2013.

"We hope that with the help of the annual competition we can attract people's attention to the development of the cities they live. A partnership with broadcasters will help us in promoting our ideas and involve

much more participants. We want as many Ukrainians as possible to take the initiative and contribute to the improvement of the city. Joint efforts, gradually helping each other, we can change the face of our regions. DTEK keeps working to develop small Ukrainian towns in order to give their residents to feel the confidence in the future," said the head of the department of planning and implementation of social projects of DTEK Anatoly Solovyov, speaking at the conference. [3]

In 2014 the competition "City by our own hands" will be held in 31 areas of DTEK activity. These are small cities and towns in the Donetsk, Lugansk, Dnipropetrovsk, Zaporizhzhya, Vinnitsa, Ivano-Frankivsk, Lviv region. Preference will be primarily given to projects related to innovative solutions. Detailed conditions of the tender and the applications date will be announced later. Also on Channel Donbass and other regional channels Idea Television Awards will be held. In the first stage, the Commission will select the 12 best ideas to improve the quality of life in cities. The teleplots about the authors of these ideas will be taken. A winner will be selected by televoting and DTEK will help him or her with the design of project documentation and its implementation.

In Mospino, where there are Mospino DTEK coal processing enterprise on January 10, 2014 there was an ambulance car of urban substation of emergency medicine presented. The car which costs 700 thousand UAH was purchased by energy company DTEK in frames of the strategy of social partnership. Modern minivan by Renault brand is equipped with everything for medical assistance according to the state standard: electrocardiograph, defibrillator, ventilator, stretchers and other equipment. In addition, the vehicle is equipped with optional equipment – vacuum mattress to transport victims of spinal injuries, fractures, internal bleeding and shock. Design features of the mattress (shape of air-refilled shell and pneumatic chambers) also make it possible to perform rescue breathing and chest compressions.

Minibus by Renault brand was preferred because of its high ground clearance, which provides a good cross car on country roads. "In Mospino the lack of ambulances took place, we had to call them from Donetsk. Way from city to city can take up to half an hour, and time is the most valuable resource in emergency medicine – the director of DTEK Mospino coal processing enterprises George Reznichenko said. – The acquisition of a modern car will help to provide many residents of our city with timely medical help, and in some cases – save their lives. In 2013, DTEK invested 1.1 million USD to the social sphere of Mospino, and this project is the most important. ""Between DTEK and Mospino a cooperation agreement was signed. And one of the elements of this agreement is to assist in equipping the ambulance substation with all the neces-

sary equipment in order to provide residents of the town and nearby villages with qualified help. For these purposes the ambulance car, which is one of the best today, was purchased. I would like to thank DTEK for taking care of the inhabitants of those regions where there are enterprises of the company," – said the Donetsk Mayor Oleksandr Lukyanchenko [4].

In 2013 DTEK in Mospino social competition "City by our own hands" was held, in result of which there were four playgrounds built. Also with the help of the company financing the facades insulation of kindergarten "Fairy Tale" was carried out; a course on energy efficiency in local schools was introduced. In general, DTEK sent about 26 million UAH for the social development of the Donetsk region in 2013. The same amount is planned for this purpose in 2014. 63 projects concerning health, education and culture, energy efficiency will be implemented in the residential sector and the development of social infrastructure and business environment of cities where the company works [4].

According to the information of January 20, 2014 DTEK sent about 1.8 million UAH to purchase equipment for the hospital and outpatient in Dobropolie, restore heating systems in two hospitals, a connection to the city telemedicine network. Citizens can now receive timely treatment and prevention of occupational diseases, without leaving Dobropolie. In Dobropolie Central Hospital and outpatient clinic of general practice of family medicine medical diagnostic equipment, physiotherapy equipment are established, which cost 370 thousand UAH. In the hospital, an electrocardiograph, compressor nebulizer device (for inhalation), an apparatus for resonant magnetic quantum therapy, physiotherapy multifunctional device appeared. Purchased equipment will reduce the time and costs for a patient to receive qualified health care provider, because there is no need to go to the regional center. In the clinic there are biochemical analyzer, designed for research in clinical biochemistry; binocular microscope and centrifuges, which are used for diagnostic purposes; ultrahigh-machine; mercury-quartz irradiator with the help of which general and local individual exposures are hold in a number of diseases.

Citizens working in a dusty and polluted atmosphere from coal and other businesses can receive timely treatment and prevention from occupational diseases of the respiratory tract, skin, internal organs, musculoskeletal and nervous system. Also in 2013, DTEK sent more than 800 thousand UAH for the restoration of the heating system with the use of energy-saving technologies in neurology and children's hospital, as well as the administration building Dobropolie Central Hospital. By connecting to a centralized urban heating company temperature in offices and wards is 18-20 oC now, the conditions of patients and medical personnel work have improved. Since DTEK is usually located in small

towns and villages, residents' access to qualitative health services is limited. To solve this problem in Dobropolie DTEK implements the city hospital project "Implementation of telemedicine services." "Thanks to "Telemedicine "patients do not have to travel many miles for the consultation of highly qualified specialists from the leading clinics of the country. To get their help will be possible right here, in Dobropolie. We hope that thanks to the new service in our city the quality of early diagnosis, which is especially important for the effective treatment of many diseases, will improve" – said the director of DTEK Belozersk Mine Management Vladimir Panibratchenko [5].

DTEK has also financed the necessary work on launching the new equipment – internal wiring communication network in the hospital. Over the next two years as a part of the project "Telemedicine" the company is going to invest another 700 thousand UAH for the hospital with modern medical equipment. Only over the period 2014-2015 for the purchase of a modern city hospital reanimobile, new equipment and for repairing company is going to invest over USD 2.25 million.

Externally Dobropolie is not very different from many other cities of Donetsk region. A similar architecture, nature and life style of the citizens. But Dobropolie is significantly different from the other cities of the Donbass by the fact that there was almost no fighting. And along with the separatist "referendum" comes a referendum to join the Dnipropetrovsk region. The head of the NGO "Dobro" Vladimir Oros, the author of the initiative "Let's make Ukraine clean!" in Dobropolie and "Dubkrossing" (mentioned in the newspaper "Den" at #203 of November 7, 2013). Oros is now realizing another project - a festival of street art "Your ARTerritory" will be held in the city on August 30-31. Now a competition for sculptors and artists, who are invited to paint a few urban facilities.

"Many people speak about the existence of "Donbass character ", but often it is not clear where it appears – Vladimir started talking. – So, now Dobropolie people live on this nature. People show amazing restraint from small to large. – These days Dobropolie has become an island of hope for other residents of the Donbass, in the early days of ATO refugees began to arrive from Slavyansk and Kramatorsk. City officials and the public solved the problems of resettlement and the provision of basic necessities instantly, DTEK offered their hostel, Gorzdrav – premises of hospitals, and community-based initiatives provided products and things. The city served like an anthill, meetings in the executive committee became frequent. Later, when the ATO phase moved to other cities, we began to arrive from Donetsk, Avdeevka, Marianka, and everything was serious. People often try to involve Dobropolie to the political process, but the main goal is to provide the vital activity of the city. Initially, national flags on all

the institutions were hung and Dobropolie confirmed its desire to be the part of united Ukraine, but that does not mean that people ran to demolish the monument of Lenin and blow Sberbank of Russia. We understand that these actions will not be a way to a better life, the coal will not come up to the surface itself, and the water in the taps will not appear.

If we consider the results of two polls – "referendums", which took place in April 11, 2014 (for connecting to the Dnipropetrovsk region and for the creation of "Donetsk People's Republic"), the supporters of the "DPR" was about three times as much. This does not mean that the separatists live here, just a lack of information breeds people to different sides. But they all want the same: the absence of corruption; opportunities for young people; compliance with laws and so on. Just in the first way, it should be done independently, and in the case of the "DPR" expect that all will be served on a silver platter.

What is your project, what is its ultimate goal? – Our project of street art is actually made up of three areas. The first one is to create a "cultural map" of the region to disseminate information on cultural products and attract additional investments. Second one, the festival, is to raise awareness and involvement of residents to the beautification of the city (the creation of a number of art objects will increase the level of responsibility of citizens). And third one is to create a new cultural product, which will diversify leisure. The ultimate goal is to increase the residents activity in order to solve their own problems. I always thought that by raising the cultural level the person is able to develop independently and to help to develop a territorial community.

Have not you ever thought about that during the war there is some need to postpone such events? – Often the news show that to raise the morale folk art groups came with their concert program to the ATO zone. Living with anticipation of what is unknown is very painful, many people are happy to go on vacation in the city, where it is safer, and there people try to pull away from reality, not watch TV and not read the news online. So it hurts to know that those places that you liked, walked or studied, will not be the same, even if they were not touched by bombs. But the main reason to move on was the belief in the peace. I am sure that soon it will reign on the territory of Ukraine, and we will need to rebuild the infrastructure and human souls. So we are proactive. Of course, we don't plan a great celebration with fireworks, but we plan to make the last day of summer for residents of Dobropolie a little better than the rest, we just have to.

How are local residents active in your initiative? – To be honest, I did not expect such activity, especially in summer, and even in wartime. In early July, we conducted training for cultural workers, creative people and just active citizens, and now we are in the process of creating a "cultural map" and the preparations for the festival included organizations and institutions of all levels. A huge contribution to this process did Cul-

ture Department of the City Council of Dobropolie and personally the Head of department Lyudmila Belous, as well as city council deputy Belitsk Viktoriya Zubkova. The committee, which is developing the entire plan of actions, taking into account current situation in the country, has been created. Less than five years have past, when in Donbas new trends began to appear. These are Donetsk Cultural Foundation "Isolation" and Lugansk literary group "STAN". Initially, these initiatives were considered as something meaningless without carrying changes for the better. But the residents of these cities are increasingly beginning to delve into the cultural process ... In Dobropolie it was launched in 2012, and two years later, we already have the result – the perception of our positions by the city authorities and cultural institutions, everyone is ready to change.

A journalist and environmentalist Vladimir Berezin, who conducted the training on another our project "School of Journalism" by fate was in the other end of the country – in Dobrotvor, Lviv region, where he also helped to organize youth studio of journalism. So the next step is a cultural exchange between East and West, through mutual understanding and respect. After all, 70% of the residents of Donbass have never traveled outside their region and their world is made up of what they heard from other people from their circle of friends, social networking and television. Therefore it is very important to see with their own eyes what is happening in other regions. Just recently the Ministry of Culture of Ukraine summed up the results of projects and our joint project in Dobropolie and Dobrotvor have been supported. We plan to hold teleconferences and introductory visits" [6].

Basic research material. Today's challenges require new high-quality solutions capable of ensuring sustainable development of Dobropolie sub-region both within Donbass, and the country as a whole. The economy is poorly diversified sub-region. Being based on its development only on raw materials industry, the economy of the sub-region is exposed to risks of external macro demand for their products, which in turn has a destabilizing effect on the entire socio-economic system of the sub-region. The nature of migration flows confirms the need for early diversification of economic activities in the sub-region. Evaluation of migration of one of the structural elements of the sub-region – Dobropolie¹ – showed that population growth is due to intra-building, due to the presence of less developed areas within the borders of Donetsk region (Fig. 1). When the question of human resource exchange with external territories arises, the net migration of Dobropolie becomes negative with a stable trend to increase the number of drop-outs.

¹ Here and further under the name of Dobropillya we understand an administrative-territorial unit which combines Dobropillya, Belitskoe and Belozerskoe cities, townships like Vodyanskoe and Novodonetskoe in the frames of Dobropillya City Council.

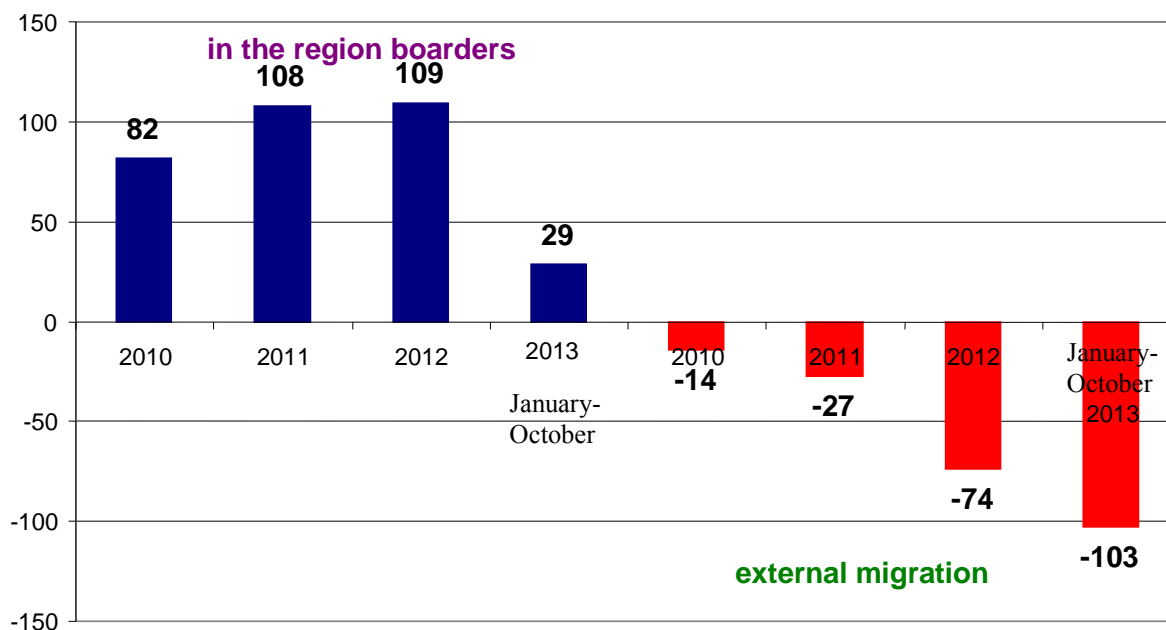


Fig. 1. Net Migration in Dobropillya¹

¹ The data is taken from the official site of the Main Department of Statistics in Donetsk region in the part “Demographic situation”. Access: <http://donetskstat.gov.ua/statinform/index.php>.

We should pay attention to that fact that already in 2013, inner opportunities to increase population are getting exhausted. If in the period of 2010-2012, there was progressive dynamics surplus of internal migration, according to prognoses for 2013 it will decrease compared to 2012, and in 2014 – it (migration rate) may become negative. If to add stable negative natural increase of the population of Dobropillya to these problems (for the analyzed period decrease was 1,849 persons), the future state of the labor potential and opportunities of the consumer market in the sub-region are dramatically getting reduced.

Efficiency of transformation of the structure of production in the sub-region depends on many factors, including the quality of education. Sub-region is close to the universities of Donetsk region (Sloviyansk, Kramatorsk, Gorlivka). In modern conditions, when the distances are no longer a problem, it is necessary to use the opportunity actively to increase the intellectual potential of the sub-region. The presence of a social layer of well-educated entrepreneurs, engineers, technicians and skilled workers will actively develop and produce a variety of products and services that help to ensure a high level of living conditions of the population in the sub-region.

Establishment of an appropriate system of education for the residents of the city will increase opportunities to train specialists. This will allow to provide the development of an employee not only as a subject who generates income, but also as a person who changes radically the composition and structure of products and

services. In this situation, perhaps it is better to have a beaten path - to open branches on the territory of the sub-region's leading educational and research institutions of Ukraine. Indeed, the increase of the group of educated and skillful people in the social structure of the sub-region carries a double effect for it. Firstly - the increase of the middle class, which in the modern world is an engine of progress and innovation. Secondly - this quantity and value growth of human capital in the sub-region, whose share in the economies of developed countries is up to $\frac{3}{4}$ of the national wealth.

Monitoring of these problems is possible within an assessment of stages of upgrade of all the spheres of activity of the the sub-region population. The technique developed by specialists of Institute of an industrial economy of NAS of Ukraine allows to estimate progressiveness of process upgrade of territorial systems by means of economic, social and intelligent indicators. Such estimates have already been carried out concerning a row of the cities of Donetsk region [7]. In tab. 1 and 3 there are results of an assessment of Dobropillya are given in comparison to other cities of Donetsk region, selected by criterion of closeness of layout and population.

Post-industrial upgrade reflects transition of economy from industrial type of development to information economy or economy of knowledge. Neoindustrial upgrade is a development of industrial base on the basis of the modern innovative technologies. For example, for the mining industry dominating in the territory of a sub-region, process of neoindustrialization is

reflected not in strengthening of production of raw materials and its export but in extension of a line of the advanced processing production, including deep and complex processing of coal, development of innovatively oriented small business.

Calculation of an index of post-industrial upgrade showed that Dobropillya loses to all cities-neighbors and the cities with similar population (Avdiivka, Krasnoarmiysk, Hartsyzsk) (tab. 1).

Table 1

Index of post-industrial upgrade of cities⁴

City	2000	2005	2008	2010	2012
Avdiivka	42 ¹	45	43	43	x
Dobropillya	36	38	35	33	36
Yenakiyevo	46	47	49	50	x
Kramatorsk	66	72	71	76	x
Krasnoarmiysk	38	41	36	37	x
Sloviyansk	60	60	57	57	x
Hartsyzsk	45	44	45	34	x

x – the index wasn't calculated.

In the group of social indicators (level of child mortality, the life expectancy, availability of doctors) Dobropillya competes on equal terms with other cities. Not really positive, but in general a competitive pattern in the group of economic indicators (a share of a value added and employment in the material sphere). And here in groups of indicators of knowledge (an innovation in knowledge and transfer of knowledge), Dobropillya loses to all cities-neighbors. It concerns such signal indicators as number of requests for patents, the amounts of financing of scientific-research and experimental-design operations, the number of the scientists and engineers occupied in development of innovations, existence of scientific and educational institutions in the territory of the city.

The assessment of a stage in where there is Dobropillya upon transition to post-industrial upgrade, showed that throughout the entire period of research the city remains in a preparatory phase (tab. 2).

Table 2

Phase of post-industrial upgrade of the cities

City	2000	2005	2008	2010	2012
Avdiivka	0	0	0	0	x
Dobropillya	0	0	0	0	0
Yenakiyevo	0	0	0	0	x
Kramatorsk	0	0	0	0	x
Krasnoarmiysk	0	0	0	0	x
Sloviyansk	1	1	1	1	x
Hartsyzsk	0	0	0	0	x

x – the index wasn't calculated.

¹ In tables 1 and 3 there are indexes of post-industrial and neoindustrial upgrade of the cities, except for the city of Dobropillya (City Council), were calculated in earlier given operations of authors of a scientific and analytical note.

The pattern similar to post-industrial upgrade developed and as a result of calculation of an index of neoindustrial upgrade (tab. 3).

Table 3

Index of neoindustrial upgrade of the cities

City	2000	2005	2008	2010	2012
Avdiivka	42	45	43	43	x
Dobropillya	35	38	37	37	37
Yenakiyevo	46	47	49	50	x
Kramatorsk	56	66	63	68	x
Krasnoarmiysk	35	42	35	36	x
Sloviyansk	50	56	53	57	x
Hartsyzsk	44	45	46	37	x

x – the index wasn't calculated.

For an acceleration of the processes of upgrade promoting economic development of administrative and territorial units of the sub-region it's necessary to integrate common efforts of the local government and large business to stir up activities for development of small business. However, the state and perspectives of development of small business in the sub-region also don't cause optimism that results of the rating on this problem, which was carried out by Head department of statistics in Donetsk region [8], confirmed. By its results the Dobropilsky region on many indicators of development of small business has high rates among 17 regions of area (tab. 4).

At the same time Dobropillya takes places in the last ten of 28 cities of the region constantly (tab. 5).

In 2012 administrative and territorial units of the subregion of Dobropillya in a rating of number of small enterprises on 10 thousand of the population occupied 22 (Dobropillya) and 11 (the Dobropilsky region) places (fig. 2).

Essential distinction in a level of development of small businesses between two administrative and territorial units entering Dobropillya sub-region was not practically reflected in the level of expenses per one employed which incurred small business (fig. 3) in 2012. Small exceeding of this index in Dobropillya is caused by the city specifics of business which are generally connected with transactional expenses.

However, while analyzing the performance of products sold per capita, the biggest difference between the levels of development of small business in the city and the region has resulted in a five-fold superiority of the second over the first (Fig. 4). Dobropolsky district in the ranking for this indicator ranked first among the 17 districts of the region, while the city Dobropillya was only the 23rd among the 28 cities of the Donetsk region.

The financial and economic crisis fallen on Ukraine has had a positive impact on employment in small businesses, the Dobropillya (Fig. 5). The first

**Northwest regions of area in a development rating in the region
small business in 2012**

Regions of the North-West agglomeration	Number of small enterprises per 10 thousand people	Number of individual entrepreneurs per 10 thousand people	Proportion of employed at SE	Cost per 1 employee	Vol. of sold production per 1 person	Income per 1 SE	Proportion of unprofitable SE	Proportion of SE in a local budget	Proportion of farmers agricultural lands	Overall rates
Oleksandrivskyy	16	16	16	2	10	10	1	9	12	11
Dobropil'skyy	1	11	3	11	1	3	13	1	6	3
Kostyantynivskyy	2	14	1	12	5	7	5	3	5	4
Krasnoarmiyskyy	17	17	11	1	8	2	17	15	8	12

Note to Table. 4-5: SE – small enterprises

Table 5

Rating of the cities of the northwest region on development of small business in 2012

Cities of the North-West agglomeration	Number of small enterprises per 10 thousand people	Number of individual entrepreneurs per 10 thousand people	Proportion of employed at SE	Cost per 1 employee	Vol. of sold production per 1 person	Income per 1 SE	Proportion of unprofitable SE	Proportion of SE in a local budget	Proportion of farmers agricultural lands
Dimitrov	20	19	19	3	15	8	16	18	15
Dobropillya	21	22	18	18	23	17	21	20	24
Druzhkivka	5	18	10	23	12	14	11	6	10
Kostyantynivka	7	10	5	19	2	28	7	2	4
Kramatorsk	5	7	3	8	6	9	17	4	3
Krasnoarmiysk	15	4	15	12	17	6	12	22	11
Novogrodivka	27	26	27	16	28	10	4	27	25
Selidove	16	13	20	2	18	2	8	9	8
Slovyansk	4	2	2	13	3	18	9	5	2

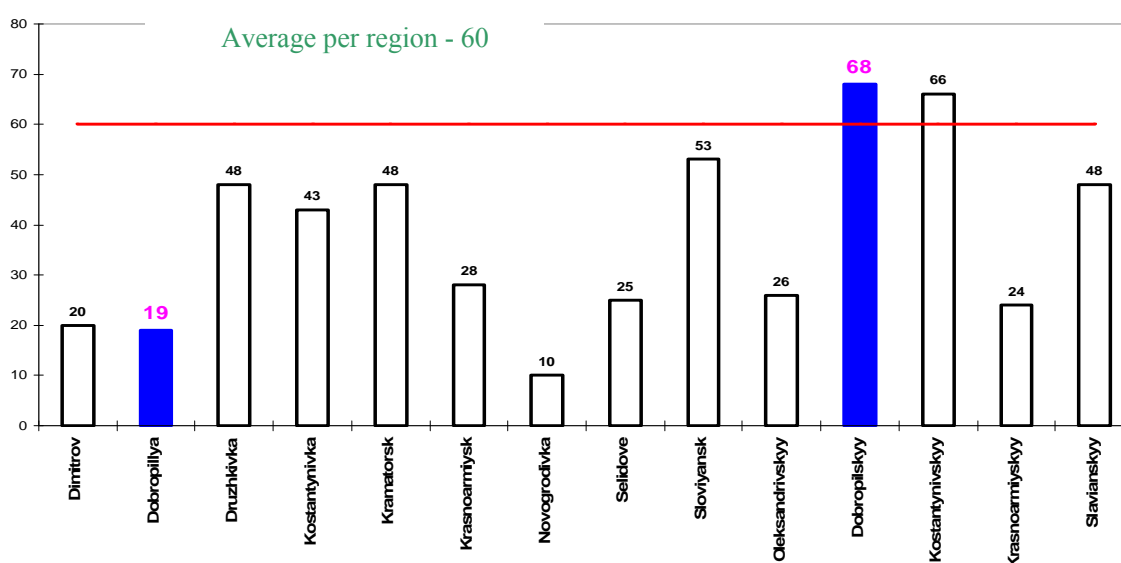


Fig. 2. Number of small enterprises per 10 thousand people

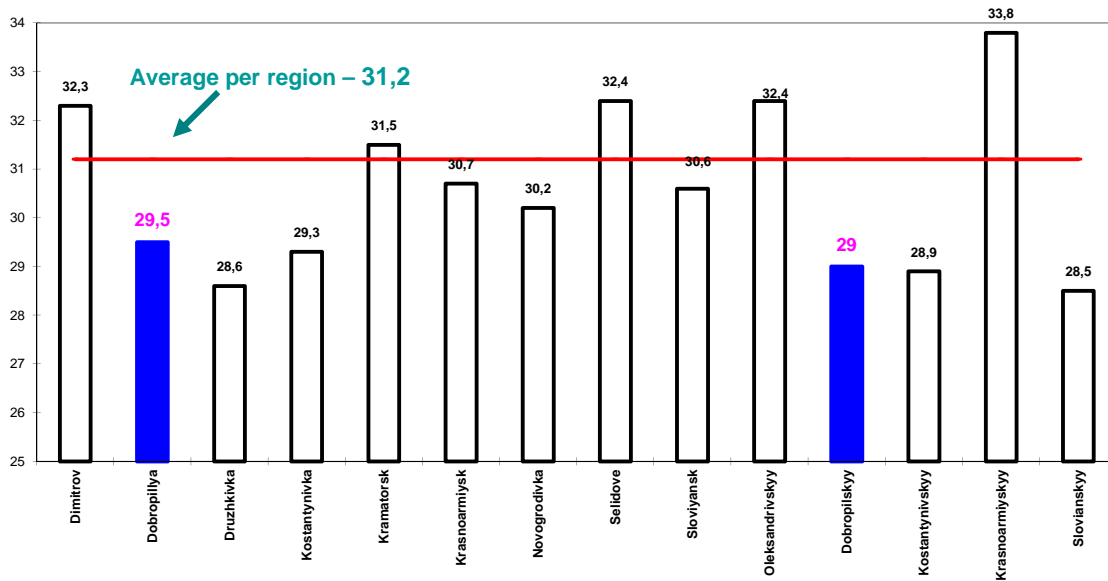


Fig. 3. Cost per employee in small business, ths. UAH

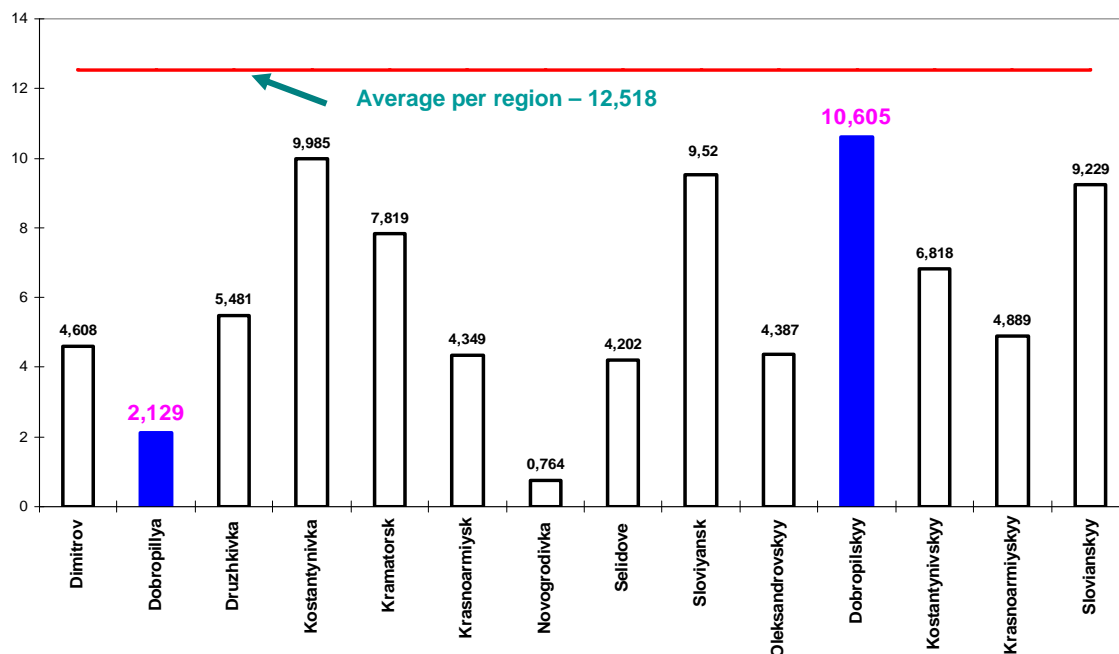


Fig. 4. The volume of sales of small businesses per 1 resident, thousand UAH

post-crisis year (2009) showed that the population of the city was actively employed at small enterprises. But the wave of positive, in the absence of organizational and economic support from the local authorities, was short and soon became rapidly decrease. Despite the fact that the number of small businesses per 10 thousand people has stabilized at around 19 units, the employment rate is steadily falling, presumably, due to "shadowing" of labor relations.

As for Dobropilskyy region, the situation with small business here is somewhat different. In the first post-crisis years (2009 and 2010) both the decrease of the number of small businesses and decrease of the

number of employees in small businesses were observed (Fig. 6). However, since 2011, entrepreneurial boom" began in Dobropolsky region. Number of small enterprises per 10 thousand people increased dramatically more than twice and the growth continued in 2012. The reasons for the intermittent growth of small enterprises in 2011-2012 require additional analysis as a comparable increase in the number of employees in small enterprises did not happen. Also there was no significant decrease in the population in the region, for the period of 2010-2012 a decline was of 500 people. (from 17.1 thousand people in 2010 to 16.6 thousand people in 2012). This may indirectly indicate the revi-

talization in the Dobropilskyy region creating family contracts for farming and / or cattle breeding. It is possible to suggest that another reason for the moderate growth of employment was "shadowing" of employment. There may be other reasons for the sharp increase in the number of small businesses.

Also, there is a reason to formulate the hypothesis that the "shadowing" the small business became a factor which reduces the revenues of the city. In 2012, the Dobropillya took 20th place among 28 cities in the Donetsk region in terms of contribution of small busi-

nesses to the local budget (Fig. 7). In the same index Dobropillya is inferior to Dimitrov, which population is 22% less, and Druzhkivka, where more people lives at 9%, but the share of revenues to the local budget is twice bigger.

Moreover, during the research in the region by the experts of the Ukrainian Association of Management of Consultants "Center of Reform and Local Development" (Kiev) quite interesting facts leading to the conclusion that Dobropillya has good potential for business development were found. Thus, according to

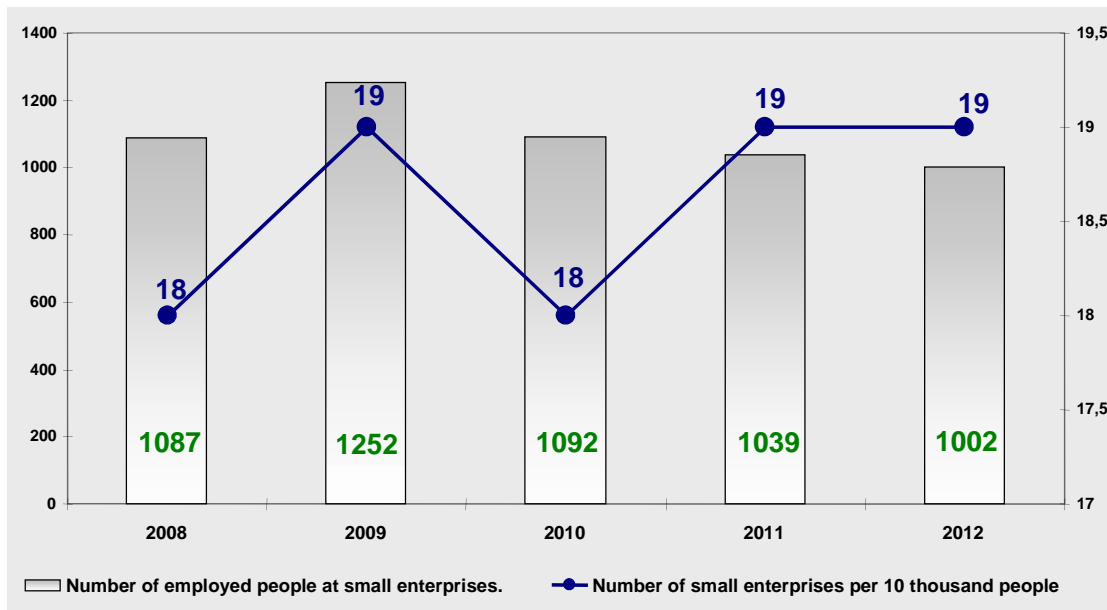


Fig. 5. The number of small businesses per 10 thousand people and the number employed per them in Dobropillya

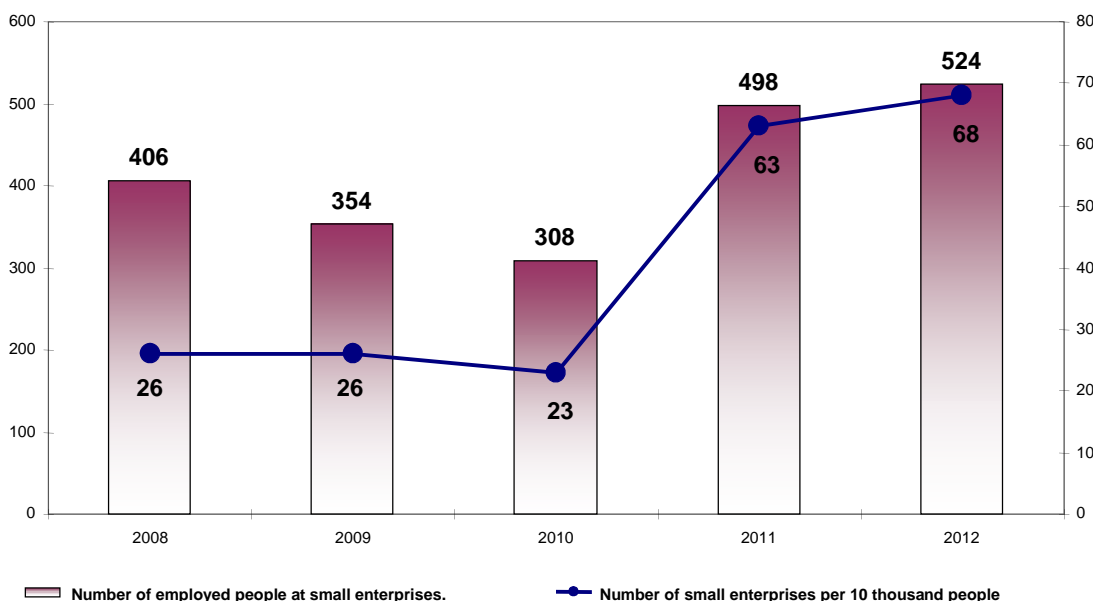


Fig. 6. The number of small businesses per 10 thousand people and the number of employed people in the Dobropilskyy region

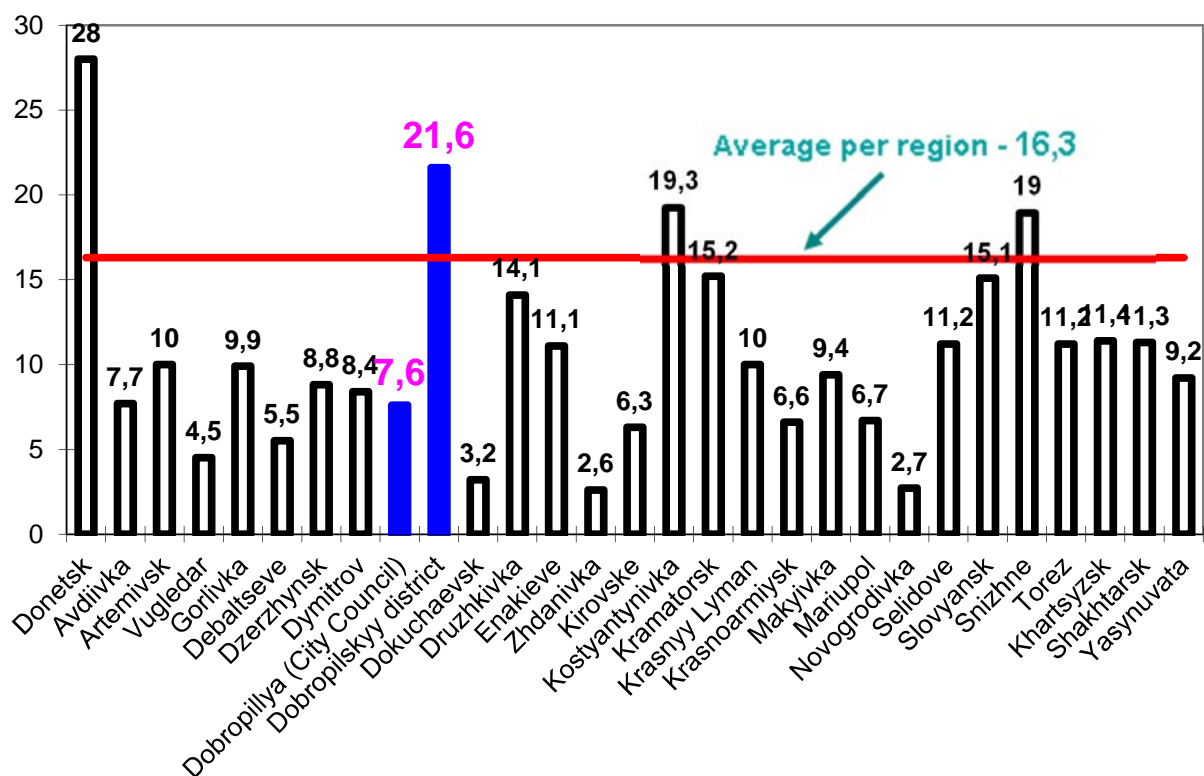


Fig. 7. The share of local revenues from small businesses, %

official statistics the total income of the population is about 1 billion UAH per year. At the same time, the volume of annual consumption is only about 300 million UAH (turnover of 230 million per year., services – 77 thousand UAH) or 30% of revenues. That is the untapped potential of consumer demand – about 700 million. UAH. per year. The reasons for this state become clear even at first glance at the structure of the business environment in the region: 267 outlets, retail space of 20,000 sq. m; 11 pharmacies; 43 catering centers; 6 markets; 167 condominiums; 53 service industries: 18 – real property, 8 – fields of recreation, 6 – hairdressers, 21 – transport, post, education, health, architecture and construction.

Based on the data, experts suggest what types of businesses can be Dobropole. These are: maintenance of condominiums, utilities; production, service, goods for participation in tenders for the core enterprises; real estate services; catering; processing of agricultural products; local and regional tourism; cosmetic and SPA-service; entertainment complex, cinemas; domestic services; auto repair and spare parts supply; coal mining related companies; pharmacy; private kindergartens; production of paving slabs.

However, analyzing the situation of consumer demand, the experts of Donbass Entrepreneurs Club identified one feature – almost all niches of consumer demand which are in population demand are filled. But if you look at the level of the proposed goods and services in particular, we can say with confidence that now in the region it is necessary not only to meet consumer demand but to form it on a new, higher level of

quality. For example, in the sector of "Food" there are good opportunities to create a niche of family, youth or just narrowly focused institutions such as "confectionery", "Ice-cream", "Sushi Bar". Their services will be in demand for certain people, at least among the young people of the city, because they will be points of a more modern level of design and service. The same can be said about the market sector "Cosmetology". Hair-dressing salons in the city can be enough, but a beauty salon of higher class, providing SPA services, probably will be in demand.

Changes in procurement policy of DTEK, which has recently been focused on the transfer of the supply of a number of local producers and goods suppliers, are considerable help for the development of the business environment in the region. The most large-scale commodity positions, according to the representatives of DTEK are: chemicals and explosive materials; parts for mineral processing and mining equipment; building materials; electrical equipment; household materials; fuels and lubricants; special clothing and personal protective equipment; hardware, cables.

Conclusions. Thus, we can conclude that the region begins to "warm up" the climate for entrepreneurship. At least now local governments are targeting their efforts primarily, and not on a declarative, but the actual level.

Based on this work, the following tables 6-9 show the components of the matrix SWOT analysis of Dobropilskyy sub-region, primarily with a view to diversify its economy in the development of small business.

Table 6

SWOT analysis. Strengths
<ol style="list-style-type: none"> 1. High motivation of management subjects in the sub-region to develop it. 2. Qualified expert and research resource involvement. 3. Presence of the cost-effective coal enterprises. 4. Salaries higher than the average ones in Donetsk region and Ukraine. 5. Small businesses ability to adapt to changing conditions quickly. 6. Desire of the local authorities to develop entrepreneurship. 7. High motivation of small businesses - pursuit of economic independence. 8. Proximity to the major industrial agglomeration "Northern Donbass". 9. The presence of large enterprises in the sub-region, who are potential customers of the small-scale business services, as well as unused production space and equipment. 10. Availability of land in pre-urban agricultural areas. 11. The availability of raw materials, markets in the region.

Table 7

SWOT analysis. Weaknesses
<ol style="list-style-type: none"> 1. Narrow specialization of the industrial base of the sub-region and the priority role of big business, which prevents equal dialogue with small businesses. 2. Monostructure of low-tech production (coal industry provides 99% of the volume of industrial production). Further orientation in policy documents to maintain such a structure of production. 3. Considerable distance from the regional center (about 94 km by roads, approximate traveling duration ~ 1 h 46 min) 4. Deterioration and poor development of social infrastructure. 5. Lack of long-term development strategy. 6. The area is not attractive for living (negative net migration). 7. Absence of production facilities, financial and institutional infrastructure to support entrepreneurship. 8. Lack of working capital, unstable financial situation due to the lack of micro-insurance and credit guarantee. 9. Low level of business culture among small businesses. 10. Inability to substantial support from the local budget (up to 0.5% of the local budget) 11. Absence of development of the cooperative sector in the agro-processing sector. 12. The lack of evaluation of the components of existing capacity ("wealth") in sub-region: natural, labor and recreational resources, the value of tangible and intangible assets, etc.

Table 8

SWOT-analysis. Abilities
<ol style="list-style-type: none"> 1. High level of interest in development of the private sector of the subregion. 2. Attraction of the investments to create new high-tech production facilities using the resources and expert advice of DTEK. 3. The increase in cost of sales of coal products, in case of the rapid growth of the global economy. 4. Ability to implement to the sub-region larger scale of agricultural industrial cooperative chain "od Lana - to the table." 5. The cross-sectoral integration and business diversification. 6. The potential of the local market of goods and services due to the higher purchasing power of the population. 7. Availability of cheap skilled labor with the prospect of increasing of the cash flow passing through it. The structure of the labor market. 8. The desire of the authorities and local governments to cooperate with the business. 9. The possibilities of cooperation with big business on the basis of subcontracting, outsourcing and franchising. 10. Good geographical position in logistics and transit. 11. Prospects for the development of financial infrastructure (micro-insurance, loan guarantees). 12. The possibility of the experts involvement to assess the components of the existing potential ("wealth") of a sub-region: natural, labor and recreational resources, the cost of tangible and intangible assets, etc.

SWOT-analysis. Threats
<ol style="list-style-type: none"> 1. High dependence on the conditions of markets for products made by the enterprises in the sub-region. 2. The closure of the coal industry (in case of a negative situation at the national and global markets). 3. Depopulation and decline of quality of the labor force due to negative demographic processes and ecology. 4. Further degradation of social infrastructure. 5. Imperfect legal framework, frequent changes in it. Priority regulations, the lack of direct mechanism for the implementation of laws, increasing the prospects of shadowing, bureaucracy and corruption. 6. Lack of the access to information about opportunities for small and medium-sized businesses in the region. 7. Increasing pressure from tax and regulatory authorities and the lack of real action mechanism of accountability to business officials for damages. 8. The lack of an appropriate regulatory framework for the system of local orders with mandatory release of the share of small business. 9. The high cost of land, real estate and related to this, the high level of rents. 10. Raiding. 11. Absence of an "entrepreneur" profession in the classifier and corresponding training system

Local authorities together with local corporations, businesses which are located in the sub-region, will cooperate to create the conditions for small business development. Among the strategic directions there are following ones [9, p. 87-94]: advancing the competitive local brands of small businesses, creating high quality products; subcontracting expansion and attraction to tender procedures of small business; popularization of successful implementation of joint projects with small business; assisting in the formation of entrepreneurial thinking and behavior, the development of knowledge and business skills among future entrepreneurs and students.

Sub-region Dobropillya needs to develop high-quality development strategy. Especially because at the

moment, local authorities are no more effective tool for development than the development of strategies and target complex programs to implement. Local authorities "on their own" can not cope with this quite a challenge. It is necessary to unite the potential of local government, corporate business and expert community. The best way to implement this software and strategic approach in the sub-region will be Dobropillya cooperation in the framework of public-private partnership of the following structures: local authorities, DTEK corporations, consulting, auditing companies (for example, Navigator, Ernst & Young) and the Institute of Industrial Economics of National Academy of Sciences of Ukraine (Fig. 8). There is some experience of such

Governmental and private partnership – consortium

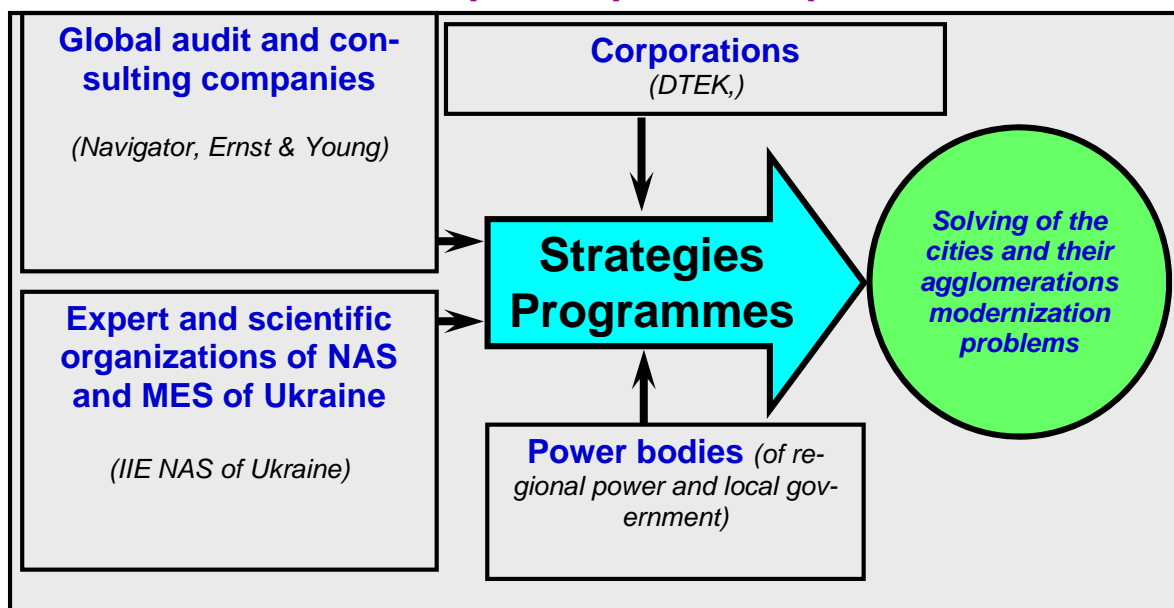


Fig. 8. Scheme of subjects of Development strategy of Dobropillya sub-region interaction

an effective interaction in Donetsk region. As a result of long-term cooperation of the Donetsk City Council with the Institute of Industrial Economics of National Academy of Sciences of Ukraine Strategy of socio-economic development of Donetsk for the period up to 2020¹ was prepared, which is being successfully implemented through a series of long-term programs [10].

Thus, the experience of development and scientific and methodological support for the development of strategic documents can be used in the preparation of the Development Strategy of the Dobropillya subregion for 2014-2016, and a number of integrated programs into its development: innovation and investment, energy efficiency, assistance to small and medium-sized enterprises, social development, etc.²

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¹ The Strategy, worked out in 2007, in 2008 took the 1st place in the local government documents contest in Moscow.

² In Donetsk on the base of the Strategy of city development till 2020 the Program of Investment Development of Donetsk until 2020, Complex program "Energy saving in Donetsk in 2010-2014", Objective development and support program for small and medium entrepreneurship in the city until 2020, General methodological provisions for the development of regional infrastructure elements of micro insurance and small business loan guarantee and others were worked out by the city council and Institute of Industrial Economics of National Academy of Sciences of Ukraine.

target program development and support of small and medium-sized enterprises in Donetsk for the period up to 2020: monograph / A.A. Lukyanchenko, A.I. Amosha, G.A. Grishin, V.I. Lyashenko, etc.; National Academy of Sciences of Ukraine, Institute of Industrial Economics. – 2nd ed., Ext., Revised. and Corr. – Donetsk, 2013. – 214 p. 10. **The strategy** of socio-economic development of Donetsk for the period up to 2020 / A.A. Lukyanchenko, G.A. Grishin, A.I. Amosha etc.: Monograph / NAS, Institute of Industrial Economics; Donetsk City Council. – Donetsk, 2008. – 308 p.

Котов Є. В., Ляшенко В. І., Тесновський П. В. Передумови стратегування розвитку малого шахтарського міста (на прикладі субрегіону Добропілля)

У статті проведений аналіз стану і перспектив стратегічного розвитку субрегіону Добропілля на основі модернізації економічних стосунків і підтримки малого підприємництва. Обґрунтований механізм формування якісної Стратегії розвитку субрегіону Добропілля на 2014-2016 рр.

Ключові слова: стратегія; розвиток; регіон; модернізація; малий бізнес.

Котов Е. В., Ляшенко В. И., Тесновский П. В. Предпосылки стратегирования развития малого шахтерского города (на примере субрегиона Доброполье)

В статье проведен анализ состояния и перспектив стратегического развития субрегиона Доброполье на основе модернизации экономических отношений и поддержки малого предпринимательства. Обоснован механизм формирования качественной Стратегии развития субрегиона Доброполье на 2014-2016 гг.

Ключевые слова: стратегия; развитие; регион; модернизация; малый бизнес.

Kotov E. V., Lyashenko V. I., Tesnovskiy P. V. Preconditions of Strategic Development of Small Mining Town (Case Dobropillya Subregion)

In the article the analysis of the state and prospects of strategic development of Dobropillya subregion is conducted on the basis of modernisation of economic relations and support of small enterprise. The mechanism of forming of quality Strategy of development of Dobropillya subregion is reasonable on 2014-2016.

Keywords: strategy; development; region; modernization; small business.

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THE CHOICE OF AN ATTRACTIVE INVESTMENT OPTION THE ENVIRONMENTAL PROJECT

1. Introduction.

It is known that nature needs to be protected, especially in the conditions of tendencies of its exhaustion and pollution by mankind that threatens to minimize permissible potential. This thesis and Guy's theory [James Lovelock, 1995. - 148 p.] that nature will revenge and mankind will have to pay for damage and any nature protection activity demands material, financial, labor, intellectual resources prove us the fact that the concern on ecological wellbeing is always connected with alternative expenses. From here the main task follows: to provide achievement of target parameters of environmental quality with the minimum expenses, having made a compromise choice between economic development and ecological safety.

Thus one of the fundamental problems becomes the rational distribution of investment funds of the environmental protection, an assessment of efficiency of their use. In the conditions of lack of an accurate structural basis of planning, selection of the investment projects and participants for their financing there is an influence of subjectivity in decision-making, momentary political unreasonable decision and indistinct responsibility. The assessment and selection of the projects for the state and regional levels of financing from the state budget is usually carried out vaguely and it opens the scope for corruption and inappropriate use of these resources. The laws and subordinate documents don't accurately define who has to be responsible for adoption of these or those decisions and bear for this social and legal responsibility.

It is really, the state resources aren't always spent according to the accurate program concept. Ecological funds have the poor resources and it creates the risk of inefficient use of means owing to difficulties of establishment of priorities of their distribution. It proves the need for strengthening the attention to use of bases of the institutional theory.

However, any institutional reform in the sphere of quality management of the environment should be started from the creation of accurately formulated programs of the achievement of the priority purposes, including the environmental protection. The structures of the institutes and concrete financial methods have the secondary nature and they should be adapted for the specific needs of management of the programs of ecological funds expenditure.

Therefore, for successful realization of the ecological policy, the prime solution of the most priority environmental problems, and the optimum expenditure of the funds for these purposes it is necessary to provide a conceptual basis and implementers. One of the tools for these purposes is recommended to use scenario approach [Vishnevsky Valentine, Polovyan Alexey, Aleksandrov Ivan, 2011, p. 65-78]. In this case, it is required the model of planned distribution of these resources at the heart of which there can be the usefulness of the function of quality of environment integrated index. The structural elements of this model are the total amount of fund, the number of projects and the cost of each of them.

The model description.

Let us enter designations: S - budgetary investment fund of nature protection projects; $z = \{z_1, z_2, \dots, z_m\}$ - the recommended nature protection projects; m - the number of projects; $c = \{c_1, c_2, \dots, c_m\}$ - the cost of projects. Thus, the set of all possible sets of projects (\emptyset corresponds to a case when any of projects isn't realized, for example, if $S < \min_i c_i$) is presented in the formula 1.

$$Z = \left\{ \emptyset, \{z_1\}, \dots, \{z_m\}, \{z_1, z_2\}, \dots, \{z_{m-1}, z_m\}, \{z_1, z_2, z_3\}, \dots, \{z_{m-2}, z_{m-1}, z_m\}, \dots, \{z_1, z_2, \dots, z_m\} \right\} = \{Z_0, Z_1, \dots, Z_{2^m-1}\}, \quad (1)$$

$$|Z| = \sum_{k=0}^m C_m^k = 2^m \quad (2)$$

at total of such sets of projects we have (that is we have the corresponding number of combinations of the costs of projects):

where: Z - is the vector of the recommended nature protection projects;

$C = \{0, C_1, \dots, C_{2^m-1}\}$ - is the vector of costs of realization of all possible sets of projects (0 corresponds to a case when funds for implementation of the project are absent).

The offered functions of the usefulness of two types [1]. The first considers only the change of the quality of the environment, and the second - the change of the quality of the environment and the financial expenses, at the same time. It has the form:

$$G_1(Z_k) = \frac{Y(Z_k) - Y(0)}{100}, \quad (3)$$

where: $Y(Z_k)$ - is the expected value of an integrated assessment of the quality of the environment after the realization k the set of projects;

$Y(0)$ - is the value of an integrated assessment of the quality of the environment before the realization k - the set of projects.

This function of the usefulness is linear at an increment of the integrated index of the quality of the environment $Y(Z_k) - Y(0)$ that is the more the expected increment of the studied index after the realization of the set of projects, the more rational the project is.

The function of the usefulness of the second type has a form:

$$G_2(Z_k) = \exp\left((Y(Z_k) - Y(0))\left(1 + \frac{S}{aC_k}\right)\right). \quad (4)$$

It is proved that the function of usefulness of this look exponential depends from

$$(Y(Z_k) - Y(0))\left(1 + \frac{S}{aC_k}\right), \text{ that confirms the account change of value of an integrated assessment at realization of the set of projects } (Y(Z_k) - Y(0)), \text{ and the efficiency of investments into the project } \left(\frac{S(Y(Z_k) - Y(0))}{C_k} = \frac{(Y(Z_k) - Y(0))}{\frac{C_k}{S}}\right), \text{ where } \frac{C_k}{S} -$$

characterizes the part of means of the general investment fund which is enclosed in the k set of projects. If $\frac{Y(Z_k) - Y(0)}{C_k} = \frac{0}{0}$, the entered function of usefulness

accepts the values from the interval $[0, +\infty)$, that means that no investments are put in any project.

Thus, the task consists in that using the corresponding restrictions to distribute resources at the maximum value of function of usefulness that will lead to the increase of the integrated index of quality of the environment, and as a result to the increase of the quality of the population life.

3. The stages of model realization:

3.1 the first stage (reflects restrictions of financial resources) allows to eliminate those sets of the projects the costs of which exceed the size of projects fund and the set of admissible projects is formed by the following rule: $Z_p = Z / \left\{ \bigcup_{k=0}^{2^m-1} \{Z_k : C_k > S\} \right\}$, that is a set

of the projects is eliminated from a set of all possible sets of projects and their costs exceed the total amount of money (S) which the subject has.

As a result the vector of admissible projects will have the form $Z_p = \{Z_0, Z_1^p, Z_2^p, \dots, Z_r^p\}$, in which the remained sets of projects are ordered according to the increase of costs for their realization, that is $0 \leq C_1^p \leq \dots \leq C_r^p$. There is the inequality $r \leq 2^m - 1$, which eliminates unreal projects, Z_0 will always be the element of a set of admissible sets.

3.2 the second stage provides usefulness function evaluation for each of the selected sets of projects and forms the following table:

Table 1

Usefulness functions for the choice of the optimum project

The admissible sets of projects	Z_0	Z_1^p	...	Z_r^p
The values of function of usefulness	$G(Z_0)$	$G(Z_1^p)$...	$G(Z_r^p)$

3.3 the third stage (it is the choice of an optimum set of projects) selects a set of projects which will be realized as it is optimum according to the usefulness function G .

Using the table 1, we can find Z_h^p , and $G(Z_h^p) \rightarrow \max_{0 \leq i \leq r} G(Z_i^p)$ (that is, we find a set of projects on which the function of usefulness accepts the maximum value).

If the function of usefulness accepts the maximum value for several sets of projects, the new interaction will be required:

$$H = \{Z_{h_1}^p, \dots, Z_{h_j}^p\}, G(Z_{h_1}^p) = G(Z_{h_2}^p) = \dots = G(Z_{h_j}^p) = \max_{0 \leq i \leq r} G(Z_i^p), j \leq r, \quad (5)$$

In consequence of this, the other set of projects from the set H is chosen, and the cost of realization is minimum, that is $C_{h_b}^p \rightarrow \max_{1 \leq a \leq j} C_{h_a}^p$.

The objectives are realized with classical simplex method, thus investment resources on environmental protection at a rate of $S = 6451$ million UAH are distributed according to the projects (tab. 2) taking into account the priority of the cost of their realization.

According to table 2 the following results (tab. 3) are received.

Stage 4 allows to lead x_{ij} to 100-ball scale for calculation of the expected increment of an integrated index of the quality of environment after the projects implementation (tab. 4).

Further the vector of costs of projects is received: $c = (47,4; 472,9; 262; 22,2; 195; 350; 1718,7; 2209,6; 68; 200; 639,1; 1183,8)$ for the vector of projects $z = (z_1, z_2, \dots, z_{11}, z_{12})$, at a preset value of money $S = 6451$ mln. UAH, where the financial restrictions are presented by an inequality: $z \cdot c \leq S$.

Table 2

The list of nature protection projects taking into account their influence on the quality of the environment

Z ₁	The improvement of technological processes, including transition to alternative types of fuel, raw materials, energy resources.	47,4	Reduction	of emissions of volatile or-ganic compounds	on 0,4%
Z ₂	The construction and introduction of new gas-purifying installations	472,9			on 3,7%
Z ₃	The effective increase of existing clearing installations, including their modernization, reconstruction and repair	262,0			on 1,4%
Z ₄	The elimination of the sources of pollution	22,2			on 0,2%
Z ₅	Reconstruction and technical re-equipment of the installations for ashes catching.	195,0			on 1,3%
Z ₆	The construction of water treatment facilities	350	Reduction	of dumpings of polluting substances in the water which has been taken away from natural sources	The increase of power efficiency on 0,3%
Z ₇	The construction and reconstruction of sewer systems treatment facilities	1718,7			on 1,4%
Z ₈	Protection of surface water by ordering of the systems of water disposal	2209,6			on 2,6%
Z ₉	The introduction of water purification installations of the subjects of managing	68			on 0,07%
Z ₁₀	The construction of the waste-processing enterprises	200			of areas under solid household waste for 0,3%
Z ₁₁	The protection and soil recultivation, restoration of underground and surface water	639,1			of squares of the polluted sites at 0,8%. and dumpings of polluting substances in the water which has been taken away from natural sources for 0,5%
Z ₁₂	The improvement of waste using	1183,8			of areas under solid household waste for 1,5%

Table 3

The values of the ecological parameters influencing the quality of the environment before implementation of the projects

The ecological parameters		
Projects	Before the project realization	After the project realization
Emissions of volatile organic compounds		
z_1	$x_{22} = 58,235$	$x_{22} = 58,00206$
z_2	$x_{22} = 58,235$	$x_{22} = 56,08031$
z_3	$x_{22} = 58,235$	$x_{22} = 57,41971$
z_4	$x_{22} = 58,235$	$x_{22} = 58,11853$
z_5	$x_{22} = 58,235$	$x_{22} = 57,47795$
Power efficiency		
z_6	$x_{56} = 26,19$	$x_{56} = 26,26857$
Dumpings of polluting substances in the water which has been taken away from the natural sources		
z_7	$x_{31} = 24,9$	$x_{31} = 24,55$
z_8	$x_{31} = 24,9$	$x_{31} = 24,2526$
z_9	$x_{31} = 24,9$	$x_{31} = 24,88$
The area under solid household waste		
z_{10}	$x_{37} = 0,11$	$x_{37} = 0,10967$
Squares of the polluted sites and dumpings of polluting substances in the water which has been taken away from natural sources		
z_{11}	$x_9 = 185,4$ $x_{31} = 24,9$	$x_9 = 183,9168$ $x_{31} = 24,7755$
The area under solid household waste		
z_{12}	$x_{37} = 0,11$	$x_{37} = 0,10835$

Table 4

The calculation of increments of an integrated index of the quality of the environment

Project	Ecological parameters		$Y(z_k) - Y(0)$
	Before the project realization (100-ball scale)	After the project realization (100-ball scale)	
z_1	$x_{22} = 35,29$	$x_{22} = 35,55$	0,003106
z_2	$x_{22} = 35,29$	$x_{22} = 37,69$	0,028729
z_3	$x_{22} = 35,29$	$x_{22} = 36,20$	0,010871
z_4	$x_{22} = 35,29$	$x_{22} = 35,42$	0,001553
z_5	$x_{22} = 35,29$	$x_{22} = 36,14$	0,010094
z_6	$x_{56} = 43,65$	$x_{56} = 43,78$	0,001899
z_7	$x_{31} = 37,75$	$x_{31} = 38,62$	0,065363
z_8	$x_{31} = 37,75$	$x_{31} = 39,37$	0,121388
z_9	$x_{31} = 37,75$	$x_{31} = 37,79$	0,003268
z_{10}	$x_{37} = 45,00$	$x_{37} = 0,033825$	0,033825
z_{11}	$x_9 = 38,20$ $x_{31} = 37,75$	$x_9 = 38,69$ $x_{31} = 38,06$	0,124696
z_{12}	$x_{37} = 45,00$	$x_{37} = 45,83$	0,169125

With the use of criterion function $A(\bar{z}) = \sum_{k=1}^{12} (Y(z_k) - Y(0))z_k \rightarrow \max$ – we establish the possibility of implementation of the project: partially, completely or refusal (if $z_k = 0$, that is why k -project is excluded from an optimum set of projects).

The numerical results of the solution of a task allowed to establish an optimum set of projects (tab. 5).

Thus, the implementation of the designated projects will provide the quality of environment improvement on 0,543125 balls with expenses 6397, 2 million UAH that makes 99,5% of all available sum.

Table 5

The results of calculation of an optimum set of projects

Projects	Recommendations
The improvement of technological processes, including transition to alternative types of fuel, raw materials, energy resources., z_1	0
The construction and introduction of new gas-purifying installations, z_2	1
The effective increase of existing clearing installations, including their modernization, reconstruction and repair, z_3	0
The elimination of the sources of pollution, z_4	0
Reconstruction and technical re-equipment of the installations for ashes catching, z_5	0
The construction of water treatment facilities, z_6	0
The construction and reconstruction of sewer systems treatment facilities, z_7	1
Protection of surface water by ordering of the systems of water disposal, z_8	1
The introduction of water purification installations of the subjects of managing, z_9	0
The construction of the waste-processing enterprises, z_{10}	1
The protection and soil recultivation, restoration of underground and surface water, z_{11}	1
The improvement of waste using, z_{12}	1

The conclusions:

1) in connection with the inefficiency of investment resources use in the nature protection projects the model of optimum distribution of these funds is developed;

2) the models of two types are offered: one which shows only the change of the environment qualities and the other which simultaneously shows the change of the environment quality, expenses and financial resources and allows to optimize a set of projects on the environmental protection;

3) the implementation of the offered projects with the help of optimizing model will provide the increase of an integrated index of the environment quality on 0,54 units.

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Александров І. О., Кравець О. О. Вибір привабливого варіанту інвестування природоохоронних проектів

Рекомендовано методи вибору раціонального природоохоронного проекту при обмежених фінансових ресурсах. Основою методу є функція корисності. Критерієм оптимальності прийнято індекс якості навколишнього середовища, який є основою забезпечення інформацією осіб, що приймають управлінські рішення на всіх рівнях ієрархії, сприяння саморегулюванню процесу інтегрування підсистем навколишнього середовища задля формування умов сталого розвитку суспільства.

Доведено, що використання методу екстремального угруповання ознак та стандартизації даних дозволяє створити моделі змінювання якості навколишнього середовища.

Ключові слова: навколишнє середовище, екологічний проект, модель, якість.

Александров И. А., Кравец Е. О. Выбор привлекательного варианта инвестирования природоохранного проекта

Рекомендованы методы отбора рационального природоохранного проекта при ограниченных финансовых ресурсах. Основой метода является функция полезности. Критерием оптимальности проекта служит индекс качества окружающей среды, который является основой информационного обеспечения лиц, принимающих управленческие решения на всех иерархических уровнях и способствует саморегулированию процесса интеграции

подсистем окружающей среды для формирования условий устойчивого развития общества.

Доказано, что использование метода экстремальной группировки признаков и стандартизация данных позволяет создать модели изменения качества окружающей среды.

Ключевые слова: окружающая среда, экологический проект, модель, качество.

Aleksandrov I. O., Kravets O. O. The Choice of an Attractive Investment Option the Environmental Project

Recommended methods for selecting environmental management project with limited financial resources. The method is based utility function. The optimality criterion of the project serves as an index of environmental quality, which is the basis of the information support of persons making management decisions at all levels of the hierarchy and contributes to the regulation of the process of integration of the subsystems of the environment for the formation of conditions of stable development of society.

It is proved that the method of extreme groups of signs and standardization of data allows you to create a model of change in environmental quality.

Keywords: the environment, the environmental project, the model, quality.

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DEVELOPMENT OF SOCIAL ENTERPRISES AS A WAY OF MITIGATING THE SOCIAL SITUATION IN THE DONBASS

Significant losses of economic potential and the human capital in the Donbass are the consequences of political crisis and military opposition in the East of Ukraine. Modernization of economy and restoration of social stability in the region after the end of the antiterrorists operation will require elaborating of special measures of economic and social policies. In doing that, it is necessary to agree with opinion of Jean-Paul Fitoussi and Joseph Stiglitz that “the design of good policies can’t be grounded on the artificial separation between social policies and macroeconomic ones...” [1, p. 15]. The economic goals of the measures for the Donbass’ renaissance and economic restructuring will connect directly to increasing of competitiveness and attractiveness of the region for investors and high quality labour force. However, increasing of the regions competitiveness and attractiveness means improving the quality of life of its inhabitants. In turn, the community's quality of life also depends on the level of integration into employment and social inclusion of population of the disadvantaged communities. In order to tackle with the unemployment and social disintegration in the Donbass region it would be useful to put into effect a comparatively new for Ukraine social innovation that engages additional resource – social initiative of residents of the localities and groups of interest. This social innovation is social entrepreneurship and social enterprises that broadly recognized as a new approach for mitigating of unemployment, poverty, lack of public finances for social services, especially in former socialist countries [see, 2 – 7].

The potential contribution of social enterprises to work integration, job creation, and service delivery remains largely unrealized in Ukraine as well as in other CIS countries, particularly in relation to disadvantaged groups including the long-term unemployed, ex-criminals, people with disabilities, internally displaced persons and ethnic minorities [6, p. 6]. The situation in the Donbass is worse due to closure or bad operating of many enterprises, especially of small ones, and absence of public funding for so-called "budget" organizations that is shrinking the demand on production and services of SMEs. One have to take in account that the growth potential of SMEs in the region, especially in coalminers’ settlements has been greatly underused even in peacetime [7, p. 120 - 124]. Thus, the niche for development of social enterprises in the region is considerable. On the other hand, a significant opportunity for the development of social enterprises in

the Donbass confirmed by activation of the volunteer movement on both sides of the military confrontation there. Moreover, new approaches like an encouraging of social enterprises are needed to tackle major social issues during the declared reforms of social security in Ukraine, “... most especially in the presence of the systematic retreat of the governments from the provision of public goods in the face of new political ideologies that stress citizens’ self-sufficiency and give primacy to market-driven models of welfare” [8, p. 1].

The phenomenon of social enterprise / entrepreneurship emerged long before its theoretical generalization as a practical activity due to development of the cooperatives movement and evolution of the third sector (NGOs) towards commercialization and involvement into public service provision, as well as in rare cases in result of spin-off of social activity and related assets from business corporations. The concept of social enterprises have been widely discussed in academic circles and literature mainly in the OECD countries since the early 90s of the last century [9]. Since then, the social enterprises have found strong enough recognition in academic and political circles, reflected in the curricula of universities and business schools, entrenched in the legislation of individual countries and in the regulations of the European Union, as well as appropriate public agencies for support this business have been created. Various private foundations have set up training and support programmes for social enterprises or social entrepreneurs. Moreover, there were research centres for social enterprises initiated in many countries and international ones under umbrellas of the OECD office (Centre for Entrepreneurship, SMEs and Local Development) and European Commission (the EMES European Research Network in 1996. Formally established as a non-profit association (ASBL under Belgian law) in 2002 and named after its first research program, on “the emergence of social enterprises in Europe” (1996-2000), EMES was originally composed of European university research centers and individual researchers. After many years of collaborative research and projects jointly conducted with researchers from other regions, EMES has decided in 2013 to open its membership to researchers from around the world¹). In 2001 leading Latin-American business schools and the Harvard Business School established the Social Enterprise Knowledge Network (SEKN) [9].

¹ See: <http://emes.net/who-we-are/>

The clusters of business entities and persons registered as social enterprises or social entrepreneurs have been referring in official documents, analytical reports, academic papers and reflecting the statistics of different countries as a separate economic sector under the name: Social Economy (European Union, Francophone Canada), Solidarity Economy (Latin America), People's Economy (Pacific Asia), Associative Movements (Muslim countries), Civil Society Economy (South Africa), and Community Economic Development (Australia, Anglophone Canada, New Zealand, USA).

Now the concepts of social economy, social entrepreneurship and social enterprise are attracting many scholars and policy makers in wide range of societal sciences (sociology, political studies, economics, and management) which are showing a clear research interest more than a decade later in order to address to modern social challenges. Among them are C. Borzaga, J. Defourny, L. Favreau, J. Hausner, M. Huysentruyt, G. Galera, A. Kaderabkova, J.-L. Laville, M. Mendell, F. Moulaert, R. Nogales, M. Nyssens, V. Pestoff, E. Rudyk, R. Spear, and others. The research activities were concentrated on such topics as reasons for emerging and evolution of the social economy (SE) as well as its role and concrete areas for support of socio-economic sustainable development [6; 9 – 11], legal, financial and organizational issues of diverse legal forms of SE subjects functioning [10; 13 – 15]. Recently in publications devoted to the SE topic, more clear emphasis is made on connection of social enterprises and entrepreneurship with innovation activity [3; 13 – 16].

In last decade, the topic of social entrepreneurship becomes more common in public life and scientific research in Ukraine. A significant contribution to the promotion social entrepreneurship in Ukraine make the Social Enterprise Support Center set up in October 2010 at the SESP Association¹, and the Resource Center "Social Initiative" created in September 2012². These Centers were founded under the joint initiative of the British Council in Ukraine, East Europe Foundation, PricewaterhouseCoopers in Ukraine, Erste Bank and the International Fund "Renaissance" (the project "Development of social entrepreneurship in Ukraine"). However, the publications on the web sites of the Centers as well as in special literature on economics and sociology are mostly describing practical examples of social enterprises in the country and Western experience of social economy development, as well as some training materials on the topic. A rare exception are publications [17 – 19] that attempted to generalize the theoretical foundations of the concept of the social economy in relation to the Ukrainian realities as well as to define measures to creating institutional and eco-

nomical environment friendly for social enterprise development in the country [20 – 23].

The aim of the paper is to investigate the European experience of social enterprises disseminating, i.e. the definition of social enterprises, their legal forms, forms of social enterprises support, as well as to explore how this experience could be applied in Ukraine, especially in the Donbas region.

The development of social enterprises and corporate social responsibility are the constituent parts of such a concept as social entrepreneurship, that "...blurs traditional boundaries between institutional sectors, public and private, types of innovations, and their creators and users" [3]. Under that definition, the entrepreneurs' activity addressed social issues in which profits serves as a tool to achieve this goal is understood [5]. More broad definition gives the publication of the Secretariat of the OECD Centre for Entrepreneurship, SMEs and Local Development: "Social entrepreneurship – a type of entrepreneurship that aims to provide innovative solutions to unsolved social problems and challenges. It often goes hand-in-hand with social innovation processes. Social entrepreneurs organise themselves across a wide spectrum of organisations which have an entrepreneurial approach and whose primary mission is to tackle social problems and generate radical or more limited social changes. Social entrepreneurship is therefore about solving social problems rather than exploiting market opportunities in order to maximise profits" [14, p. 222].

In Europe, despite the absence of universal and indisputable definition of the social enterprise [9; 14], this concept has been increasingly using to identify an alternative way of doing independent business, which occurs when an enterprise created in order to pursue primarily social aims while simultaneously carrying out commercial activities. Thus, a social enterprise differs from the phenomenon called corporate social responsibility (CSR) because of the priority goals pursued by the owners or creators of the company. In the case of CSR, social outcomes are secondary, while social enterprises resorting to commercial activity primarily to ensure financial stability for social activities.

The European Commission gives the term "social enterprise" the following meaning: "an operator in the social economy whose main objective is to have a social impact rather than make a profit for their owners or shareholders. It operates by providing goods and services for the market in an entrepreneurial and innovative fashion and uses its profits primarily to achieve social objectives. It is managed in an open and responsible manner and, in particular, involves employees, consumers and stakeholders affected by its commercial activities" [24].

Instead of seeking "an elegant short definition", the EMES European Research Network conceptual approach of social enterprise's definition preferred

¹ <http://sesp.org.ua/web/sesp/sesp-EN.nsf/0/B3F7CAF10DA9AC2257911005076A8>

² <http://socialbusiness.in.ua/>

from the outset the selection of nine indicators into three subsets (dimensions):

(1) the economic and entrepreneurial dimensions:

- a continuous activity producing goods and/or selling services;
- a significant level of economic risk;
- a minimum amount of paid work;

(2) the social dimensions:

- an explicit aim to benefit the community;
- an initiative launched by a group of citizens or civil society organizations;
- a limited profit distribution: the primacy of the social aim is reflected in a constraint on the distribution of profits;

(3) the participatory governance:

- a high degree of autonomy;
- a decision-making power not based on capital ownership;
- a participatory nature, which involves various parties affected by the activity [15, pp. 44-46].

The European Economic and Social Committee share this position: “The EESC understands that a clear definition is needed so that efforts can be focused, but rather than a definition, proposes a description based on shared characteristics such as:

- having *primarily social objectives* as opposed to profit objectives, producing social benefits that serve the general public or its members;
- being primarily not-for-profit, *with surpluses principally being reinvested* and not being distributed to private shareholders or owners;
- having a *variety of legal forms and models*: e.g. cooperatives, mutuals, voluntary associations, foundations, profit or non-profit companies; often combining different legal forms and sometimes changing form according to their needs;
- being economic operators that *produce goods and services* (often of general interest), often with a strong element of social innovation;
- operating as *independent entities*, with a strong element of *participation* and *co-decision* (staff, users, members), *governance and democracy* (either representative or open);
- often stemming from or being associated with a *civil society organization*” [5, p.2].

Nevertheless, how term “social enterprise” is defined, it comprises such legal forms of enterprises as cooperatives, associations, foundations, mutual benefit and voluntary organizations and charities [25]. Despite their diversity, social enterprises provide social services and contribute to integration unemployed and disabled people to work (e.g. training and integration of unemployed persons) thus assisting in the development of disadvantaged areas (especially remote rural and economically distressed areas).

While empirical evidence shows that social entrepreneurship is growing in many countries, measuring

it – like measuring the social economy, the third sector and the non-profit sector – is difficult. This is due not only to the variety of the entities belonging to the field, but also to the fact that these entities vary according to the geographical context and that countries recognise social entrepreneurship differently [14, p. 187]. According to web site of European Commission on 10/06/2015, there are 2 million social economy enterprises in Europe, representing 10% of all businesses in the EU. More than 11 million people – about 6% of the EU’s employees – work for social economy enterprises. They have different legal forms and various objectives ranging from agriculture and banking to provision of employment and sheltered workshops¹.

The role of social enterprises in spurring innovation, especially social ones has been recognised and reflected in strategic document of European Commission, launched in 2011 and named “Social Business Initiative. Creating a favourable climate for social enterprises, key stakeholders in the social economy and innovation” where is declared, in order to promote a highly competitive social market economy, the Commission “...has placed the social economy and social innovation at the heart of its concerns” [24, p.2]. Later the European Economic and Social Committee (EESC) has clarified the main actions of the Initiative: improving access to funding; increasing visibility of social entrepreneurship; improving the legal environment. To further, unlock the potential of this sector, the EESC calls for a supportive environment for social enterprises and for their better integration into all EU policies. In doing that partnerships with regional and local authorities, as well as social entrepreneurs themselves will play an important role [26].

The experience of the European Union, US and other OECD countries shows that social enterprises perform important functions for socio-economic development through:

- contribute to the development of local economy and society, offering certain opportunities for job creation and new forms of entrepreneurship and employment;
- help overcome social isolation (due to their possible activities for employment of handicapped or with mental disabilities people; those who been unemployed for a long time; former criminals and others);
- stepping up participation and voluntary work of citizens, strengthening thus the unity of the community;
- contribute to the development of a wide range of social services that are necessary for local society, but that does not of interest for business as usual (low-profit, activity connected to significant costs for personnel special training so on);

¹ http://ec.europa.eu/growth/smes/promoting-entrepreneurship/we-work-for/social-economy/index_en.htm

- reduce the burden on local budgets in solving social problems;
- improving the structure of social programs in the region.

By fostering of citizens' self-organization and supporting social enterprises whose activities are aimed at solving issues of communities, the local authority contributes to employment as well as self-employment, allows to diversify the process of social services providing to the inhabitants, strengthening integrity of local societies and social capital, thus significantly reduces the level of social tension. This answers not only to a criterion of social inequality reducing, but also to the aim of decreasing possible local conflicts and increasing social safety.

Another aspect is related to the fact that, by improving the level of work inclusion through support of social enterprises, the local government has the chance to divert resources to other activities or projects, which in the opposite case would be directed on social services delivering in general or on improving the living conditions of certain disadvantaged groups of inhabitants in the community.

Contemporary Ukrainian legislation does not provide a definition of social enterprise and does not include any specific normative acts regulating the activities of such enterprises. However, there are elements of Ukrainian law, which provide certain grounds for development of social enterprise (see [6, pp. 161 – 162]). For instance, enterprises of citizens' unions can be formed in accordance with Article 112 of the Commercial Code of Ukraine and with Article 20 of the Law on Citizens' Unions for the realization of economic activities with the purpose of fulfilling their statutory goals. Non-governmental organizations of disabled people, set up according to the Law on Principles of Social Protection of Disabled people in Ukraine can have commercial and non-commercial activities. An important element contained in Ukrainian law is that the state, territorial centres and the public have the opportunity to control the statutory social activities of communal (non-commercial) enterprises and the way enterprises' profits can be used for socially significant goals.

The survey of the project [6] concluded that respondents at the regional level indicated the need to improve the legislative base regulating the activities of nongovernmental organizations and to develop and adopt a specific law on social enterprises. The government organization experts interviewed by the project share this view. However, the representatives of international organizations interviewed during the project's survey, proposed alternative way: to amend the civil code and tax code. In general, the majority of respondents highlighted the need to introduce tax privileges to stimulate the development of social enterprises [6, p. 162].

In April 2013 the Committee on Economic Policy of Verkhovna Rada of Ukraine considered draft law "On social enterprises", which was presented by the MP O. Fel'dman. According to the conclusion of the Chief scientific and expert department of the Parliament and the comments of the Committee members, the bill was rejected. We consider it appropriate to provide a citation from the expert conclusion placed on the Commission web site¹:

"In our opinion, the use of the term "social" to determine the type of enterprise isn't relevant, so far as mentioned term describes a certain relationship of business with society, that is inherent for any business, and not associated with any organizational form of enterprise, or the activities which it deals, or with any other conditions under which one kind of enterprise can be separated from others. In addition, when one is using this definition inadvertently seems that all other enterprises are "non-social", which is not true".

This quote shows that even experts of the Ukraine parliament does not understand the concept of social entrepreneurship, to say nothing of officials at regional and local levels. Thus, official recognition of social enterprise is necessary, whether adopting a special law or amendment to the Commercial Code and relevant laws.

Mr. O. Fel'dman in April 2015 again submitted to the Committee on Economic Policy of Verkhovna Rada of Ukraine the draft law "On social enterprises", while almost did not change its content [27]. We suggest that the draft of the bill needs substantial revision and improvements, the basic contents of which are summarized below.

1. The draft law that presented to the Parliament completely ignores the fundamental principle for social enterprises that recorded in the laws and regulatory documents of many countries and the European Commission. It refers to the prohibition or restriction of profit distribution for owners or shareholders of the business and reinvesting enterprises profits on its statutory social goals.

2. According to the draft, the status "social" will be assigned if an enterprise meets the following criteria:

(1) employment of persons assigned to socially vulnerable groups, if the proportion of which is at least half of the total number of employees; (2) provision of social services defined by the Law of Ukraine "On Social Services", if more than half of the recipients of those services are disabled people; (3) provide jobs and social services to persons from socially vulnerable groups, if the share of such persons is not less than 30

¹ http://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=46025

per cent of total number of employees and at least 30 per cent of recipients of social services are disable people; (4) sell goods and services socially vulnerable people at prices equal or below the self-cost of production; (5) investing in socially important projects.

Firstly, the range of possible applicants for the status of "social enterprise" significantly narrowed because number of beneficiaries is limited only socially vulnerable people.

Secondly, this set of criteria does not fit to such important social enterprises operating in some EU-member countries, USA and Canada as the Community Economic Development Corporation (CEDC) and the Community Interest Company (CIC). The CEDC and CIC in many countries play a significant role for the socio-economic recovery of depressed areas (see [28]), so they can be effective agents of economic restructuring and the restoration of social infrastructure in the Donbass.

Thirdly, the criterion of "investments in socially important projects" is vague and raises more questions than answers.

3. The draft law stipulates that social enterprise status granted by the Interdepartmental Commission on public support for social enterprises that suggested to be created. This corresponds to the practice of state support for social enterprises in some countries. For example, the Social Enterprise Unit operates within the British Department of Trade and Industry, also under the decision of the USA President B. Obama the White House Department of Social Innovation and Civic Participation was created. At the same time, given the declared profound decentralization of public administration in Ukraine, strengthening of local self-government and further democratization of public life, one can consider it appropriate to delegate the function of assignation of the social enterprise's status at a local level. To do this, local governments should create a public commission on social entrepreneurship in which representatives of the NGOs and social enterprises should be included. It is also needed to delegate the competence for providing various tax exemptions and preferences for social enterprises to the local level, given the fact that fiscal decentralization should pass taxes on profit as the main source of local budgets.

4. Article 9 of the draft law provides that "members (participants) of social enterprise which is formed by joint a property (property rights) have the right to participate in managing the company according to their stake (share) in the property company, unless otherwise provided statute". One keep in mind that this article does not meet the European practice of democratic management in social enterprise based on the principle of "one person - one vote". In addition, the vast majority of national legislation concerning social enterprises contains a provision that called "lock assets", under which the assets of the social enterprise is indivisible

(except ones that have legal form of cooperative, limited or share company), and in a case of closing is transfer to another social enterprise.

5. In conclusion, of the Chief scientific and expert department of the Parliament concern the draft law "On Social Enterprise" made observations on that draft chapter IV "State support of social enterprises" contains five articles, four of which are not related to state support. It should accept. Moreover, it should be noted that the represented in the draft measures for support of social enterprises are, with no specific view general list of these measures: "... tax benefits while taking investment, privileges in land issues, returnable and non-repayable financial assistance, loans, facilitate to grant priority when placing public orders and the performance of state programs».

Taking in account previous comments on the transfer of competence for the regulation of social entrepreneurship at the local level, we can conclude the following:

- The law "On social enterprises in Ukraine" should play the role of framework document that defines the essence of subject, the basic criteria and procedures for granting the status of a social enterprise, the main responsibility of government and regional public authorities for promoting social enterprises. Due to absence of national social enterprise concept, it will be better on the initial stage of social enterprise legitimating to adopt the EMES European Research Network concept of social enterprise. This would allow elaborating the national one eventually.

- Concerning the issues of creation, registration, closure of social enterprises – these questions should be addressed in accordance to the regulatory norms relevant for the organization-legal form that have chosen by specific social enterprise;

- The concrete measures for social enterprises support have to be initiated by regional and local authorities based on the real opportunities for funding this support. Such initiatives can be incorporated in traditional practice of elaborating 2-year programs for small and medium size business development by oblast's administrations and local authorities.

- Appropriate forms of social enterprises support can be chosen by regional and local self-governments based on their possibilities from listed below:

- Specific enabling legal, fiscal, and regulatory environments might be needed for social entrepreneurs, according to the form that their initiatives take. For the Donbass region, it is needed urgently to determine such environments that is friendly for social enterprises like the Community Economic Development Corporation and the Community Interest Company.
- Public procurement measures should be developed so that social enterprises can consolidate and expand their growth.

- Support market development for social enterprise and provide training for public officials and social enterprises to deal with public tenders.
- Offering fiscal incentives to attract investors for social enterprises start-up and offering multiple forms of credit enhancement;
- Provide training and learning to social entrepreneurs and comprise social entrepreneurship in school and university curricula;
- Evaluating the impact of social entrepreneurship development in selected areas and conducting research in order to assess the different needs of the entities belonging to the social economy sector.

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- Лях О. В. Розвиток соціальних підприємств як спосіб пом'якшення соціальної ситуації у Донбасі**
- Мета статті полягає в дослідженні європейського досвіду поширення соціальних підприємств, тобто визначення соціальних підприємств, їх організаційно-правових форм, підтримки соціальних підприємств, а також визначені, як цей досвід може бути застосований в Україні, особливо в регіоні Донбас. Висновки з дослідження забезпечують більш цілісне розуміння зростання сектору соціального підприємництва в країнах ОЕСР. Це додає до розуміння теми дослідження у місцевому контексті, висуває рекомендації про те, що потрібно, щоб узаконити соціальне підприємство в Україні, і дозволяє визначити, які заходи є необхідними для зміцнення зростання сектору соціальних підприємств в Україні і в Донбасі, який страждає від військового конфлікту. Результати полегшують майбутні дослідження і практичну діяльність, пов'язану з соціальними підприємствами, долаючи перешкоди, викликані відсутністю юридичного визнання загальноприйнятого у ЄС визначення соціального підприємства, соціального підприємництва, а також відсутністю національної статистики соціальних підприємств та державної політики в галузі розвитку соціальних підприємств, навіть у разі Донбасу, який терміново потребує зростання цього сектору.
- Ключові слова:* соціальне підприємство, соціальне підприємництво, соціальна економіка, третій сектор, неприбуткові організації, соціальні інновації, ЄС, Україна, Донбас.
- Лях А. В. Развитие социальных предприятий как способ смягчения социальной ситуации в Донбассе**
- Цель статьи заключается в исследовании европейского опыта распространения социальных предприятий, т.е. определения социальных предприятий, их организационно-правовых форм, под-

держки социальных предприятий, а также в установлении, как этот опыт может быть применен в Украине, особенно в регионе Донбассе. Выводы исследования обеспечивают более целостное понимание феномена роста сектора социального предпринимательства в странах ОЭСР. Это способствует интерпретации темы исследования в местном контексте, выбору рекомендации относительно того, правового закрепления социальных предприятий в Украине, и позволяет определить, какие меры необходимы для ускорения роста сектора социальных предприятий в Украине и в Донбассе, который страдает от военного конфликта. Полученные результаты облегчают будущие исследования и практическую деятельность, связанную с социальными предприятиями, преодолевая препятствия, вызванные отсутствием юридического признания общепринятого в ЕС определения социального предприятия, социального предпринимательства, а также отсутствием национальной статистики социальных предприятий и не принятием государственной политики поддержки развития социальных предприятий, даже для Донбасса, который остро нуждается в росте этого сектора.

Ключевые слова: социальное предприятие, социальное предпринимательство, социальная экономика, третий сектор, некоммерческие организации, социальные инновации, ЕС, Украина, Донбасс.

Lyakh O. V. Development of Social Enterprises as Way of Mitigating the Social Situation in the Donbass

The aim of the paper is to investigate the European experience of social enterprises disseminating, i.e. the definition of social enterprises, their legal forms, forms of social enterprises support, as well as to explore how this experience could be applied in Ukraine, especially in the Donbas region. The findings from the research provide a more holistic understanding of growth of social enterprise sector in the OECD countries. This detail adds to an understand the researched topic in the local context, puts forward recommendations on what is required to legitimize social enterprise in Ukraine, and allows to determine what measures are appropriate for fostering social enterprises sector growth in Ukraine and in the region Donbass which is suffering from military conflict. Outcomes facilitates forthcoming research and practical activity connected with social enterprises by overcoming the handicaps caused by the lack of legal recognition commonly acceptable in EU definitions of social enterprise, social entrepreneurship as well as the absence of a national statistics of social enterprises and state policy for development of social enterprises, even in case of the Donbass that is urgently needed this sector growth.

Keywords: social enterprise, social entrepreneurship, social economy, third sector, non-for-profit organizations, social innovations, EU, Ukraine, Donbass.
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THE CLASH OF CAPITALS: UKRAINE AS VICTIM NATIONAL AND GLOBAL PROCESSES

The development and transformation of the world-system [1] is characterized by a clash between capitals, which are manifested in mutually contradictory processes of cooperation and competition at all levels (micro-, macro- and global). These processes on the one hand provides the progress of social development, and on the other are the cause of various kinds of disasters in socio-economic life of peoples and Nations from economic crises to local and global armed conflict. First World War is classic example of large-scale military conflict as result of clashing capitals at global level [2, p. 299-426]. A. Buzgalin notes analogy: "clash in Ukraine is a miniature "farcical" copy of the tragic situation prevailing in Europe before the First World War" [3]. It is not allowing increase wealth of Ukraine [4].

The research of this problem is due to her importance to economic, social and geopolitical sides for Ukraine. This confirms a significant number of scientific publications. However, the simultaneous analysis of the role of capital in this process at the global and national level have not been conducted, which led to the choice of research objectives and its novelty.

The aim of this study is to systematize the basic processes of concentration of national capital in Ukraine, evaluation of its role in the global confrontation of capital and their aggregate impact on the crisis. As a theoretical basis for the research used the theory of evolution, and the methodological approach the ascent from the abstract (the interaction of capitals) to specific (the clash of capital directly in Ukraine and around it).

In this article, capital is defined as "self-expanding value," which "can be understood only as motion, not as a thing that dwells alone" [5, p.121]. Capital is constantly striving to reproduce itself and increasing (expansion) at maximum speed. Description priority essential characteristics of capital successfully fits the statement of the famous capitalist C. Rhodes "expansion is everything" [6, p.52].

The principal difference capital from a self-employed entrepreneur is freedom in decision making. Self-employed entrepreneur can operates on their own on the free market, the public or voluntary sector, and at any time to terminate its activity. Individual capital is integral part of the capitalist world-system. One is fully subordinated to the universal rules and can act only according to them. Therefore, the will of the individual, as a representative of big capital, is significant-

ly limited. Generally accepted indicators of business performance (profitability, market share, etc.) and existing rules (qualification requirements for personnel, environmental standards, etc.) prevail over the logic of managerial decision-making representatives of big capital.

According to evolutionary theory of economic transformations the interaction of aggregate capital (and individual firms) is determined according to the rules (1) the behavior of individual capital, (2) interaction of capitals among themselves, (3) the emergence of new capital, (4) leaving the existing system of aggregate capital (by analogy [7, p.13]).

Among the methods of implementation of these rules, you can select a number of essential characteristics. The behavior of individual capital (rule #1) can be described as intensive and extensive way. Intensive way involves the increase of capital due to a more productive use of factors of production. The extensive way is realized due to the absorption or submission of other capital.

Capitals are always interacting as competitors or as partners. A special case is the one desire of capital to subjugate another, or to resist a hostile mergers and acquisitions. Thus the highest form of cooperation can be considered a mutually agreed merger of capital.

Implementation of rule (2) of the interaction of capitals among themselves depends on their size (scale). If the capital "A" significantly more capital "B" and they will interact, the capital "A" will seek to absorb the capital "B". At the same time the capital "B" would oppose a hostile acquisition. If the capital "A" is commensurate with the size of the capital "B", then the interaction will occur without the submission attempts one capital by another and potential for cooperation will be higher.

The emergence of new capital (rule #3) takes place through the isolation (separation) from existing now capital (through privatization; at least – as a result of activities of competition authorities or voluntary fragmentation of capital by decision of the owners or shareholders). An alternative version of the origin of capital is creating it from scratch through the use of redistributed added value in the form of investment or pure cooperation of living labor.

M&A is the main way of leaving of the certain capital from the existing system of capitals. It should be noted that nationalization is a transition under the control of the state capital. The second way out of the

current system of capitals is the actual (physical) elimination of capital, without further productive use of their material or intellectual components.

Generalization for implementations of the rules is presented in Table 1.

Table 1

The main ways of implementation of the rules of interaction of capitals

<i>Rule</i>	<i>The main ways of implementation of the rules</i>
(1) the behavior of individual capital	- extensive expansion - intensive expansion
(2) interaction of capitals among themselves	- competition (for resources, for markets, etc.) - co-operation within the value chain; advocacy of common interests, etc.) - absorption (M&A) - counteraction to the acquisitions
(3) the emergence of new capital	- the isolation (separation) from existing now capital - creating capital from scratch
(4) leaving the existing system of aggregate capital	- acquisition - liquidation (bankruptcy without further use of the material or intellectual component)

The behavior of individual capital causes the rules of its interaction with other capitals. So intense method of expansion of capital leads to cooperation with other capitals; extensive - to clash with other capitals on the inside or outside of the arena.

According to described logic below is an analysis of the interaction of capitals inside Ukraine (inclusive Donbass) and on the international level.

Clash of the national capitals in Ukraine

The transformation of Ukraine's economy from a socialist to a capitalist model in the beginning of 90-s of the 20th century was accompanied by an attempt civilized concentration of capitals by means of "vouchers". This reform failed. The accumulation of capital began to pass beyond the right field. As a result, the formation and interaction of capital was related to the overall economic situation of the country and the dynamics of its changes (Fig.1)

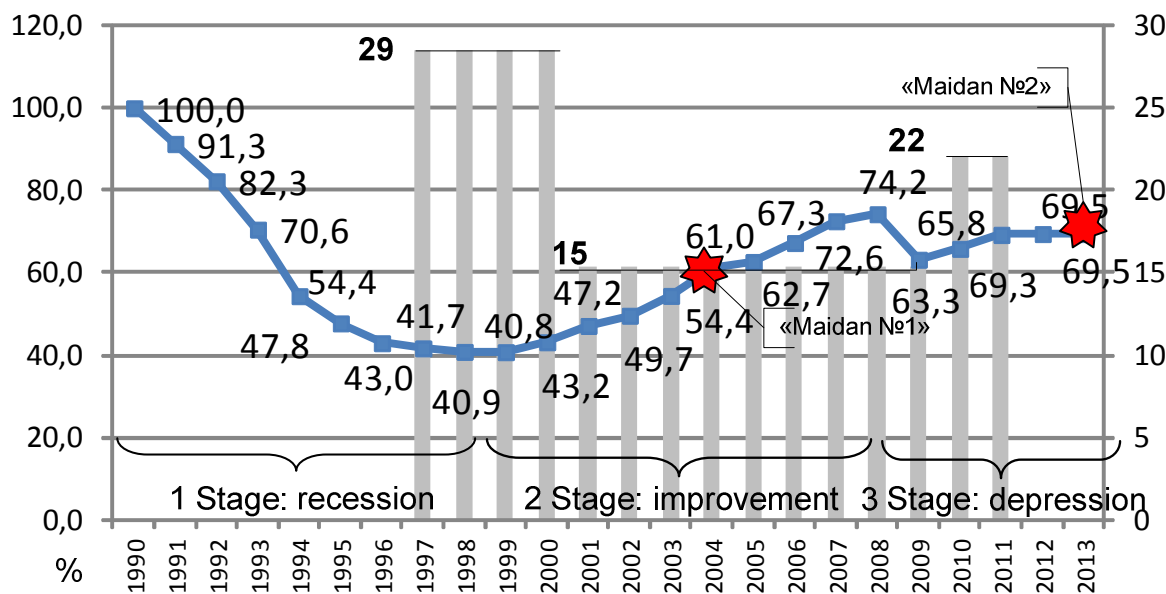


Fig. 1. Dynamics of Ukraine's GDP 1991-2013 in % to 1990 [8] and the average number of ordered assassinations in Ukraine in 1997-2011 [9]

Acute phase uncivilized (criminal) capital acquisitions each other was passed in 1995-1996 [10] for a couple of years to a peak of falling of economy of Ukraine (1998-1999). The transition to conditionally

legal way interaction of capital became one of the factors for future economic growth.

When Ukraine's economy entered the recovery phase (2000-2008), the number of assassinations is

dramatically reduced. Capitals begin to prefer to resolve disputes in the courts and through the growing influence of the Central authorities and local self-government. The most common formula for the increment of capital becomes "Money", "Power" - "the Money plus". Each capital seeks to invest in elections and lobby for the appointment of the necessary officials for the proper conduct of privatization tenders and public procurement.

Therefore, in the framework of natural selection entrenched scheme "investment in strengthening political influence" - "privatization of state-owned asset below market value" - "borrowings, secured previously privatized asset" - "using the main part of the funds in the privatization of a new asset, and the remaining part on the modernization of previously privatized asset". Moreover, privatization is always the first place, because the profitability of capital investment and the rate of increment are higher.

A consequence of this interaction was the formation of financial-industrial groups and the desire of capital to vertical integration to ensure independence from other capitals and reduce the potential for re-privatization through the transfer of non-productive functions of the management company (e.g., accounting, procurement, sales, recruiting, etc.).

According to the results of the power struggle all major Ukrainian capital at each moment of time is divided into "Pro-government" and "opposition". The political cycle of elections synchronized with the aggravation of confrontation between these groups of capital. Thus, only in the context of economic growth was made possible bloodless transfer of power according to the results of the "Maidan #1".

Such a behavioral model of capital in Ukraine led to the fixation technologically outdated structure of the economy that limited the possibilities to ensure its social orientation [11]. This is clearly seen in the comparative analysis of the contribution of different technological paradigms in the structure of Ukraine's economy and major national economies, who are selling their interests in Ukraine (table 2).

Table 2

Waves of technological innovations in the structure of the economy [12, p.26]

Country	The wave of technological innovations, % in the economy of the country			
	III	IV	V	VI
USA	10	20	60-65	5-7
Russia	25-30	55-60	15-20	1,5
China	30-35	40-45	30-35	3
Ukraine	55-60	30-35	5-7	0,1

In Ukraine dominates the third technological wave, the core of which includes the production and rolled of steel, the export of which is the main source

of foreign exchange earnings of the country. And it's basis of the formation of the leading financial-industrial groups.

A typical illustration of the focus on freezing the current structure of the economy can be considered to be developed by consulting company Monitor group (under the auspices of the SCM group) on the threshold of the crisis of 2008 strategy for the development of the Donbass region until 2025 ("The Donbass 2025: strategy for the future"). According to this strategy the main directions of economic development of the Donetsk region must be become metallurgical and agro-industrial clusters, which is fully consistent with the interests of the financial-industrial group SCM and APK-invest, but did not improve the manufacturability of the economy of the region and the country. As noted by the incumbent at that time the head of the Donetsk regional state administration V. Logvinenko "selected key clusters, in fact, a "conservation" the existing structure of the regional economy" [13].

Thus, it can be argued that the Ukrainian capital is not able to respond constructively to the challenges of modernity on ensuring the structural transformations and the fact has exacerbated the crisis, because the outdated structure of the economy has reduced the opportunities for the intensive use of capital and contributed to its aspirations for extensive expansion.

As a result of transformation of economy of Ukraine during the 1st and 2nd stage 1991-2008 there's a certain profile for major Ukrainian capital (table 3), which differs significantly from the profile of a typical large-scale capital into other countries with its focus on the use of the state for internal expansion instead external one.

Table 3

Profile of major Ukrainian capital

Way of implementation of evolutionary rule	The dominant characteristic
(1) Way of expansion capital	Extensive extension
(2) Way of the interaction of capitals	Absorption of other capitals inside the country
(3) Way of emergence of new capital	Separation from existing capital (usually it's separation from state capital)
(4) Way of leaving the existing system of capitals	Hostile takeover

At the end of 2008 the economy of Ukraine enters a phase of recession. As a consequence, the ability of capitals to agree among themselves is decreasing. The voltage between the capital increases. Against this background, President Viktor Yanukovich from 2010 begins to form his own major business, and that led to the main difference between the "Maidan #1 (2004)

and "Maidan #2" (2013). If first Maidan in 2004 pursued as a goal the change of roles between the capital that has the maximum impact on power and capital in the "opposition". Maidan #2 had additional goal in the form of the elimination of immature player. And the "opposition" and "Pro-government" capital resisted the formation of a new oligarchic group i.e. the transformation of power in the money in the personal interests of President Viktor Yanukovich, and not capital, which brought him to power. As a result, "pro-government" capitals as at the end of 2013, took a neutral position relatively events on the Maidan #2", as evidenced by the information policy of controlled them media.

Thus, it can be argued that the hard clash of capitals in Ukraine is a natural event in the framework of an evolutionary theory of economic transformations. However, the extension of the conflict to the scale of military confrontation in Donbass was caused by clash of capitals on global level in the same time.

The role of global capitals in the development of the crisis in Ukraine

Given the minor role of the Ukrainian economy in the world (by PPP GDP of Ukraine is 0.39% of global GDP) the global level largely determines the socio-economic processes in Ukraine.

Currently on the territory of Ukraine are actively implementing their interests, the representatives of the three poles of concentration of capital: the USA, the

EU (primarily capitals' of German and French), Russia. Although the Chinese's capital is not actively lobbying for its interests in Ukraine, however, playing an important role at the global level and so it should be considered. The strength of capital of these countries can be assessed as a share of GDP at purchasing power parity in the global economy. The share of US is 16.45%, China - 15.84%, Germany – 3.45%, Russia – 3.43%. Consequently, the amount of the Ukraine's capital inferior to the amount of capital U.S. in 43 times, China – 41, Germany and Russia – in 9 times. We have the proportion: capital of U.S.: capital of China : capital of Germany : capital of Russia : capital of Ukraine= 43 : 41 : 9 : 9 : 1. Thus, the Ukrainian's capital interacts and is opposed to global capitals, each of which are significantly greater in scope (Fig. 2). Moreover, the importance of trade cooperation between the global capitals is above interaction with the Ukrainian's capital. For instance, the volume of trade of Russia and the Ukraine less than Russia and Germany more than 2 times.

The relationship between capitals should be considered from the perspective of benefits and costs for each of them. This allows characterizing the motivation of the individual capitals. As a measure of influence of one national capital to another one selected ratio of trade (imports plus exports) to GDP PPP international dollars. Thus, the relationship of larger and smaller capital is characterized by a more significant influence of the first on the second, and accordingly, the less significant the influence of the second to the first.

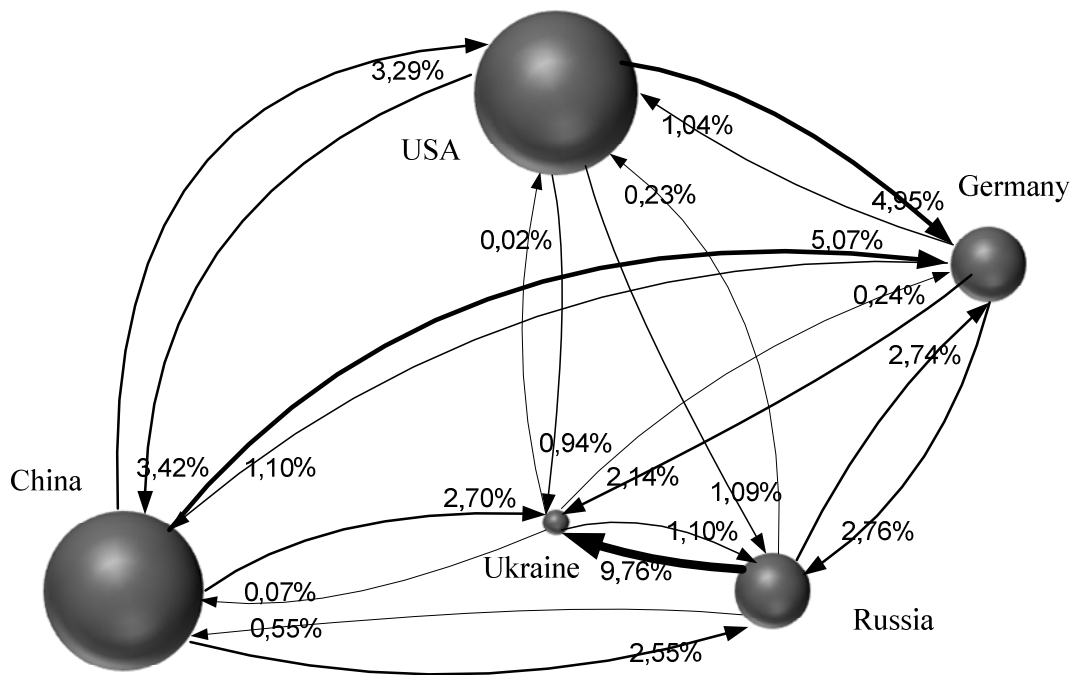


Fig. 2. The mutual influence of capital on a global level¹

¹ Figure compiled by the author as a result of generalization of the following sources of information: [14-17].

Dominant position in the world is the U.S. capital through its management of global financial capital. The main purpose of the capital of the U.S. is at least to maintain the status quo in the world. It's assumes continued use of the US dollar as the main reserve currency and means of international trade settlements and related financial infrastructure, including rating agencies, stock exchanges, insurance institutions, etc. At the same time a it's searching for opportunities to expand the use of capital. Trading relations of US are essential for Germany. Its trade with the United States is about 5% of GDP. The effect on equity of China is more than 3% of GDP, and Russia and Ukraine about 1% of GDP. The capital of the USA is substantially dependent only from China, and to some extent from Germany. At the same time, the trade links capital of the USA with the Russian capital is minimally (0.23% of GDP), and from the Ukrainian capital is negligible (0.02% of GDP). This situation allows USA capital is using sanctions against smaller capitals without painless for yourself.

The realization of these aspirations necessitates: 1) leave in a subordinate position (at least normatively) Chinese, European and Russian capitals; 2) minimization of cooperation between the German (European) and Russian capitals; 3) creating a Transatlantic Free Trade Area (TAFTA) with the EU. Все три пункта взаимно зависимы. Disintegration of German and Russian capitals, which can be implemented at the expense of military-political conflict in Ukraine, increases the probability of creating a transatlantic free trade area and as a consequence strengthening the leading position of capital of the USA in the world.

Foreign trade relations of Germany heavily depend on China and the United States. The importance of trade relations with Russia is twice lower. The role of the Ukrainian's capital is not significant for Germany.

In the framework of the described linkages the German's capital has the following priority interests:

- 1) to limit the growing influence of the USA's capital through braking formation of TAFTA, the creation of which is being postponed;
- 2) to gain profit from cooperation with Chinese and Russian capitals;
- 3) to subjugate the Ukrainian's capital and commodity market.

Russian capital, on the one hand, wants to weaken the control of the financial capital of the USA, continue the cooperation with German and Chinese capital and to deepen it, and subjugate the Ukrainian capital based on existing significant impact on trade (9.76% of Ukraine's GDP).

Russian capital gains from moderate military and political instability in Ukraine, because in this case decreases the probability of the inflow of Western capital into this territory and the risk of a significant reduction in cooperation between Russian and Western capital remains insignificant.

Chinese capital tries to go out from the subordination of the financial capital of the USA and strengthen

its cooperation with the EU, including through the revival of the new Silk Road, part of which is Ukraine. This will allow him to claim a place the U.S. in the global economy.

Thus, global players in varying degrees, have certain interests in Ukraine and defend them to the best of my ability, disregarding the interests of Ukraine itself, which is not have possible to actively oppose them.

Conclusions

In the framework of an evolutionary theory of economic change, the national capitals of the individual countries have an attraction to a certain profile. Profile of the national capital in Ukraine differs from the profile of the national capital in Germany, China, Russia and USA. Ukrainian major business tends to extensive expansion and is considering the state "Ukraine" as a tool for the acquisition of capital within the country. The capitals of Germany, China, Russia and the United States see their national government as a tool to protect their interests at the global level.

Profile of the national capital led to the outdated structure of the economy of Ukraine, which reduced opportunities for economic progress and is caused constant social tension. Minor global scale Ukrainian capital and fragmentation at the national level deprived itself subjectivity in international confrontation of capitals.

Transformation of the "opposition" capital into "pro-government" in 2013-2014 has been the trigger socio-political crisis in Ukraine, which on the background of a global clash of the capitals acquired the scale of armed conflict.

In the coming years, given the profile of the national capital in Ukraine, we can expect further confrontation inside the new "pro-government" capital, and between "pro-government" and "the opposition" capitals. Opportunities for concentration of capital in the framework of the nation state most likely are lost and the Ukrainian capital will be subordinated to European capital or Russian capital, or them simultaneously.

Optimistic for Ukraine can be considered a scenario under which the United national capital will be able to change your profile and become an independent player on the global scale. This involves the simultaneous reduction of dependence on Western capital and strengthening opposition of Russian capital (the return of the property rights abroad; payment of debts to the IMF and the completion of cooperation; the concentration of the national capital within Ukraine; not entering into nor in the Customs Union of the Eurasian Economic Union, nor in the Free Trade Zone with the EU). The possibility of realization of such a scenario is extremely unlikely.

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Вишневський О. С. Зіткнення капіталів: Україна як жертва національних і глобальних процесів

У статті розглянуто формування профілю великого національного капіталу в Україні згідно еволюційної теорії економічних трансформацій. В якості ключової характеристики виявлено його спрямованість на експансію і боротьбу всередині країни, що підриває стійкість держави особливо в період кризи. Також показано, що зіткнення капіталів на глобальному рівні зумовило можливість переростання соціальної нестабільності в збройний конфлікт в Україні у 2013-2014 рр.

Ключові слова: зіткнення капіталів, еволюційна теорія економічних трансформацій, профіль українського капіталу.

Вишневский А. С. Столкновение капиталов: Украина как жертва национальных и глобальных процессов

В статье рассмотрено формирование профиля крупного национального капитала в Украине согласно эволюционной теории экономических трансформаций. В качестве ключевой особенности выявлено его нацеленность на экспансию и борьбу страны, что подрывает устойчивость государства особенно в период кризиса. Также показано, что столкновение капиталов на глобальном уровне обусловило возможность перерастания социальной нестабильности в вооруженный конфликт на Украине в 2013-2014 гг.

Ключевые слова: столкновение капиталов, эволюционная теория экономических трансформаций, профиль украинского капитала.

Vishnevsky O. S. The Clash of Capitals: Ukraine as Victim National and Global Processes

The article considers the formation of a profile of major national capital in Ukraine according to evolutionary theory of economic transformation. The Ukraine capital focuses on expansion and the clash into the country. It's undermining stability of the state especially in times of crisis. It is also shown that the clash of capital at the global level led to the possibility of escalating social unrest into the armed conflict in Ukraine in 2013-2014.

Keywords: clash of capitals, an evolutionary theory of economic transformations the profile of the Ukrainian capital.

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SMALL INNOVATIVE ENTERPRISES IN UKRAINE AND EUROPE: TENDENCIES, PROBLEMS, AND INCENTIVE TOOLS FOR THEIR DEVELOPMENT

Problem definition.

Ukraine's positions in the world ranking system remain low:

- The Global competitiveness index 2014 – 76 position of total 144;
- The World Competitiveness by the International Institute for management development 2014 – 60 out of 61 economies measured;
- The Global innovation index 2014 – 63rd among 143 countries;
- Investment climate is estimated as “rather unfavorable” by the 52% and “extremely unfavorable” by the 33% of respondents according to the research of European business association “Investment attractiveness index (1st quarter 2015)” [6,8].

The basic economic indicators now reflect not only the issues related to institutional gaps, and macroeconomic instability, but also the pressure of armed conflict onto economic and social development of the country. The deep crisis in almost all areas of life; lack of political will for implementing real reforms, rising of militarization level of economy pushes Ukraine back to countries with low income, technological underdevelopment, and lost opportunities.

Meanwhile, the world leading countries prove the fact that innovations nowadays become not only an effective tool for a sustainable growth, but also a first order conditions for the countries' survival in the context of global competition.

The results of a new PricewaterhouseCoopers' research named “Growth through innovations 2015” have shown that the most innovative companies in the world expect more than 60% of growth and rise of total revenue at more than \$250 billion within the next five years due to the complex approach to innovations in all the directions of their activity. As a part of a study a direct dependence between innovational leadership and significant growth of revenue was discovered. The innovations became a part of general operational activity of companies. A few years ago the most powerful instrument for the majority of companies was an entry into the Chinese market, but now the biggest potential is provided by the innovations. [1].

At the same time the triple crises in Europe affected business innovation and R&D in a negative way. The market entry of innovative businesses in Europe was obstructed and risk capital dried out. Investment in innovation suffered due to the unstable market conditions and the macroeconomic situation. Surely, in times

of uncertainty fewer companies would boost R&D spending and invest in innovation. This is especially valid for the small and medium enterprises (SMEs).

The crises were a stress test for the small companies and many failed to pass it. In the meantime, innovation demand for SMEs grew higher than ever because it meant survival, productivity, growth and competitiveness [7].

As for Ukraine there is a widely used assumption that the general economic situation in the country is so difficult and unfavorable to business that enterprises think how to survive rather than how to innovate and grow [9]. Although as it was reasonably pointed out above, innovations are really vulnerable to the crisis, they are still one of the key factors of growth irrespectively of geographical location or sectoral affiliation of a company.

Currently, 99,8% of all firms in the EU are SMEs and this is why small innovative companies are crucial for the economic growth and sustainability. Small enterprises are an integral part of the innovation process. They have to innovate to maintain market share and achieve greater efficiency. In the long-run, economic growth depends on the establishment and support of business environment that fosters innovation. Innovation-intensive countries which create and implement new technologies develop faster than countries that do not innovate. This is why innovative businesses have a special place in the long-run development of the EU [7].

The analysis of a current situation in a small innovative entrepreneurship in Ukraine and comparison with other countries in Europe could give us a glance at the tendencies, weaknesses, threats, which companies and national governments face with. It also could help us to find new ways and incentives to improve the current positions and develop a strong strategy for the future.

The objective of the article is to estimate a level of Ukrainian small innovative enterprises development comparable to the European countries' level, and to indicate main problems in this area.

The analysis of the latest scientific research publications.

Innovative activity of small and medium-sized business, quality of management, etc. are studied by S. de Mel, C. Woodruff, T. Edwards, R. Delbridge, M. Munday, S. Lindegaard. The value of small innovative enterprises (SIEs) for the national economic develop-

ment, the necessity of government support are studied by A. Kostrov, V. Shovkaluk, and others. Problems of innovation activity including small enterprises are represented in research papers of J. Shumpeter, P. Druker, M. Porter, S. Rodzher, B. Santo, R. Solow, V. Aleksandrova, G. Voljanik, N. Voljanik, Z. Varnalij, A. Dagaev, M. Denisenko, M. Dolishna, A. Kuznecova, M. Pashuta, A. Peresada, A. Podder'ogin, A. Poruchnik, V. Chaban, and others. At the same time there is a lack of qualified statistical analysis of SIEs' development through time, quantitative and qualitative changes, and the evolution of their problems compared with other European countries.

Conceptual issues of research. The phenomena of “innovative entrepreneurship” as such is quite new and slightly researched in Ukraine. Moreover, small innovative entrepreneurship as an object of scientific research appears only in the early 2000s. In conditions like there is no generally agreed accurate definition neither in science nor in legislation, it is difficult to make a proper analysis, forecast, and especially to develop an innovation policy within the country. Up to 2009 it provided data only on innovative activity of industrial enterprises while there was no detailed in-

formation on SMEs. Moreover, that data couldn't be compared with European innovation indicators. Only in 2009 the Methodology of Community Innovation Surveys (CIS), that is used in EU, was adopted in Ukraine. This Methodology covers all types of economic activities and distinguishes SMEs from large enterprises [9].

Statistical data as regards small innovative entrepreneurship development in Ukraine is based on the European methodology CIS, which was implemented for monitoring the innovation activity in Europe, and for better understanding of innovation processes, influence of innovations on the national economy, competitiveness, employment, structure of trade, etc.

In 2014 in Ukraine the last research of such a kind took place. There was a database of innovation activity in 2008-2010 and partially in 2010-2012. According to the Government office of statistics in Ukraine the total number of enterprises that implemented innovations during the period since 2000 to 2012 had a tendency to decrease, and only since 2009 the increase of this figure occurred (figure 1).

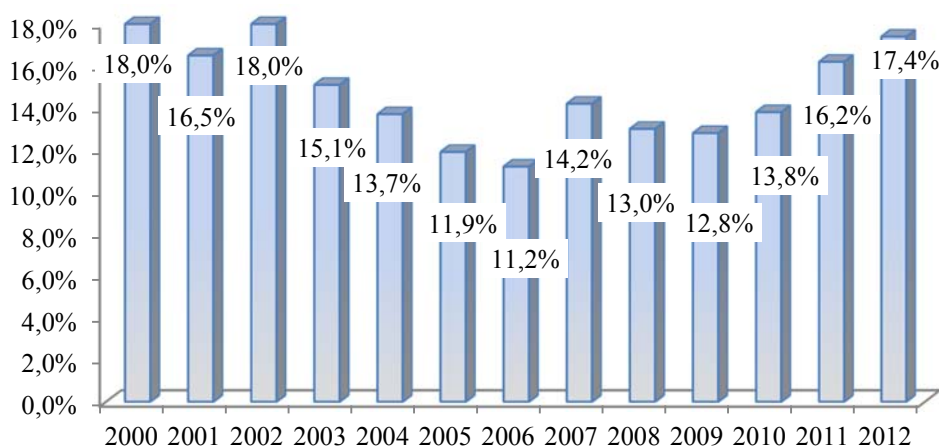


Fig. 1. Percentage of enterprises that had innovation activity, %

Note: Compiled by the author with the data of [2].

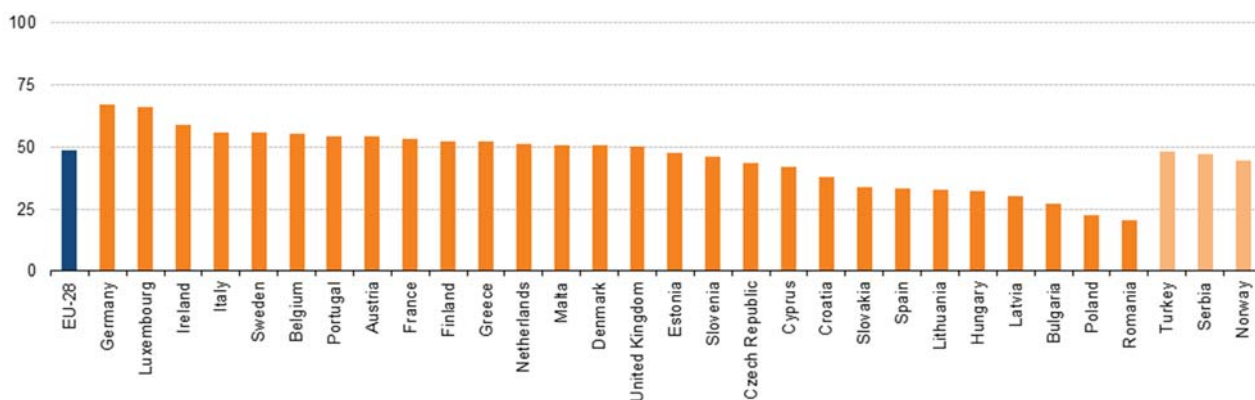
It is worth mentioning that the percentage of innovation active enterprises in total number of enterprises in European Union is not less than 25%, and in average it is 50% (figure 2).

In the diagram below there is a negative trend of innovation activity among industrial enterprises started in 2007, and increase since 2009 to 2012. In 2012 the share of innovative enterprises raised to 13,6%, and in 2013 has decreased to 12,9% (fig. 3).

During the period under a study the number of implemented technological processes in the industrial enterprises after a significant decrease in 2005 has started to increase, that can be explained with the ne-

cessity of modernization of old production in traditional sectors (figure 4). Development of new kinds of production after a sharp decline in 2002 remains on the same positions now.

The number of enterprises which held innovative activity is represented on the figure 5. Despite of slight increase (less than 3%) of innovative enterprise since 2006 to 2012 the vast majority belong to “non innovative” category of enterprises (79,6%). Only 20,4 % of enterprises implement innovations mostly in marketing and organization. Processes improving is observed only in 0,9% of all enterprises – they are ongoing of interrupted.



(*) The survey reference period covers the three years from 2010 to 2012.
 Source: Eurostat (online data code: inn_cis8_type)

Fig. 2. Percentage of innovative enterprises in EU (28) in 2010-2012(% of total number of enterprises) [3]

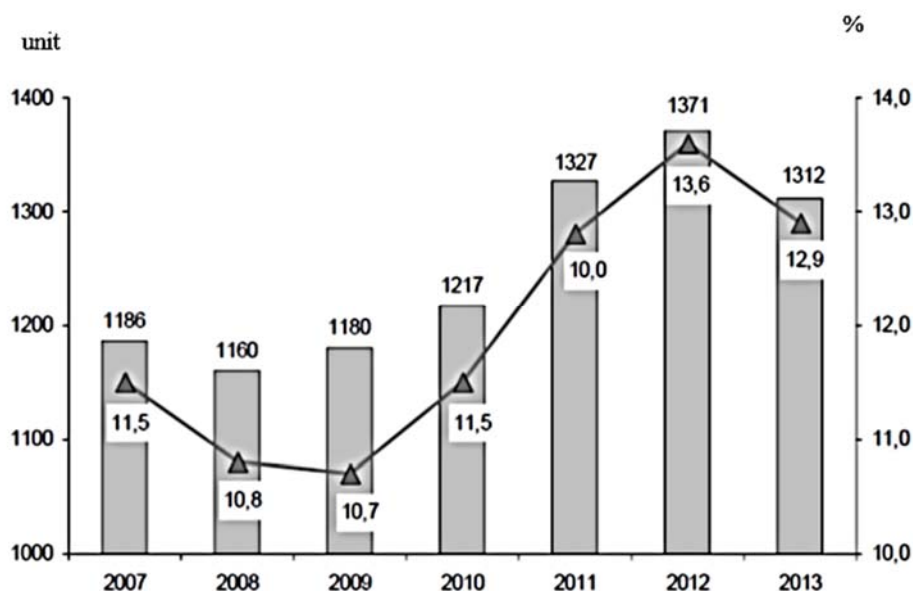


Fig. 3. Number of enterprises which implemented innovations, and the percentage in the total number of enterprises [2, p. 181]

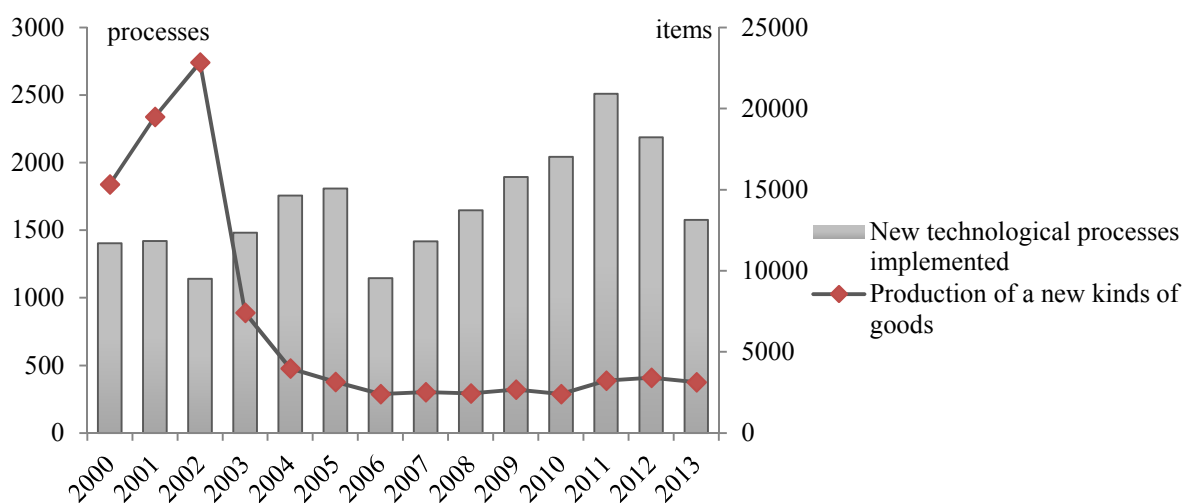


Fig. 4. Innovations' implementation in the industrial enterprises [2, p. 189]

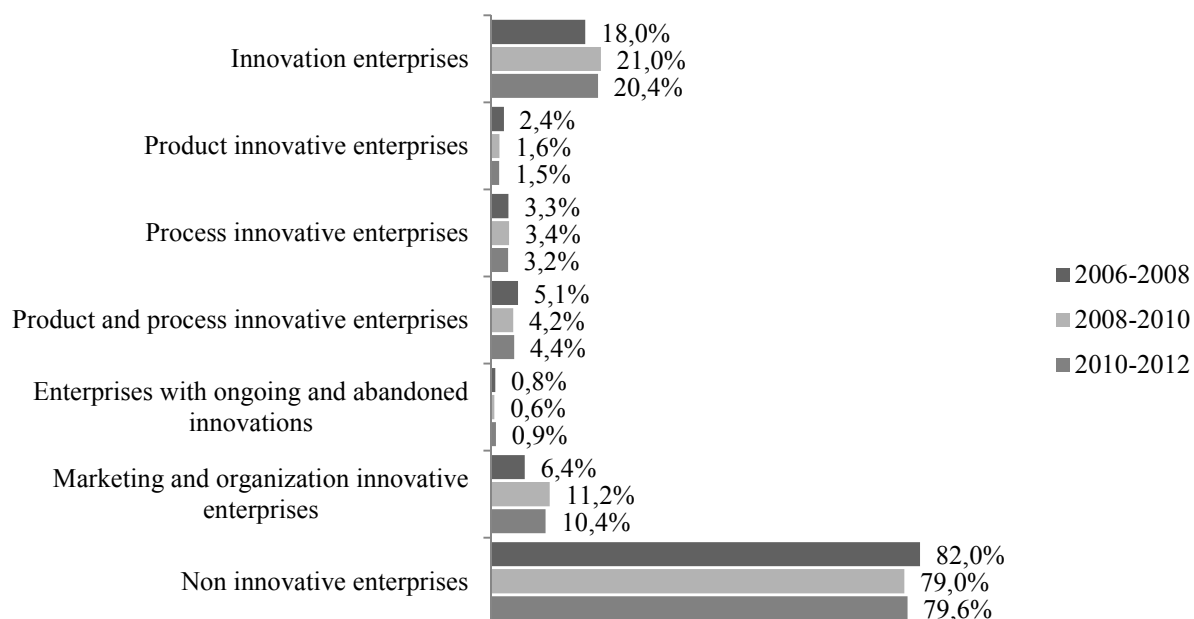


Fig. 5. Classification of Ukrainian enterprises according to the type of innovation activity, % of total number, 2006-2012 [2, p. 219]

In average in EU countries a share of enterprises with product/process innovations is 22,5% (table 1). The lowest rate is 4,0% (Romania), the highest is

35,8% (Germany). The leader in marketing/ organization innovations is Luxemburg with average of 39,6%, and the outsider in this context is Poland with 10,5%.

Table 1

Percentage of innovative enterprises of EU (28) according to the type of innovations (% from the total number of innovative enterprises) [4]

	Innovative enterprises (including enterprises with abandoned / suspended or on-going innovation activities)	Product innovative enterprises	Process innovative enterprises	Organisation innovative enterprises	Marketing innovative enterprises
EU-28	48.9	23.7	21.4	27.5	24.3
Belgium	55.6	31.5	31.1	29.3	21.9
Bulgaria	27.4	10.8	9.3	12.4	14.2
Czech Republic	43.9	25.3	24.0	20.5	22.4
Denmark	51.1	24.8	22.9	32.2	29.4
Germany	66.9	35.8	25.5	32.2	34.4
Estonia	47.6	20.7	23.8	21.7	21.9
Ireland	58.7	27.8	25.9	21.8	35.7
Greece	52.3	19.5	25.6	30.2	36.8
Spain	33.6	10.5	15.1	19.4	13.2
France	53.4	24.2	24.1	34.2	25.4
Croatia	37.9	16.4	19.0	22.9	23.5
Italy	56.1	29.1	30.4	33.5	31.0
Cyprus	42.1	20.9	28.2	26.2	29.5
Latvia	30.4	10.4	12.7	16.9	16.5
Lithuania	32.9	11.6	13.1	17.5	19.3
Luxembourg	66.1	30.3	32.8	46.8	32.4
Hungary	32.5	10.6	8.3	16.5	19.7
Malta	51.1	23.9	26.4	34.7	32.6
Netherlands	51.4	31.9	25.9	27.3	23.2
Austria	54.4	26.6	28.7	36.4	29.5
Poland	23.0	9.4	11.0	10.4	10.6
Portugal	54.6	26.0	33.5	32.8	32.8
Romania	20.7	3.4	4.6	14.1	13.8
Slovenia	46.5	23.6	22.5	26.3	28.5
Slovakia	34.0	14.4	13.5	18.6	19.3
Finland	52.6	31.0	29.3	29.7	26.5
Sweden	55.9	31.5	23.9	25.3	30.4
United Kingdom	50.3	24.0	14.1	34.2	16.8
Norway	44.7	19.1	11.9	21.7	23.2
Serbia	47.5	24.5	22.0	32.6	32.2
Turkey	48.5	17.7	20.4	31.7	34.7

(*) The survey reference period covers the three years from 2010 to 2012.
Source: Eurostat (online data code: inn_cis8_type)

The share of innovative enterprises did not change significantly since 2006. [2, p. 218]. The share of medium-sized enterprises with innovation activity changed significantly in comparison to small and large innovative enterprises (from 21,7% to 25,0%).

For small enterprises this change was from 14,9% in 2006-2008 to 16,9% in 2010-2012, and for large enterprises – the share increased from 40,8% to 43,4%. In 2010-2012.

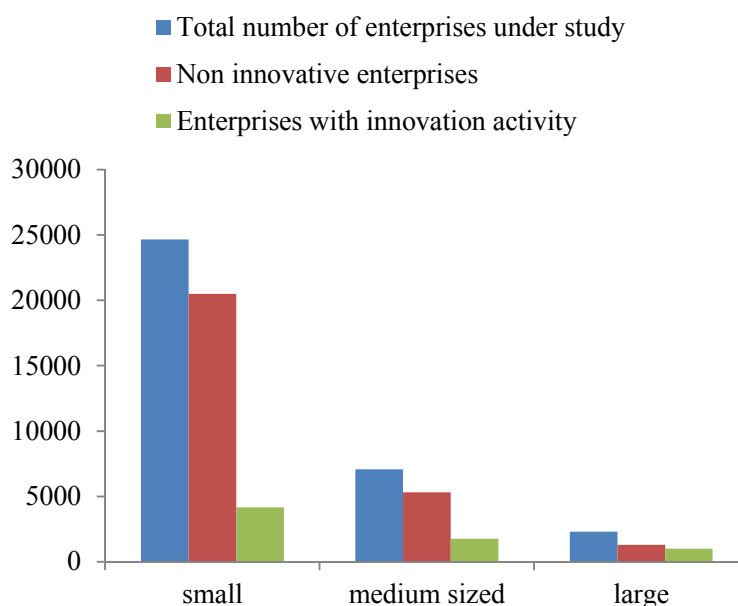


Fig. 6. Innovation activity of enterprises depending on their size, unit [2, p. 218]

It should be noticed that the specific character of researches of innovation processes in Ukraine is that more attention is paid to the enterprises with technological innovations (related to the development and implementation of technologically new and technology enhanced goods). Therefore, most figures of database in these researches are related to the enterprises of such a type and the main findings are not able to present the complete image.

Conclusions and perspectives for the future research in this area.

The current situation and main trends of small innovative enterprises development can be described as follows:

- Notably, small entrepreneurship has a high potential of development, that still remains not used in comparison with other European countries;
- The rate of innovative enterprises in Ukraine was only 17,4%, at the same time in developed countries this figure reaches 70-80%;
- The low sectoral development ratio is observed, number of employees, sales, and others are among those basic figures;
- Cutback in production of goods and services, that were new for an enterprise or for a market;
- The expenditure structure of innovation companies still relates to buying of soft programs and modernization of an old equipment;
- There are no tight partner links with other innovative organizations within a country, and abroad;

- Low quality and inefficiency of governmental support of innovative enterprises.

The bullet points described above give the exact diagnosis of the fundamental problems of Ukraine, especially in a part of the implementation of its national potential, which is still strong though. As all can agree without making efforts to development of effective tools and mechanisms for its implementation it is impossible to get a real value added. This can lead to reducing the chances for economic and technological breakthrough and well-deserved position in the global competition.

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Тулку Я. І. Малі інноваційні підприємства в Україні та країнах Європи: тенденції, проблеми та стимулюючі інструменти розвитку

Стаття призвана дослідити поточну ситуацію розвитку малого інноваційного підприємництва в Україні та зробити порівняльний аналіз змін у часі та з іншими країнами. Аналіз показує тенденції, слабкі сторони, виклики, з якими зустрічаються компанії та уряди. Також проведене дослідження може допомогти знайти шляхи та стимули для поліпшення позицій і розробити сильну стратегію, орієнтовану на майбутнє.

Ключові слова: малі інноваційні підприємства, глобальний індекс інновацій, продуктові/ процесні/ маркетингові та організаційні інновації.

Тулку Я. И. Малые инновационные предприятия в Украине и странах Европы: тенденции, проблемы и стимулирующие инструменты развития

Статья призвана исследовать текущую ситуацию развития малого инновационного предпринимательства в Украине и сделать сравнительный анализ изменений во времени и с другими странами. Анализ показывает тенденции, слабые стороны, угрозы, с которыми встречаются компании и правительства. Также проведенное исследование может помочь найти пути и стимулы для улучшения текущих позиций и разработать сильную стратегию, ориентированную на будущее.

Ключевые слова: малые инновационные предприятия, глобальный индекс инноваций, продуктовые/процесные/маркетинговые и организационные инновации

Tulku Y. I. Small Innovative Enterprises in Ukraine and Europe: Tendencies, Problems, and Incentive Tools for Their Development

The article aims to investigate the current situation of small innovative enterprises in Ukraine and compare changes in time and among countries. The analysis shows the tendencies, weaknesses, threats, which companies and national governments face with. It also could help to find new ways and incentives to improve the current positions and develop a strong strategy for the future.

Keywords: small innovative enterprises, global innovation index, product/process/marketing and organization innovations.

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GROWING POINTS OF SOUTHERN CALIFORNIA

Problem definition in general and its connection with important scientific and practical tasks.

Modern system of international relations in its essence reflects to the transition from bipolarity to polycentrism. The variety of typologies of international systems is related to the determination of the number of great powers or superpowers, and distribution of power (influence) between them. It coexists and develops three trends simultaneously: 1) directed bipolar-confrontational model, in which socialist China may take place of the former USSR; 2) leading to the consolidation of single-pole-authoritarian model, when the world order is verified by USA based on its national interests; 3) focused on the formation of a multipolar or polycentric world, inter-state relations of which should be governed by the spirit and letter of international law. The main role in which is played by the balance of interests of the leading countries - centers of political, economic, cultural and military influence. The latest model seems to be the most organic and beneficent to mankind that transformed the foundations of long-term and prosperous life [1].

Analysis of recent researches and publications.

The following definitions are the basis of most definitions of systems — bipolar, multipolar, balanced and imperial. If the new countries - challengers joined two dominant states of the bipolar system comparable to them by the power, the system is transformed into a polycentric one. To the same equilibrium of the system belongs to (or system of balance of power), where several states retain approximately equal influence on the course of international events. And only in the international system of the imperial type the only power is dominated that surpasses far all other countries of its combined power. On the basis of this approach M. Kaplan built his typology of international systems, theoretically possible in the modern world: the system has a single veto, the system of balance of power, flexible or rigid bipolar system, the universal and hierarchical system, where only the last two are not associated with polycentricity [2]. Wide survey of basic features of polycentricity of South California could be found in Suarez-Villa's research [3].

Objective definition is to find out the main criteria of polycentric area that could successfully be used in different continent.

The main material of the study. Historically, polycentrism is to replace the bipolar world order models related to a military-political and ideological confrontation between East — West. Approval of polycentricity

is a sustainable tendency to increase the diversity of regional interests in the modern world [4]. The multipolar structure of the world is formed by many geopolitical factors. Geopolitical poles, centers of power, core of which is one or few countries developing the integration associations of economic nature around (e.g., the European Union). The system of regional associations is formed on the basis of ethnocivilizational and cultural generality.

It has been expanding the range of geopolitical dominance criteria in the modern world. For example, the military capacity is no longer a fixture of the global power center or main indicator of superpower status. A multipolar world order is characterized by several features. First, there are no clear and confrontational borders between the poles, while the "centers of gravity" (USA, China, Germany, Japan) are clearly marked inside the modern world poles. Secondly, in terms of polycentrism an increasing number of international parties used to be who claim to primacy, their individual interests are multiplying and, therefore, the number of reasons of conflicts on a smaller scale increases, but include a wide range of issues. Thirdly, the opportunities for new geopolitical combinations will appear with the increasing number of centers of power. All of these processes are directly or indirectly related to civilizational development of area, infrastructure of cities and suburbs, increasing role of old and appearing of new growth points in global scale.

Urbanization explosion of XIX-XX centuries and mega-urbanization (i.e. the population growth of mega cities in the total population of the world) in the field of political development are correlated with the widespread proliferation of mature of state system [4]. Urbanization is not merely a modern phenomenon, but a rapid and historic transformation of human social roots on a global scale, whereby predominantly rural culture is being rapidly replaced by predominantly urban culture. Therefore It is proposed to consider the U.S. as the world's most ethnically diverse and multicultural nations country, namely, California, that is one of the most attractive regions globally to research of the most different spheres of activity.

The Southern California mega-region encompasses over 53,000 square miles - roughly 1.5% of the land area of the United States. Although comparable to the size of the states of Arkansas or Georgia, its effective size, given that nearly 2/3 of the region's lands are government-owned and thus off-limits to development, is much smaller, around the physical size of Massachu-

setts with three or four times their population. However, the mega-region's more dense development pattern results in a population that represents over seven per-

cent of the US population, demonstrating not only its significance in terms of size, but also its relative impact in so small an area [6].

Comparison of 2013 GDPs			
Country	GDP	Country	GDP
1 - United States	\$16.80 trillion	9 - Russian Federation	\$2.1 trillion
2 - China	\$9.2 trillion	10 - Italy	\$2.1 trillion
3 - Japan	\$4.9 trillion	11 - India	\$1.9 trillion
4 - Germany	\$3.6 trillion	12 - Canada	\$1.8 trillion
5 - France	\$2.7 trillion	13 - Australia	\$1.5 trillion
6 - United Kingdom	\$2.5 trillion	14 - Spain	\$1.3 trillion
7 - Brazil	\$2.2 trillion	15 - Mexico	\$1.2 trillion
8 - California*	\$2.2 trillion		

Source: Department of Finance²

Fig. 1. Comparison of 2013 GDPs

Modern Southern California is presented by concentrating highly diverse service and industrial activities that are made accessible through the region's system of freeways and roads. Southern California is included in the list of world's largest economy with the gross state product (GSP). In 2013, California GDP grew by 2% (\$2 trillion to \$2.2 trillion) (see Figure 1). California's largest private industry sectors: Finance, insurance, real estate, rental, and leasing (20.9% of state GDP); trade, transportation, and utilities (15.1% of total GDP); professional and business services (13.2% of state GDP); and manufacturing (10.9% of state GDP) [7].

Los Angeles and San Diego, the two main cities in Southern California, were peripheral outposts to the American urban system one hundred years ago. Both cities were founded through the missionary settlement efforts of Spanish colonization, starting in the 17th century. The high rate of growth of territories and urbanization made South California the great representative of conurbation system - as a region comprising a number of cities, large towns, and other urban areas that, through population growth and physical expansion, have merged to form one continuous urban and industrially developed area. In most cases, a conurbation is a polycentric urban agglomeration, in which transportation has developed to link areas to create a single urban labour market or travel to work area.[1] The term "conurbation" was coined as a neologism in 1915 by Patrick Geddes in his book *Cities "In Evolution"*, where he drew attention to the ability of the new technologies of electric power and motorised transport to allow cities to spread and agglomerate together. For now it is a conurbation as the country's largest demographic agglomeration and most important foreign trade center, with the largest volume of exports and imports.

It is the example of polycentric metropolitan form with a vast mosaic of municipalities sprawling over 11,000 square kilometers of very diverse terrain. The vast mosaic of disparate communities fostered much spatial segregation by income or wealth, with more than 300 gated neighborhoods providing the most obvious examples of social and economic separation that one can probably find in the United States. As a result, Southern California became the quintessential example of polycentricity, with an extremely diverse agglomeration of communities, activities and population [8].

The region's polycentricity has set the spatial context in which flows, network structures, transactions and location decisions occur. It means that Southern California's global gateway was built on cooperation of labor flows and networks which became extremely important for almost every economic activity found in the region, from Hollywood to the furniture and textile manufacturers of Los Angeles, to the advanced high-tech, aerospace and biotechnology complexes which make up. For example, the sort of binational polycentricity has turned part of the metropolitan region (on the Mexican side) into a major 'offshore' production center in electronics, rivaling the most successful Asian enclaves.

Southern California's polycentric metropolitan structure has fostered a great deal of segmentation, in virtually every sector or activity. As a result, vastly different activities, disparities and standards have been able to coexist within this region. The high level of segmentation has also provided it with many competitive advantages, by allowing firms and institutions to connect with the vast spectrum of opportunities and resources that are available in the sprawling metropolitan mosaic [3].

Flexibility is another important characteristic that is partly a result of segmentation. The vast mosaic of communities and business centers provides greater

locational flexibility than would occur in older, monocentric metropolises, or in cities with less well-defined polycentric structures. Southern California's polycentricity makes it possible for a large number of disparate activities to be found in relatively close proximity, often straddling municipal boundaries. For example, the high reliance on individual transportation adds to this flexibility, through the sheer number of routing choices and the redundancies of the road networks.

Beyond the region's specific context, it can be argued that polycentricity has also affected the functional relationships involved in many economic activities, including those which provide it with its globally competitive base [1].

Here is wherewith to ensure and support such kind social and economic system and entire cycle range of products and services, California's polycentricity system holds on the employment sector. It is one that has huge influence on the development of Southern California as most famous international hub. The government of California is the largest industry - about 2.5 million employees (12%). The second largest industry, according to the census, health care and social assistance (see Figure 2). A big role in employment government structures play: armed forces, police districts and cities, the Federal Bureau of investigation, the prison system (state and federal), the internal revenue service, postal service. Among the largest public employers in the state are distinguished naval and air bases. The average payment scale of those are presented on figure 3.

In California in the mid-20th century had been appeared such innovation in retail, as, fast food restaurants and credit cards. It has influenced on further development of growing points of California in all current spheres.

USA is planning to change its immigration restrictions for prospective students, entrepreneurs, artists and scientists. Their contribution as citizens will create millions of new jobs, without prejudice to American workers. For example, there are such unveiled plans in Obama's administration to create "an elite corps" of highly qualified teachers of exact and natural sciences. The project is estimated at \$1 billion, it aims to improve the quality of education in areas critical to the future growth of the U.S. economy, mathematics, natural sciences, technology and engineering disciplines, as well as to raise the average level of education in the USA [12; 13]. His good physical shape is to follow the US President Barack Obama provides leadership on health and economic benefits of disease prevention through an active lifestyle and sensible nutrition. This will lead to increased productivity and lower medical costs.

Many colleges are accessible access points for learning, many of them have an active agenda to ensure education for immigrants and their children [14]. Although some programs receive funding from the state or municipalities (direct or indirect), the benefits ultimately received in the regional economy through increased productivity and income.

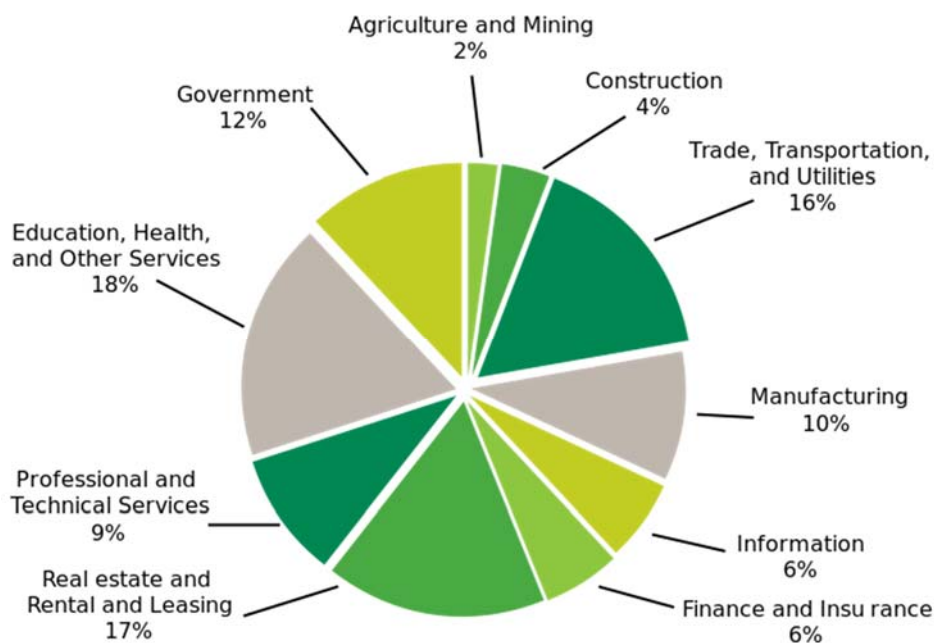


Fig. 2. Employment structure of Southern California

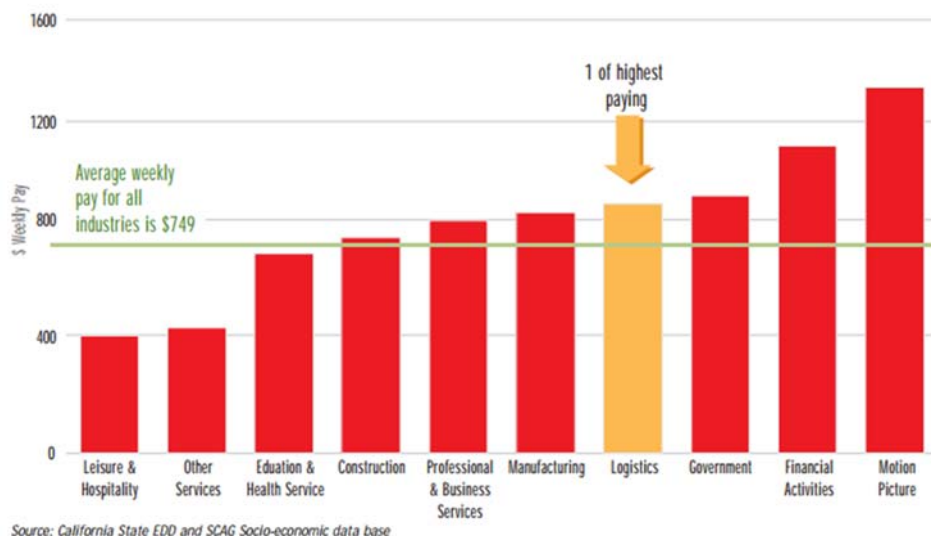


Fig. 3. Average payment by sectors

The U.S. experience shows that investment in human capital is 25% cheaper than attracting trained worker, payback and profitability of these investments is quite high and, accordingly, the degree of risk is low. On other hand, human capital is the main secret of the success of the Silicon Valley - sustainable growing point of this state. More than one city the world could boast that every second inhabitant is of higher education (as a minimum, a bachelor's degree). The level of education of the San Francisco competes only with the second "smartest" city in the USA — Boston, but so far with mixed success. Eventually however, the "appetite" for the talent here is not reduced: Silicon Valley needs all new technicians. In Valley recruiting of successfully workers is ensured by big choice of headhunter agencies. Their services for the employer are about average cost 30% of the annual salary of the candidate (however, the replacement of the agency guarantees).

South California took aim at global gateway not only by the strategic tool as polycentric employee sector, but also with high-capacity transport system which provide unimpeded movement of citizens. Secretary of U.S. Department of Transportation Norman Mineta recently said, "We understand the immediate link between continued investment in infrastructure and our nation's economic prosperity... Transportation is key to the productivity, and therefore the success, of virtually every business in America. Congestion and inefficiency in transportation are not just inconvenient and aggravating...but they are also a tax that burdens every business, every community and every individual. We have to find ways to lighten that load." [15] (see figure 4).

Transportation system of goods and California's place in the global economy have become high priorities for decision-makers at both the State and national levels. Early in Governor Gray Davis administration

was launched an initiative to solidify the Golden State's position as the West Coast gateway for goods entering or leaving the United States from or to the Pacific Rim. Governor Davis spearheaded the development and implementation of the Traffic Congestion Relief Program (TCRP), a nearly \$8 billion investment effort to upgrade California's infrastructure to ease congestion and improve mobility. The TCRP represented the single largest investment in transportation infrastructure improvements in the State's history [16]. Till now such kind policy of international trade and goods movement has supported these critical elements of California's, and the nation's, recent economic success. With more than \$350 billion in international commerce, California's economy depends on trade. More than one in seven California jobs are tied to trade.

In response, much of the South California region is changing to address today's problems and tomorrow's demands. Many cities within the mega-region's urbanized core, in Los Angeles, Orange, Riverside and San Diego counties, are relying more frequently on infill and redevelopment to accommodate both the new and existing population, while at the same time recreating the way the metropolis looks and functions. A concerted effort to build and develop around a public transit network is reshaping the region and laying the foundation for a truly global city.

Conclusion. Southern California's continued success may be in jeopardy. Rapidly increasing congestion, continued growth away from transportation hubs and economic centers, and poor air quality threaten the region's ability to maintain a competitive edge in the global economy. Recently, a dramatic rise in housing prices, coupled with an ever-widening income and prosperity gap has made first-time home purchase difficult for most residents. Environmental sustainability is also a concern as a growing population leads to

greater natural resource demands for land, energy and water. But the most powerful tool which used in management of the region is: «*Whether the topic is schools, parks, roads, water supply systems, or ports, the mes-*

sage is the same — make better use of what we have» [10]. It shows more than big potential of Californians, but their strategic openness for changes.



Fig. 4. National Intermodal Freight Flows to/from the Los Angeles Region

Balancing growth and extending opportunity of human capital, infrastructure and technologies should be essential to the region's future. Growing points are mostly presented by sustainable sectors which could be changed according to current situation and strategic plan. In the near future, it doesn't look like vectors of changing will be shift the directions.

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Кузнецова Д. В. Точки росту Південної Каліфорнії

Метою даної статті є обговорення та виявлення основних точок зростання регіональної економічної системи Південної Каліфорнії. Була зроблена спроба об'єднати вектори політики, які були вже досягнуті в практиці і ті, якими характеризується сучасність. З економічної сторони велику роль в суспільному визнанні зіграв вибраний тип територіального розвитку. У кінцевому рахунку, сформована система поліцентризму дозволяє задіяти і розвивати необмежену кількість галузей, секторів та суб'єктів. Це дає можливість і стимул для безперервного і гнучкого моделювання і тонкої настройки сталого та успішного життєзабезпечення.

Активне вибудовування відносин співробітництва з розвитком перспективних галузей дозволяє Каліфорнії бути і залишатися провідним регіональним і глобальним центром. Обговорення таких процесів і відповідних заходів політики також можуть бути цікавими для багатьох регіонів Центральної та Східної Європи, так як аналогічні зміни можна очікувати в майбутньому і там.

Ключові слова: поліцентризм, агломерація, хаб, Південна Каліфорнія, урбанізація, мега-регіон.

Кузнецова Д. В. Точки роста Южной Калифорнии

Целью данной статьи является обсуждение и выявление основных точек роста региональной экономической системы Южной Калифорнии. Была сделана попытка объединить векторы политики, которые были уже достигнуты в практике и те, которыми характеризуется современность. С экономической стороны большую роль в общественном признании сыграл выбранный тип территори-

ального развития. В конечном счете, сложившаяся система полицентризма позволяет задействовать и развивать неограниченное количество отраслей, секторов и субъектов. Это дает возможность и стимул для непрерывного и гибкого моделирования и тонкой настройки устойчивого и успешного жизнеобеспечения.

Активное выстраивание отношений сотрудничества с развитием перспективных отраслей позволяет Калифорнии быть и оставаться ведущим региональным и глобальным центром. Обсуждение таких процессов и соответствующих ответных мер политики также могут быть интересны для многих регионов Центральной и Восточной Европы, так как аналогичные изменения можно ожидать в будущем и там.

Ключевые слова: полицентризм, агломерации, хаб, Южная Калифорния, урбанізація, мега-регіон

Kuznetsova D. V. Growing Points of Southern California

The aim of this paper is to discuss and show up the main growing points of regional economic system of Southern California. The paper intends to bring together the aimed and contemporary implemented vectors of policy. On the economic side the importance of selected type of area development has played big role in public recognition. Eventually, the established system of polycentricity allows to involve and develop an unlimited number of industries, sectors and actors. It gives the opportunity and impetus for continuous and flexible modeling and fine tuning of sustainable and successful life sustenance.

Extensively built cooperation relationships and promising sectors allows California to be and remain a leading regional and global hub. Discussing these processes and the related policy responses might also be interesting for many regions in Central and Eastern Europe, as similar developments might be expected in the future there as well.

Keywords: polycentricity, conurbation, hub, Southern California, urbanization, mega-region.

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THE SOCIAL INSURANCE IN THE SYSTEM OF THE SOCIAL RISKS REGULATION

Introduction. The social insurance system is based on the principles of solidarity insurance – in a market economy the government cannot take responsibility for the majority of the social risks providing. Therefore their funding should be based on attracting the greatest possible number of participants. The state nature of the social insurance does not mean that the state has to finance the cost of the social security in all cases. It could mean the obligation of this mechanism, the obligation of the insurance premium, the obligation of the grounds application, conditions of the social security and juridical responsibility. The state insurance guarantees the necessary standard of living. It is obligatory and its source is mandatory contributions of employees and employers. The basic principle of the state social insurance is solidarity. It means the distribution of assistance depending on the needs, regardless the size of contributions and taxes paid. The group insurance guarantees the usual standard of living. It is implemented both as compulsory and voluntary. Its source payments are insurance contributions of employers and workers. The basic principle of this form is subsidiarity. It means assistance depending on the needs, but accordingly taking into account the size of the payments. The personal insurance guarantees the current level of prosperity. It is carried out voluntarily on account of the citizens' insurance contributions. The basic principle of life insurance is equivalence. It means assistance which is proportional to the insurance contributions.

Analysis of recent publications and unsolved part of the problem.

P. Nadash investigating social insurance problems in Taiwan, comes to conclusion that Taiwan will shortly complete its comprehensive social safety net, which includes national health insurance, retirement security, and unemployment insurance, by introducing long-term care (LTC) insurance – putting it ahead of the many countries that rely on a patchwork of policies to address the need for LTC. The program, to be implemented in 3 to 5 years, will cover all citizens on a primarily social insurance basis. The range of LTC policy options considered is discussed, particularly how to structure the program, how to finance and regulate it, and how to develop its inadequate LTC infrastructure and workforce. Particularly thorny issues include the

choice of social insurance, the feasibility of cash benefits, and how to address Taiwan's heavy reliance on foreign workers [1].

T. Laun, studied the role of social insurance, namely old-age pensions, disability insurance and healthcare, in accounting for the differing labor supply patterns of older individuals across OECD countries. To this end, we develop a life cycle model of labor supply and health with heterogeneous agents. The key features of the framework are: (1) people choose when to stop working, and when/if to apply for disability and pension benefits, (2) the awarding of disability insurance benefits is imperfectly correlated with health, and (3) people can partially insure against health shocks by investing in health, the cost of which is dependent on health insurance coverage. We find that the incentives faced by older workers differ hugely across countries. In fact, based solely on differences in social insurance programs, the model predicts even more cross-country variation in the employment rates of people aged 55-64 than we observe in the data [2].

Virginia P. Reno writes, that currently, 8.8 million disabled workers (and nearly 2 million of their children) receive Social Security Disability Insurance (DI) benefits. For many, DI benefits are nearly all the income they have. The DI trust fund reserves are projected to be depleted in 2016, after which tax revenues coming into DI would cover only about 80% of scheduled benefits. Congress has never permitted such a drop in Social Security benefits to occur. A temporary reallocation of part of Social Security's 6.2% tax rate from the Old-Age and Survivors Insurance (OASI) trust fund to the DI trust fund would ensure that both funds can pay full benefits until 2033, after which scheduled taxes would cover about 75% of scheduled benefits. Congress has reallocated the tax rate 11 times in the past, making it what one expert has called "a traditional and noncontroversial action." Alternatively, a 0.2% increase in the tax rate for DI would make DI solvent for the next 75 years [3].

O. Volska considers that the current legislation of Ukraine does not regulate the minimum list of social services that would provide the most important needs of those people who find themselves in trouble, the social services which would be guaranteed by the state in any economic situation, regardless of the area of

citizens' residence. Normalization range of services for the certain categories of people will help to provide social services to those who are in need in sufficient amount [4].

The current unresolved part of the problem is the development of scientific and methodological approaches to assessing the effectiveness of social insurance in Ukraine as a part of the social policy and the main compensatory mechanism of the social risks. Its solution will make it possible to offer directions for improvement of the development of the social insurance system strategy in Ukraine.

Results. In current scientific literature social insurance is largely interpreted as an organizational and financial system, which activity is aimed to prevent from social risks of income loss or having to pay for the certain services, or other costs connected with the health loss, disability or unemployment on account of special funds that are formed on the contribution payment of workers, employers and the state. The object of compulsory state social insurance relations is the coverage of social risks. The last one is actualized for a person under a system of interconnected relationships. Its participants are the insurance carrier, the insurer and the insured. The purpose of these mentioned relationships is to provide insurance protection of the economically active population in the event of the social-risk situation, its prevention and effects compensation. Insurance risk function is transformed into a fee insurer liability for the consequences of the risk caused by the events which are preappointed by current legislation. In the case of an insurance event the insured imposes to the insurer the requirement for indemnification (payment of insurance premiums). Materializes of the insurance categories coverage is an appropriate fund. This is a set of distinguished and reserved inventories of goods intended for insurance protection implementation – not only compensation but also to overcome the social risks effects.

The social risks in this approach include the probability of financial distress due to the lack of earnings because of objective socially significant reasons and due to the additional costs of the children or other family members' allowance, as well as to meet the needs of health and social services.

They can be characterized by the following features:

- exceptionally objective in nature, because they cannot be caused by the internal reasons;
- significantly restrict human activity, resulting in its social insecurity;
- vested properly in national law as the circumstances due to the occurrence of which a person may pretend to the state or society help;
- potentially legitimate for every person, they come due or necessarily defined circumstances;

- the main function is to prevent potential financial difficulties of a person or his / her family members.

Based on the mentioned characteristics, the social risks can be classified as insurance ones, that are provided through the social insurance (public or private), and non insurance, which are provided by the government programs of social support.

The state social insurance performs a lot of functions. The main one is compensation that is to reimburse the insured damages. This system of rights, responsibilities and guarantees that provides the social protection in case of illness or temporary partial disability, unemployment and in other cases stipulated by the legislation of Ukraine. The social insurance also performs preventive function, i.e. financing from the certain insurance fund some preventive measures for preventing the harmful effects of the elemental forces of nature and other adverse effects. Control function means that insurance funds are purpose-oriented: insurance premium are accumulated on the planned purpose. They are used in strictly defined cases and clearly defined range of people. The function of economic development promotion has an important place, because collecting for mandatory social insurance against unemployment is included into income of the special fund of the State Budget of Ukraine. Other functions are incidental. They are likely to arise during execution of the main functions. Therefore, we consider the social insurance system as the system of relationships between the insured, the insurer and the insurance carrier. These relationships provide the insured on account of social insurance funds, which are formed by the payment of insurance premiums, financial security in case of disease, full, partial or temporary disability, breadwinner loss, unemployment due to circumstances regardless of the person, old age, and in other cases provided by the law.

The concept of the social insurance, which is established by the legislation, defines it through the system of rights, responsibilities and guarantees that provides social protection, based on the citizens' material support in case of disease, full, partial or temporary disability, breadwinner loss, unemployment due to circumstances regardless of the person, old age, and in other cases provided by the law, on account of money funds, which are formed by the payment of insurance premiums by the owner or authorized entity (employer), citizens as well as budgetary and other sources which are provided by the law. Thus, the Basic Law of Ukraine on compulsory social insurance [5], provides the following types of the obligatory state social insurance: pension insurance, insurance in case of temporary disability and expenses related to funerals, medical insurance, insurance against accidents at work and occupational diseases, which caused disability, unem-

ployment insurance, and other types of insurance under the laws of Ukraine.

Organizational and administrative support of the social insurance function (except health insurance) is performed by the following funds:

- Pension Fund of Ukraine;
- Social Insurance Fund for Temporary Disability;
- Fund of the social insurance of Ukraine against industrial accidents and occupational diseases;
- Fund of obligatory state social insurance of Ukraine in case of unemployment.

The functioning of these funds is specified by a single insurance principle and provides social assistance to citizens who for some reason find themselves in difficult living conditions due to loss of earnings.

The basic principles of social insurance are: commitment, a clear dependence between participation in the financing system and the size of pensions and benefits, provision of payments, comparable with the income of the insured person during his / her working life, facilities isolation and participation of the social

partners in governance. The most important document of the ILO in the sphere of the social security is the Convention on Minimum Standards of Social Security. It examines the state social insurance as a part of the social protection system of workers (insured). It also establishes the basic social benefits at the expense of social insurance which include: medical care (diseases and in case of pregnancy, childbirth and their consequences); assistance due to diseases, old age, assistance in case of industrial injury or occupational diseases, family assistance, assistance in case of pregnancy and childbirth, disability assistance, assistance in case of breadwinner loss. [6].

In most European countries the social insurance system is typical. Its peculiarities are only in the organization and functioning of the insurance systems – it is the amount of compulsory social payments for pensions and health insurance, the method of levying such payments and the tax burden distribution between employees and employers (Table 1).

Table 1

Types of benefits and services for social insurance in the EU

Types of insurance	Types of benefits and services
Pension insurance. Compulsory pension insurance of employees.	Old-age pension. Professional ineptitude or disablement pension. Pensions for relatives of the deceased.
Compulsory health insurance for all categories of the population.	Partial payment of the costs of treatment and medication Payment in sick voucher.
Compulsory insurance against accidents of all categories of the populations.	Payment rehabilitation. Pensions in cases of industrial accidents. Pensions for relatives of the deceased. Funeral assistance.
Compulsory unemployment insurance of all employees.	Unemployment assistance. Part-time employment assistance. Payment of fees for medical and pension insurance
Assistance for families with children.	Help for the birth of a child. The monthly pension for each child.
Social assistance to individuals who are not able to ensure their existence on account of their own labor income and property and do not use other types of social services.	Help to maintain an acceptable standard of living. Assistance in special situations.

Source: [7].

Having taken into consideration the fact that the national legislations which govern the relations of social insurance in the member states of the European Union are slightly different, it has been developed the common rules of the social insurance coordination for all countries. They were approved by the Resolution of the Council of the European Union № 1408/71, “On the application of social security schemes for workers and entrepreneurs-individuals who move within the European Union and their family members”. They are applied to the citizens of member states of the European Union nationals, stateless persons and refugees. The

Rules of coordination do not establish which compensations must be paid by this or that state. They do not define pensions and benefits. At the same time, the government must ensure that a person who moves from one member state of the European Union to another, does not get into a worse position than those who worked and lived all there life in the particular country. Moreover on May 1, 2010 the new regulations of the European Union (№ 883/2004 and number 987/2009), aimed at the coordination of the social security systems in the EU came into effect.

The general trend for the member states of the European Union is also a striving for optimization of the social contributions. Thus, based on projections over the next fifty years, they expect an increase by only 5 % of GDP. In contradiction to Ukraine, forecasts (table 2) takes into account the expected effects of reforms in the social security that have already been legislated and done (including new aid schemes and conditions of pensions), and the expected increase of labor share in total population and employment levels. The European Union has taken measures to actively counter the impact of population aging on social security and the economy generally.

Table 2

Predictive assessment of the dynamics of social expenditure in EU Member States (2007-2060)

Level	% of GDP	Changes since 2007 in percentage points of GDP	
	2007	2035	2060
Pensions	10,2	+1,7	+2,4
Health care	6,7	+1,0	+1,5
Long-term care	1,2	+0,6	+1,1
Unemployment benefits	0,8	-0,2	-0,2
Education	4,3	-0,3	-0,2
Total	23,2	+2,8	+4,6

Source: [8].

In general, Ukraine introduced a system of social insurance that meets the European one. The interest payments to the funds are fully consistent with European rates (table 3).

Table 3

Major taxable rate in some European countries and Ukraine

Country	Standard (basic VAT rate, %)	Individual income tax, %	Corporate income tax, %	Social insurance contributions, %
Austria	20	10-50	34	41,8
UK	18	20-40	33	15,6
Germany	16	25,9-53	45	38,2
Spain	16	30-56	35	38,7
Italy	20	10-51	53	57,9
France	19,6	12-54	33	56,3
Switzerland	6,5	11,5	10	22,8
On the average	18,7	20,4-46,2	33,7	37,7
Ukraine	20	10-40	21	39,55

Source: [9].

For 12 months in 2013 insured persons were paid 25 840.4 million by the social insurance funds, it is 3 891.0 million insurance compensations more than in the same period in 2012. From 1 March 2013 the monthly insurance payments for job-related injured and their families has been increased by 14.9%. As a result, the average monthly insurance premium per capita in

Ukraine is 1390 USD. It is obvious, that it is incorrect to compare its absolute value with European data. Ukraine has about 20 million people employed, but according to the Ministry of Social Policy only 13 million pay social contributions, and the rest – is an informal and shadow employment. It does not allow improving the appropriate effective mechanisms of social insurance [10].

The current total amount of social insurance contributions in Ukraine is 42.03 % (38.53 % is paid by employers, 2 %, 3 %, 3.5 % (depending on salary) is paid by employers). Simple mechanical reduction of charges on payroll will cause the complete collapse of social services to insured persons, because all social subsystems are not independent in financial and fiscal terms. Fiscal space or the amount of taxes and contributions that our society is willing to pay is limited. Therefore, the money collected as fees from workers and their employers of formal economy sector cannot be re-extracted as profits or income tax to support national solidarity through social welfare programs. Contribution rates which were established within private insurance, affect the wages and the level of contributions in the public health care systems.

To reduce the load on the payroll fund it is necessary to expand the base of insurance premiums accounting, to improve the system of collecting and accounting of insurance premiums and gradually ensure parity among employees and employers to pay insurance contributions for compulsory social state insurance. Parity participation of workers and employers to pay insurance premiums complies with the Concept of reforming pay and ILO documents that allow insurance contributions redistribution between employers and employees in equal amounts. However, the insurance contributions redistribution between employers and employees can only be performed if it is possible to prevent a decline in real income of workers due to the insurance premiums increase for them and setting the minimum wage at the subsistence level. This will reduce the payroll load, expand the circle of contributors on the account of tax legalization that will eventually lead to an increase in revenues to social funds and social benefits to insured persons.

According to the Law of Ukraine “On the collection and accounting of the only contribution for obligatory state social insurance” – the only contribution to the compulsory state social insurance is a consolidated insurance premium, collection of which is performed to the system of compulsory social insurance. It is compulsory and regular. It ensures protection in cases provided by law, the rights of the insured persons and their family members to receive insurance benefits (services) according to the current types of obligatory state social insurance [11].

The size of the only contribution for each category of taxpayers specified by this Law and the proportion of its distribution according to the type of compul-

sory social insurance are established considering that they have to provide insured persons with insurance benefits and social services provided by the legislation on compulsory social insurance; financing of measures which are aimed at preventing insurance claims; creating a funds reserve to provide insurance benefits and social services to insured persons; the administrative costs coverage to provide the functioning of the compulsory social insurance system.

Social insurance contributions of employers and insured persons act as the main source that provides compensation for income loss in proportion to its size (it is in most cases has a legally restricted level) and budget funds are intended for the payments of a general nature and ensure a minimum level of insurance benefits in the event of a lack of accumulated insurance premiums.

Thus, social insurance acts as a specific institution of social risks regulation, which causes a number of its characteristics: this form of social protection, in most cases, is applied to wage earners in socially organized production, for which the main and often the only source of livelihood is the wage. Secondly, understanding of the social risk as a natural and objective mass phenomenon that affects the certain enough significant socio-demographic and professional groups of the population. Thirdly, social insurance funding, to some extent, is carried out by all the major social partners – workers, employers and the state. The costs of social insurance are socially necessary for the reproduction of labor power employed and their reference to the cost of production, which is the recognition of the costs' non-taxed nature.

Conclusions. The established social insurance system in Ukraine generally satisfies the market conditions and includes the major social risks that emerge in this area. The last ones are clearly distinguished between funds. The employer insurance liability dominates, even though the proportion of the insurance liability distribution is very disproportionate.

The current social insurance system in Ukraine in its content is not insurance in the classic sense, as it stores and serves the social security (benefits) functions – the insurance premiums size is inconsistent with the level of social and occupational risk, amount of rights and guarantees of insurers and the insured, the alienation from participation in the funds management is available and so on.

Social insurance is the result of social and labor relations development. It is an important tool to minimize social risks. Social security has the following features:

- this form of social protection is applied primarily to employees for whom the main source of income is wage;

- its main purpose is to regulate social risks which objectively concern to all socio-demographic and professional groups;

- social insurance financing to some extent is carried out by all the major social partners – workers, employers and the state. The costs of social insurance are socially necessary for the reproduction of labor power employed and their reference to the cost of production, which is the recognition of the costs' non-taxed nature.

Social insurance does not only perform compensation functions of social risks actualization, that is to overcome the adverse consequences of risk situation, but also the function to prevent them. This is the main difference between the social insurance and the social security, which is available only in adverse life situations.

Thus, the following important generalization can be made: the social risks are connected with adverse events and the probability of their occurrence can be predicted in advance, they can be prevented or at least we can prepare for them. It is necessary to develop a methodology that will provide an opportunity to assess the degree of occurrence probability of such events .

Social insurance must be considered as the main form of protection against social risks, as it is applied to the economically active population, people with earned income, which is the basis for insurance premiums calculating. They are accumulated in the particular insurance fund, which is separated from the budget. This fund ensures the insured person in the insurance case.

The probability of social risk occurrence must be assessed in advance. It allows the person to be insured, and thus fall under the protection of the insurance system before the insured event occurrence. This will allow not only to prepare for the adverse events occurrence, but also to prevent it in advance.

Since the system of social insurance compensates only legitimate income from employment and equal to its activities, it can be considered as an important element of the mechanism to stimulate employment and entrepreneurial activity of citizens.

Social insurance system has a number of disadvantages and needs to be improved, in particular: to improve the mechanism of insured persons providing with benefits and social services, policies differentiated insurance rates improvement, economic stimulation of employers providing in the implementation of measures to prevent industrial risks.

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Надрага В. І. Соцстрах в системі соціального регулювання ризиків

Стаття присвячена аналізу соціального страхування в контексті його основної функції – захисту від соціальних ризиків. В результаті дослідження взаємозв'язку соціального страхування та соціального ризику, останній можна представити у вигляді ймовірності настання матеріальної скрути внаслідок відсутності заробітку за об'єктивних соціально-значимих причин та у зв'язку з додатковими витратами по утриманню дітей чи інших членів сім'ї, а також по задоволенню потреб в медичних чи соціальних послугах. Об'єктом правовідносин із загальнообов'язкового державного соціального страхування у цьому випадку виступає страховий захист від соціальних ризиків. Ризик актуалізується в рамках системи взаємопов'язаних правовідносин, учасниками яких є страхувальник, страховик і застрахована особа. Цільовим призначенням такого взаємозв'язку є забезпечення страхового захисту економічно активного населення у випадку настання соціально-ризикової ситуації, її попередження й компенсації наслідків. Ризикова функція страхування трансформується в певну плату страховикові

матеріальної відповідальності за наслідки ризику, зумовленого подіями, перелік яких передбачено чинним законодавством.

В якості базових принципів соціального страхування виділено наступні: обов'язковість, чітка залежність між участю у фінансуванні системи та розміром пенсій і допомог; забезпечення рівня виплат, зіставного з доходом застрахованої особи протягом трудового життя; відособленість засобів; участь соціальних партнерів в управлінні відповідним фондом.

Відзначається, що на відміну від України, загальною тенденцією для країн-членів ЄС є прагнення до оптимізації соціальних внесків. Так, виходячи з прогнозних оцінок для Євросоюзу, протягом наступних п'ятдесяти років передбачається їх збільшення лише на 5 % від ВВП - у відповідних оцінках враховуються очікувані наслідки реформ у сфері соціального забезпечення, які вже були законодавчо закріплені й проведені (включаючи нові схеми надання допомог та умов пенсійного забезпечення), а також очікуване зростання частки робочої сили в загальній чисельності населення й рівні зайнятості.

Сучасна система соціального страхування в Україні за своїм змістом не є страховою у класичному розумінні, оскільки зберігає і виконує функції соціального забезпечення (допомоги). Вона має ряд недоліків і потребує вдосконалення, зокрема: оптимізація механізму надання застрахованим особам матеріального забезпечення та соціальних послуг; удосконалення політики диференційованих страхових тарифів; забезпечення системи економічного стимулювання роботодавців у здійсненні заходів профілактики виробничих ризиків. Для зменшення навантаження на фонд оплати праці необхідно розширити базу нарахування страхових внесків, удосконалити систему збору та обліку страхових внесків та поетапно забезпечити паритетну участь працівників та роботодавців у сплаті страхових внесків на загальнообов'язкове державне соціальне страхування.

Ключові слова: соціальне страхування, соціальні ризики, страхові внески, єдиний внесок.

Надрага В. И. Социальное страхование в системе социального регулирования рисков

Статья посвящена анализу социального страхования в контексте его основной функции – защиты от социальных рисков. В результате исследования взаимосвязи социального страхования и социального риска, последний можно представить в виде вероятности наступления материальной нужды вследствие отсутствия доходов по объективным социально-экономическим причинам и в связи с дополнительными расходами по содержанию детей или других членов семьи, а также по удовлетворению потребностей в медицинских или социальных услугах. Объектом правоотношений по общеобязательному социальному страхованию в этом случае выступает страховая защита от социальных рисков.

Риск актуализируется в рамках системы взаимосвязанных правоотношений, участниками которых выступают страховщик, страховик и застрахованное лицо.

Целевое назначение такой взаимосвязи – это обеспечение страховой защиты экономически активного населения в случае наступления социально-рисковой ситуации, ее предупреждение и компенсация последствий. Рисковая функция страхования трансформируется в определенную плату страховщику материальной ответственности за последствия риска, обусловленного событиями, перечень которых закреплен в законодательстве.

В качестве базовых принципов социального страхования выделены следующие: обязательность, четкая зависимость между участием в финансировании системы и размером пенсий и пособий, обеспечение уровня выплат, сопоставимого с доходами застрахованного лица на протяжении трудовой жизни, обезличенность средств, участие социальных партнеров в управлении соответствующим фондом.

Отмечено, что в отличие от Украины, общей тенденцией для стран-членов ЕС выступает стремление к оптимизации социальных взносов. Так, исходя с прогнозных оценок для Евросоюза, на протяжении следующих пятидесяти лет предполагается их увеличение лишь на 5% от ВВП – в соответствующих оценках учитываются ожидаемые результаты реформ в сфере социального обеспечения, которые уже были законодательно закреплены и проведены (включая новые схемы предоставления помощи и условий пенсионного обеспечения), а также ожидаемое увеличение доли рабочей силы в общей численности населения и уровне занятости.

Современная система социального страхования в Украине по своему содержанию не является страховой в классическом понимании, поскольку сохраняет и выполняет функции социального обеспечения (помощи). Для нее характерны ряд недостатков, она нуждается в усовершенствовании, а именно: оптимизация механизма назначения застрахованным лицам материального обеспечения и предоставления социальных услуг; усовершенствование политики дифференцированных страховых тарифов; обеспечение системы экономического стимулирования работодателей в проведении мер профилактики производственных рисков. Для уменьшения нагрузки на фонд оплаты труда необходимо увеличить базу начисления страховых взносов, усовершенствовать систему сбора и учета страховых взносов, а также поэтапно обеспечить паритетное участие работников и работодателей в оплате страховых взносов по обязательному государственному социальному страхованию.

Ключевые слова: социальное страхование, социальные риски, страховые взносы, единый взнос.

Nadraga V. I. The Social Insurance in the System of the Social Risks Regulation

This paper analyzes the social insurance in the context of its basic function – protection against social risks. The results of the study of the social insurance and social risk relationships help propose the definition of the social risk. We consider the social risk as the probability of financial distress due to the lack of earnings because of objective socially significant reasons and due to the additional costs of the children or other family members' allowance, as well as to meet the needs of health and social services. In this case, the object of compulsory state social insurance relations is the coverage of social risk. The social risk is actualized under a system of interconnected relationships. Its participants are the insurance carrier, the insurer and the insured. The purpose of these mentioned relationships is to provide insurance protection of the economically active population in the event of the social-risk situation, its prevention and effects compensation. Insurance risk function is transformed into a fee insurer liability for the consequences of the risk caused by the events which are preappointed by current legislation.

The basic principles of social insurance are: commitment, a clear dependence between participation in the financing system and the size of pensions and benefits, provision of payments, comparable with the income of the insured person during his / her working life, facilities isolation and participation of the social partners in the governance.

It has been mentioned that in contradiction to Ukraine the general trend for the member states of the European Union is a striving for the social contributions optimization. Thus, based on projections over the next fifty years, they expect an increase by only 5 % of GDP - in the corresponding estimates, they take into account the expected effects of reforms in the social security that have already been legislated and done (including new aid schemes and conditions of pensions), and the expected increase of labor share in total population and employment levels.

The current social insurance system in Ukraine in its content is not insurance in the classic sense, as it stores and serves the social security (benefits) functions. It has a number of disadvantages and needs to be improved, in particular: to improve the mechanism of insured persons providing with benefits and social services, policies differentiated insurance rates improvement, economic stimulation of employers providing in the implementation of measures to prevent industrial risks. To reduce the load on the payroll fund it is necessary to expand the base of insurance premiums accounting, to improve the system of collecting and accounting of insurance premiums and gradually ensure parity among employees and employers to pay insurance contributions for compulsory social state insurance.

Keywords: social insurance, social risks, insurance premiums, single social contribution.

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DEPENDENCE OF THE UKRAINIAN ECONOMY ON THE FOREIGN CAPITAL

Introduction. World experience shows that economies in transition are not able to overcome the economic crisis without attracting and making effective use of foreign capital. Accumulating the capital, providing access to modern technology and management, foreign investment has not only resulted in national investment markets, but also make other economic factors more dynamic in the development of markets of goods and services. In addition, foreign capital contributes to the macroeconomic stabilization measures.

The relevance of the topic chosen is that foreign capital plays a major role in the development of any state regardless of the economic potential of the country as well as foreign direct investment promotes economic growth in the recipient country intensifying the competition. Foreign capital has contributed to the development of Ukraine's economy as foreign capital is a source of capital investment in production, development and implementation of advanced management and marketing techniques. Ukraine deserves special attention as a country in transition which was able to increase FDI inflows by 35 % in 2010 after declining 56 % in 2009 year [1]. In terms of economic potential, as shown in expert estimates, Ukraine is among the top five countries in Europe, and in case of the efficiency of the use of foreign capital Ukraine is among the top two hundred countries.

Analysis of recent research and publications. Empirical evidence on the dependence between FDI and the economic growth is still inconclusive. Recent studies have examined some factors that could influence this relationship but have not extensively addressed the role of the characteristics of foreign direct investment (FDI) and how strong the dependence of the economy on the foreign capital is.

The latter issue has fuelled passionate debates amongst economists, policymakers, and in civil society. According to *Eswar S. Prasad*, it has gained importance in recent years because of the curious, even seemingly perverse, pattern of global imbalances, whereby capital seems to be flowing "uphill" from poorer to richer countries. But it has economic relevance beyond the current conjuncture because it goes to the heart of the process of development and the role that foreign capital plays in it. It also has enduring policy relevance as developing countries try to decide whether to open themselves up more to the process of financial globalization, and as they attempt to figure out in what form, and to what degree, they should do so [2, p. 2].

The importance of the presence of foreign capital in the economy of host countries was proved on the "flying geese" or "catching up" paradigm which was developed in the late 1930s by the Japanese scientist K.Akamatsu. As a generalized theory of economic development it explains how the foreign capital permits for developing countries to catch up and even overtake the advanced countries, but a recipient country should remain open to direct investment from foreign companies. One economy, like the first goose in a V-shaped formation, can lead other economies toward industrialization, passing older technologies down to the followers as its own incomes rise and it moves into newer technologies [3, p.12].

Developing the research of foreign capital influence on a host country credit should be given to the studies of foreign authors (B.Sharma, D.Willem, R. Barrell, M.Todaro, S.Smith and others) on the assessment the investments effectiveness in market conditions. Significant contribution to economic theory also made by Ukrainian scientists: Dyachuk V.D., Grishayeva J.G., Lazebnyk L.V., Anshyn V.M., Blank I.A. and others. The major part of their researches is dedicated to the relation between foreign capital and economic growth.

The purpose of the article is to analyze foreign direct investments in the national economy, to estimate the level of Ukrainian economy's dependence on the foreign capital, to found out the factors of influence on FDI inflow to Ukraine.

The main material. The history of investing processes in the world gave to the seven main types of the foreign capital. The most popular of these types nowadays is foreign direct investment (FDI), as FDI have a great number of advantages for both investors and recipients.

Foreign direct investment has a lot of definitions. According to Todaro and Smith (2006) FDI is the investment by corporations like transnational and multinational in foreign countries having their head office in a developed country [6]. Another definition for FDI according to Wang (2005) FDI is the management and control of a company, or an enterprise or a facility with interest lasting for a long term in a foreign country [4]. According to Kumya and Wakasugi (1991) FDI is the process of acquiring and investing in a new or existing industry or business and expanding and managing it in a foreign country [5, p.48]. Foreign direct investment is the direct investment through governments or government agencies, or through enterprises either private or public ones [4].

Table 1

**The elasticity of structural transformations
in the economy of Ukraine**

Economic activity	Elasticity coefficient $\frac{\Delta GDP_i}{\Delta FDI_i}$
Agriculture, hunting and forestry	0.976
Mining	1.004
Manufacturing	0.891
Production and distribution of electricity, gas and water	0.772
Construction	0.825
Trade; repair of motor vehicles, household appliances and personal and household goods, hotels and restaurants	1.085
Transport and communications	1.065
Education	1.691
Health care and social service	1.497
Financing activities	0.587
Real estate, renting and business activities	1.051

Note: The table designed by the author based on the State Statistics Committee data [8].

To estimate the Ukrainian dependence on the foreign capital the picture of foreign capital operation in Ukraine should be drawn. Let us begin from identifying the level of investment attractiveness of Ukraine.

The index of investment attractiveness (IAI) of Ukraine in January-September 2013 declined by 0.95 points – to the level of 2.56 on a scale, falling to a level of performance of the IIIrd quarter of 2009. Falling trajectory of investment attractiveness index of Ukraine is from 3.39 in the second quarter 2013 to 2.56 in the third quarter. In the first quarter of 2014 the index of investment attractiveness of Ukraine increased to 2.72 points out of five. This is the highest rate since 2011, Tomas Fiala, the president of the European Business Association (EBA), said. According to the EBA research the estimate investment attractiveness of Ukraine has increased since the lowest in the history of the study of the index in IV'2013, when it fell to 1.81. This is an alarm, which indicates the lack of investor's confidence in the economy and the market. Causes of decline can be divided into external (global market instability) and internal factors. The condition of the U.S. and European markets cannot but impact on the economy of Ukraine. The internal causes comprise corruption, increased pressure on business and the inadequate reforms [6].

Investigating the impact of FDI on the economy is also important to analyze the geographic structure of investment and spheres of the national economy in which these investments are made. The largest share in the FDI structure is taken by Cyprus (31.7%). This is explained by the fact that under the guise of FDI the previously taken capital returns to Ukraine, but now is legalized. Cyprus is followed by Germany (12%), the Netherlands (9%), Russia (7%), Austria (6%), United Kingdom (5%) [1].

Further analysis of the structural transformation in the field of foreign direct investment and GDP by economic activity in Ukraine shows that the largest share of foreign investment was attracted to the following economic activities:

- manufacturing industry (27.93 % of total fdi in 2013);
- financial activities (33.68 % of total fdi in 2013);
- real estate, renting and business activities (10.63 % of total fdi in 2013).

The structure of economic activities represented in Table 1 is associated with a high rate of return on funds invested and with a significant return on investment.

To estimate the level of the Ukrainian economy dependence on foreign capital it is appropriate to use elasticity *analysis*.

Let us take a calculation of the elasticity with respect to GDP dynamics in terms of the dynamics of foreign investment in certain sectors (table 1).

Calculation shows that the current practice of priority investment is of greater importance not only for the recipient country (Ukraine), but for the donor investing country. Examining the value of the coefficient of elasticity of changes in gross domestic product for the change in the volume of foreign direct investment, it is easy to come to the conclusion that with the same size of investment the funds in education and health make the largest contribution to GDP. Development of human capital and FDI reinforce each other through complementary effects: increased qualification of the workforce (training, new skills and special education for workers of transnational corporations and enterprises with foreign capital) - the direct effect; social stability and improving the nation's health - indirect effect [8]. Relatively high coefficient of elasticity belongs to the mining (1.004), transport and communication activities (1,065), trade and tourism (1,085).

To determine the degree of communication FDI and GDP there was used a popular method of economic phenomena, correlation and regression analysis (table 3).

The formula chosen to calculate a correlation coefficient is [4]:

$$r = \frac{n \sum xy - (\sum x)(\sum y)}{\sqrt{[n \sum x^2 - (\sum x)^2][n \sum y^2 - (\sum y)^2]}} \quad (1)$$

In our case FDI was chosen as the one of two variables (x) (million USD) to calculate the correlation coefficient to evaluate the relation between the second variable GDP (y) (billion UAH). It goes without saying that FDI does have influence on Ukrainian economy,

buy now we will have the numbers (the correlation coefficient) to prove this fact. We have made the following calculations of the correlation coefficient (table 2).

Table 2

Calculation of the correlation ratio

Years	FDI (x)	GDP (y)	x*y	x ²	y ²
2002	4555.3	225.81	1028632.3	20750758.09	50990.16
2003	5471.8	267.344	1462852.9	29940595.24	71472.81
2004	6794.4	345.113	2344835.8	46163871.36	119103
2005	9047	441.452	3993816.2	81848209	194879.9
2006	16890	544.153	9190744.2	285272100	296102.5
2007	21607.3	720.731	15573051	466875413.3	519453.2
2008	29542.7	948.056	28008134	872771123.3	898810.2
2009	35616.4	913.345	32530061	1268527949	834199.1
2010	40053	1082.569	43360136	1604242809	1171956
2011	44806	1316.6	58991580	2007577636	1733436
2012	50333.9	1408.889	70914878	2533501489	1984968
2013	55296.8	1454.931	80453029	3057736090	2116824
Sum	320014.6	9668.993	347851749	12275208044	9992194
Average	26667.88	805.7494			

After substituting in the formula 1 we have got the correlation coefficient:

$$\text{The correlation coefficient} = 0,99$$

The calculations let us reach the following conclusions:

– because the correlation coefficient $r_{xy} = 0,99$, applying the *Chaddock scale* of the determination coefficient, FDI and GDP are very strongly interrelated and are directly related (because $r_{xy} > 0$);

– coefficient of determination $R^2 = 0,199$, and it means that the variation in GDP depends on changes in the volume of investment by 19.9%.

There is strong dependence between Ukrainian economic growth (GDP) and FDI. It means that the more FDI will be attracted to Ukraine, the more resources for economic growth Ukraine will have. So, it

would be useful to find out what are the main factors which have influence on the FDI amount in Ukraine.

Let us use the correlation and regression analysis to estimate the dependence of FDI inflow on the several factors. FDI (million dollars) were selected as the result factor. The factor variables are such indicators:

X1 - GDP, billion UAH.

X2 - the average wage, UAH.

X3 - the amount of public debt, billion UAH.

X4 - level of the tax burden, %;

X5 - profitability of domestic enterprises %;

X6 - average interest rate on deposits, %;

X7 - the official rate of UAH to the USD, for \$ 100;

X8 – inflation, %.

The data for correlation and regression analysis of the impact of factor variables on direct investments is shown in the table 3 [8, 9].

Table 3

**Summary data for correlation and regression analysis of the impact factor values
X1, X2, X3, X4, X5, X6, X7, X8 on FDI**

Years	Y	X1	X2	X3	X4	X5	X6	X7	X8
2002	4555.3	225.81	311	63.2923	18	4.8	11.2	537.21	6.1
2003	5471.8	267.344	376	64.4687	20.1	3.7	7.8	532.66	-0.6
2004	6794.4	345.113	462	66.1332	20.32	2.6	7.1	533.27	8.2
2005	9047	441.452	590	67.6823	18.3	6.4	7.8	531.92	12.3
2006	16890	544.153	806	63.1446	22.21	7	8	512.47	10.3
2007	21607.3	720.731	1041	66.1137	23.11	6.6	6.8	505	11.6
2008	29542.7	948.056	1351	71.2943	22.62	6.8	7.2	505	16.6
2009	35616.4	913.345	1806	130.6896	23.92	3.9	8.3	526.72	22.3
2010	40053	1082.569	1906	301.4284	22.78	3.3	11.8	779.12	12.3
2011	44806	1316.6	2239	434.32	21.42	4	9.4	793.56	9.1
2012	50333.9	1408.889	2633	473.1216	25.5	5.9	7.3	796.76	4.6
2013	55296.8	1454.931	3337	516.405	24.6	5	11.3	799.1	-0.2

According to the eight-factor regression analysis the economic and mathematical model was constructed:

$$Y = -29408.57 + 26.15X_1 + 1.88X_2 + 21.2X_3 + 1243.75X_4 - 229.88X_5 + 990.22X_6 - 13.45X_7 + 195.25X_8$$

This equation shows that the greatest impact on FDI inflow to Ukraine results from such factors as:

1. The level of tax burden. If this factor changes by 1%, the volume of direct investments will change to 1243.75 million;

2. Profitability of domestic enterprises. An increase of this factor by 1% will cause the increase of direct investment to 733.99 million;

3. Average interest rate on deposits. If this factor changes by 1%, the volume of direct investments will change to 990.22 million.

4. Inflation rate. An increase of this factor by 1% leads to the increase of direct investment to 195.25 million.

The input data are transformed to the correlation matrix calculated on the basis of table 2.4, which is used to measure the strength of the relationship between selected variables and the factorial scoring index (Table 4).

Let us transform the numerical values of the correlation coefficient obtained in the correlation matrix (table 4), into their text semantic equivalents (table 5).

Table 4

Correlation matrix

	Y	X1	X2	X3	X4	X5	X6	X7	X8
Y	1								
X1	-0.99173	1							
X2	0.984085	0.971122	1						
X3	0.88831	0.888197	0.919931	1					
X4	0.826347	0.8029	0.796882	0.596927	1				
X5	0.010071	0.060651	-0.01347	-0.15235	0.145779	1			
X6	0.315873	0.253296	0.353908	0.44016	-0.05108	-0.35612	1		
X7	0.81588	0.816116	0.83115	0.965242	0.482772	-0.25918	0.539638	1	
X8	0.01422	0.009548	-0.1009	-0.36328	0.094452	0.145001	-0.23322	-0.3714	1

Table 5

Transformed correlation matrix

	Y	X1	X2	X3	X4	X5	X6	X7	X8
Y	1								
X1	Very strong	1							
X2	Very strong	Very strong	1						
X3	Strong	Strong	Very strong	1					
X4	Strong	Strong	Strong	Appreciable	1				
X5	No connection	No connection	No connection	Weak	Weak	1			
X6	Moderate	Weak	Moderate	Moderate	No connection	Moderate	1		
X7	Strong	Strong	Strong	Very strong	Moderate	Weak	Appreciable	1	
X8	No connection	No connection	Weak	Moderate	No connection	Weak	Weak	Moderate	1

Calculation of the correlation matrix leads to the conclusion that there is a significant relation between Y and X factors, except the X5 (profitability of domestic enterprises) and X8 (inflation rate).

Conclusion. Thus, the calculations carried out give a clear picture of the Ukrainian economy's dependence on the foreign capital. The Ukrainian economic growth very strongly depends on the FDI in-

flows. This fact was proved with the help of two methods: Elasticity Analysis and Correlation and Regression Analysis. Calculation of elasticity shows that the current practice of priority investment is of greater importance not only for the recipient country (Ukraine), but for the donor investing country as well. Examining the value of the coefficient of elasticity of changes in gross domestic product for the change in the

volume of foreign direct investment, it is easy to come to the conclusion that with the same size of investment the funds in education and health make the largest contribution to GDP.

The result of regression analysis of the relation between the direct investment in Ukraine and the selected factors shows that it is necessary to create and maintain a favorable tax climate and increase the profitability of domestic enterprises to ensure a stable increase in investments as the main indicator of investment attractiveness of the country. The clear proof of such suggestions are the results of the regression analysis summarised above, according to which the level of the tax burden, the level of profitability of the enterprises have greatest impact on the volume of direct investments. In this subsection we use multifactorial correlation analysis unlike the previous subsection where there were only two variables (FDI and GDP). We have found out the main factors on influence on FDI inflow to Ukraine they are the profitability of domestic enterprises, the tax burden.

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Меденцева М. М. Залежність української економіки від іноземного капіталу

У статті розглянуто функціонування іноземного капіталу в Україні. Дана оцінка інвестиційної привабливості України. Проведено аналіз еластичності і кореляційно-регресійний аналіз для визначення ступеня залежності української економіки від іноземного капіталу. Проведено багатофакторний кореляційний аналіз для визначення факторів впливу на обсяги прямих іноземних інвестицій в Україну.

Ключові слова: іноземний капітал, прямі іноземні інвестиції (ПІІ), інвестиційна привабливість, еластичність, кореляційно-регресійний аналіз.

Меденцева М. М. Зависимость украинской экономики от иностранного капитала

В статье рассмотрено функционирование иностранного капитала в Украине. Дана оценка инвестиционной привлекательности Украины. Проведен анализ эластичности и корреляционно-регрессионный анализ для определения степени зависимости украинской экономики от иностранного капитала. Проведен многофакторный корреляционный анализ для определения факторов влияния на объемы прямых иностранных инвестиций в Украину.

Ключевые слова: иностранный капитал, прямые иностранные инвестиции (ПИИ), инвестиционная привлекательность, эластичность, корреляционно-регрессионный анализ.

Medentseva M. M. Dependence of the Ukrainian Economy on Foreign Capital

The article gives a clear picture of the foreign capital operation in Ukraine. The investment attractiveness of Ukraine was defined. The analysis of elasticity and correlation and regression analysis were carried out to determine the level of Ukrainian economy's dependence on the foreign capital. The multivariate correlation analysis was carried out to find out the factors of influence on foreign direct investment inflow in Ukraine.

Keywords: foreign capital, foreign direct investment (FDI), investment attraction, elasticity, correlation and regression analysis.

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SEARCHING FOR FINANCIAL BUBBLE IN THE PRIVATE SPACE SECTOR

Modern market economy is not protected from the risks which may lead to sharp decrease in rate of growth or even to cutback of economic activity. Assessing and managing risks is required to lessen the negative impact of possible crisis. In this sense, young and developing sectors of economy are more vulnerable to economic fluctuations as far as it takes several years to work out an appropriate strategy to handle the market crunch.

Among all the possible economic problems this research concerns financial bubble and, consequently, analysis of stock exchange. In this field Benjamin Graham and David Dodd are assumed to be pioneers who distinguished market price of the stock from its intrinsic value. Since the first edition of "Security Analysis" (Graham, Dodd 1934) [1] was published, it is considered to be the bible for investors. Almost 70 years later in 2002 Robert Brenner published his "The Boom and the Bubble: The US in the World Economy" [2] analyzing the causes of local and global bubbles of the 20th century. Mark Faber and Warren Buffet accepted and modernized the approach suggested by Graham and Dodd. Warren Buffet published a revised edition of "The Intelligent Investor: The Definitive Book on Val-

ue Investing" in 2006 [3]. Mark Faber used the concept of value investing to assess the investment attractiveness of the Asian companies ("Tomorrow's Gold: Asia's age of discovery", Faber 2010) [4]. Among the homeland researchers, Elena Chirkova deserves attention as an author of a unique book about the financial bubbles [5]: not only did she present a detailed overview of the most important financial bubbles, but she also singled out the most common causes of the bubble bursts.

The aim of this work is to analyze the private space sector of the world economy and to find out if there is a financial bubble. To handle this issue, it is relevant to define, what the "financial bubble" is, which criteria points at its appearing, and then to compare these theoretical conditions with the real situation in the target sector.

According to the Space Foundation annual Space Reports [6-11], share of Private Space Sector has been steadily increasing since 2005 till the present and nowadays it covers three fourth of the Global Space Market. In addition, total Space expenditures rocketed from \$190 billion to more than \$300 billion (Figure 1).

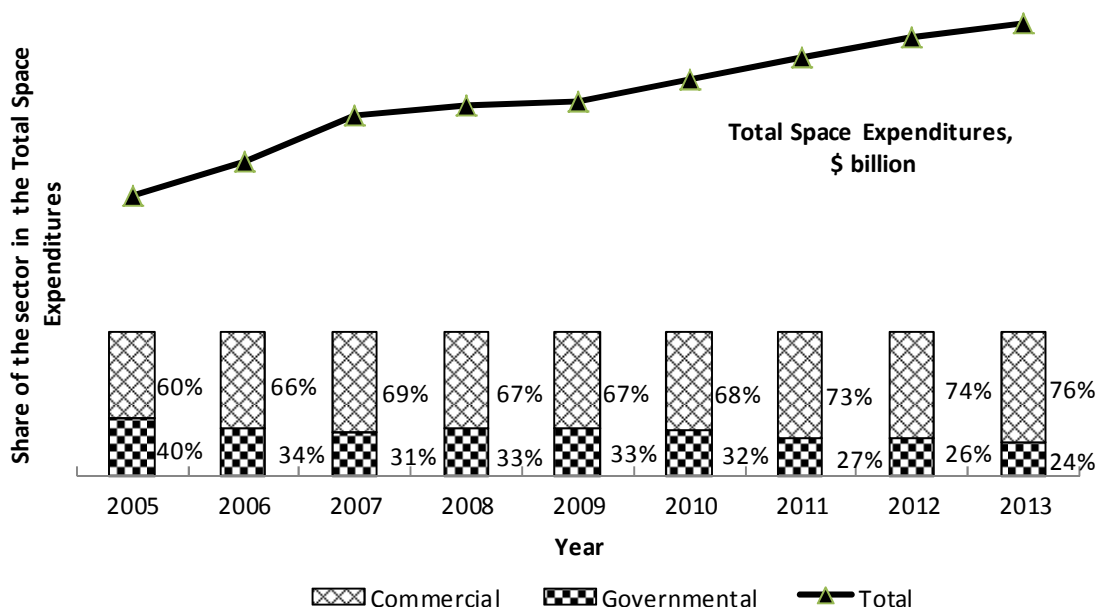


Fig. 1. Total Space Expenditures, 2005-2013 [6-11]

However, despite the increasing funding, significant step forward has not been taken yet. Space tourism is not a reality, lunar resources are not available, and asteroid mining is postponed until the next decade [8, p.17]. Such an inconsistency between expenditures and achievements may point at overvalued capacities of the industry. Costs of the projects with a low return on investment are getting higher, while most of these projects have a little value for shareholders. One can call it a venture investment, but the situation is somehow similar to the dotcom splash in the early 2000's. Almost 15 years ago overconfident investors invested in those companies that were related to online-business without even paying attention at the financial statements of the "dotcom" company. Ultimately, those companies became too overvalued and the bubble had burst as soon as investors had understood the difference between market price and intrinsic value of the dotcom shares [5, p.238-240].

In the literature there exist different approaches to the definition of the financial bubble. The challenge is that the emerging bubble is hardly distinguishable from the casual period of growth of the market. The most common definition of the bubble is "a situation in which prices for securities, especially stocks, rise far above their actual value" [12-13]. However this definition is generally thought to be of little practical use, actually the former Federal Reserve Chairman Mr. Greenspan once mentioned that "it was very difficult to identify definitively a bubble until after the fact – that is, when it is bursting we confirm its existence" [14]. Instead of quantitative, Robert Shiller suggested a qualitative definition: "the term "bubble" refers to a situation in which excessive public expectations of future price increases cause prices to be temporarily elevated" [15]. Elena Chirkova states that the bubble is growth in prices, which can not be explained by the fundamental factors and is followed by a sharp decrease after the bubble burst [5, p.244].

Despite there is no precise definition of the bubble phenomenon, economists are united concerning its causes. Financial bubble is suggested to appear as a result of extra exhilaration on the stock market, when investors all flock to a particular product or asset. In this respect, Robert Shiller argues that "the stock price increase is driven by irrational euphoria among individual investors, fed by an emphatic media" [16]. The biggest problem is that difference between developing economy and pre-bubble situation on the market is hardly distinguishable, and that has led to bubble bursts several times in the past (like the dotcom crisis in the beginning of the 21st century).

These are several "litmus papers" which can be used for a primary analysis of a market:

- Nonlinear growth of the share prices during a short time period;
- Growing number of companies that make IPO;

- Purely speculative attitude towards shares (short period of owing particular shares);

- Most companies shares are overvalued: their intrinsic price is lower than the market one [5, p.235-247].

Space Foundation, the largest non-profit space organization, provides a list of 28 private companies, which are strongly related to space exploration and commercialization. Among them there are such "blue chips" as Boeing and Lockheed Martin, Viasat and Northrop Grumman [6-11]. In the frame of our research dynamics of share prices of these companies have been investigated within the period between 2008 and 2014. According to the total rate of growth, all the companies were divided into four groups (Table 1):

- 1) Extra fast: this group consists of those companies which more than doubled their share price;

- 2) Fast: this group consists of companies which rate of growth is between 50% and 100%;

- 3) Stable: this group consists of companies with a stable rate of growth which have increased their share price no more than by 50%;

- 4) Negative: this group consists of companies which share price has decreased.

Table 1

Classification of Space Companies according to the Rate of Growth [6-11]

Rate of growth	Number of companies
Extra fast (>100%)	8
Fast (>50%)	8
Stable (>0%)	9
Negative (<0%)	3

So, almost third of companies more than doubled their share prices, while Loral Space and Communications multiplied it by 4 (from \$18,37 per share in August 2008 to \$73,56 per share in August 2014). Without any denial, that is the direct consequence of NASA insisting on satellite development programs in which Loral has taken part [17]. Not only Loral, but also Boeing and Northrop Grumman gained an advantage from cooperating with NASA (88,38% and 99,03% of growth respectively)[9, 46]. In addition, European Aeronautic Defense and Space (EADS) has also increased its share price by 285%. That is the evidence of European Union involvement in the space commercialization. There is also a possibility that later there will be more European companies among the "blue chips" of the industry.

Unfortunately, there were some companies which activity led to share price decrease, for instance Trimble Navigation, Iridium Communication, Comtech Telecommunication (-4,28%, -6,22%, -20,49% respectively). All of them operated in the same field with Loral Space and Communication, but due to inability

to provide reliable and secure satellite-delivered services they performed much worse than Loral did.

The research has also revealed that up to the middle of 2013 most of the companies had been regaining position lost due to the world financial crisis. During 2008 and 2009 governmental expenditures on space programs suffered a huge shortening and that immediately hurt traders' and investors' interest in "space shares". However, within the last year one can notice an exponential share price growth in several companies. For example, price of the DISH Network share equals to \$64,92, while a year ago it cost only \$44,8. Such level of growth is noticed also in Direct TV (from \$60,29 to \$86,98 per share).

Another part of our research concerns comparison of the market price of shares with their intrinsic, or fundamental, value. It allows us to judge, whether the target market is overvalued or undervalued.

According to methodology of Warren Buffet [18], intrinsic value of a share is calculated on the basis of estimated yield in a long-run period, usually 5 or 10 years. However, there are some subjectively pre-estimated values used in calculations, like an average growth rate, which may lead to obtaining different results of intrinsic value for the same company. It is therefore recommended to admit a 5% deviation from

the estimated intrinsic value while comparing it with the market share price of a target company.

To compare intrinsic value and market price Relative Graham Value formula (1) can be used [18].

$$RGV = \frac{IV}{MP}, \quad (1)$$

where *RGV* - Relative Graham Value;

IV – Intrinsic Value;

MP – Market Price.

If $RGV < 1$, it means that the explored share is overvalued. $RGV > 1$ points at undervalued company, which has a space for improvement and whose share price is likely to grow. To take a 5% confidence interval into account, Intrinsic Value was multiplied by 0,95(lower interval limit) and 1,05(upper interval limit). If the upper interval limit is smaller than the Market Price, it means that *RGV* will definitely be lower than 1 and vice versa. But if the Market Price lies between upper and lower interval limits, than we assume that Market Price of the company share is approximately equal to its Intrinsic Value. The results of *RGV* calculations for the 28 examined companies are presented below (Table 2).

Table 2

Relative Graham Value of Space Companies

<i>RGV</i> < 1 (1,05* <i>IV</i> < <i>MP</i>)	<i>RGV</i> ≈ 1 (0,95* <i>IV</i> < <i>MP</i> < 1,05* <i>IV</i>)	<i>RGV</i> > 1 (0,95* <i>IV</i> > <i>MP</i>)
Alliant Techsystems Inc.* The Boeing Co.* L-3 Communications Holdings, Inc.* Lockheed Martin Corp.* Northrop Grumman Corp.* Honeywell International, Inc.* Raytheon Co.** ITT Exelis Inc.** Garmin Ltd.** Harris Corp.*** Loral Space & Communications Inc.*** Orbital Sciences Corp.*** DISH Network Corp.*** Orbcomm Inc.***	Computer Sciences Corp.** DigitalGlobe, Inc.** Trimble Navigation Ltd.*** Iridium Communications Inc.***	Comtech Telecommunications Corp.*** EchoStar Corp.*** ViaSat, Inc.*** Sirius XM Radio Inc.*** Eutelsat Communications S.A.***

* - Aerospace & Defense

** - IT Services and GPS Services

*** - Satellite Manufacturing and Communications

In accordance with the *RGV* value we should admit that more than half of the companies are overvalued, which implicitly means that there is a risk of bubble appearing in the private space sector. It should also be noticed that all the companies of Aerospace and Defense sector are overvalued, so they should be investigated more thoroughly.

However, there is another possible cause for such values. Companies of Aerospace and Defense sector (Boeing, Northrop Grumman, Lockheed Martin, L-3 Communication etc.) are diversified companies, and spacecraft construction is not the only activity for them. Therefore, without a detailed research it is im-

possible to define, which particular activity has led to the gap between market price and intrinsic value.

Another symptom of bubble appearing is a large number of companies which are becoming public in order to raise funds in the shortest term [5, 238]. For

example, before the dotcom crisis annual number of IPOs in the IT sphere multiplied by 7.3. In order to check it, we can compose a timescale of all the IPOs of the private space companies and find out if there is a rush (Figure 2).

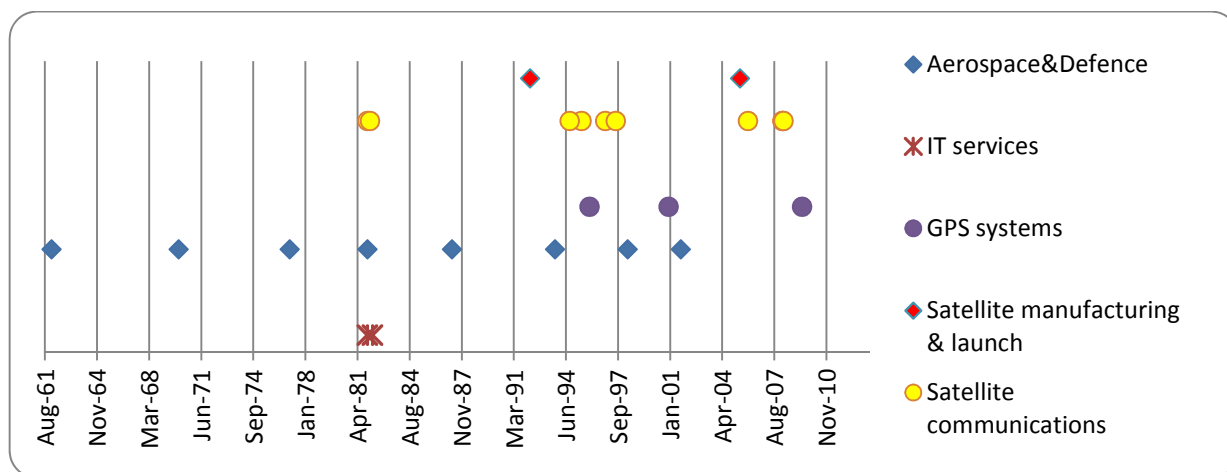


Fig. 2. Timescale of the Space companies IPO dates [19-20]

As it is seen, within the past 10 years only 4 companies appeared on the market. There was a kind of rush between the years 1994 and 2002, when 11 companies launched an issue and became public, but it is not likely to have an influence on what is happening nowadays.

One of the factors which explain small number of strong players on the market is high market entry threshold. The task of funding an average space company can be managed only by the richest tycoons or by the government. Both of them are present on the market. For example, Elon Musk (138th position in the Forbes rating) who is a CEO of SpaceX, says he invested almost all his savings in establishing SpaceX. As a representative of the government, NASA regulates the activity of private space companies by the means of state procurements. But for NASA help several satellite manufacturing companies would not have survived until nowadays.

To sum it up, we have to admit that the private space sector bears the mark of being overvalued. Almost half of the investigated companies performed a non-linear growth in share prices within the last year, while there are no visible reasons for increase in their fundamental value. However, number of companies on the market is stable within the last 10 years and is not likely to grow in the nearest future, so it is too early to make judgments about the rush in the industry. In addition, there is a strong governmental regulator, like NASA, who should prevent companies from misleading their shareholders and unconditional growth of share price. There is also a merely subjective, but important factor: CEOs of several companies, like SpaceX and BlueOrigin, also were CEOs of PayPal

and Amazon.com and have successfully survived the dotcom crisis, so they have a relevant experience and should not allow their companies to become too overvalued. Without any denial, to find out more precisely, if there is a risk of a bubble appearing, more detailed investigation is required.

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Малишко А. В., Парпаров Д. Ю. В пошуках фінансового бульбара в секторі приватної космічної індустрії

Ця стаття стосується фінансового аналізу сектору приватної космічної індустрії. Мета цієї статті полягає у визначенні наявності фінансового бульбара в приватному секторі глобальної космічної індустрії чи скасуванні можливості її існування. Розглянуті різні підходи до тлумачення дефініції «фінансовий бульбар». Залежно від цих дефініцій низка критеріїв, що свідчать про формування бульбара, була запропонована. Основна частина дослідження базується на аналізі вартості акцій компаній, чия діяльність пов'язана з освоєнням та комерціалізацією космічного простору. Застосована методологія Уоррена Баффета для калькуляції внутрішньої вартості цінних паперів для виявлення недооцінених

та переоцінених компаній у досліджуваному секторі економіки. Окрім цього, проведено аналіз періодичності утворення нових компаній на ринку аерокосмічної індустрії.

Ключові слова: фінанси, приватна космічна індустрія, освоєння, комерціалізація.

Малышко А. В., Парпаров Д. Ю. В поисках финансового пузыря в секторе частной космической индустрии

Эта статья касается финансового анализа сектора частной космической индустрии. Цель данной статьи заключается в определении наличия финансового пузыря в частном секторе мировой космической индустрии. В статье рассмотрены различные подходы к определению понятия «финансовый пузырь». В зависимости от этих дефиниций был предложен ряд критериев, свидетельствующих о формировании пузыря. Основная часть исследования базируется на анализе цены акций компаний, чья деятельность связана с освоением и комерциализацией космического пространства. Применена методология Уоррена Баффета для калькуляции внутренней стоимости ценных бумаг для определения недооцененных и переоцененных компаний в целевом секторе экономики. Кроме этого, проанализирована частота появления новых компаний на рынке аэрокосмической индустрии.

Ключевые слова: финансы, частная космическая индустрия, освоение, комерциализация.

Malyshko A. V., Parparov D. Y. Searching for Financial Bubble in the Private Space Sector

This article is related to financial analysis of the space sector of economy. The aim of this project is to find out whether there is a bubble in the private segment of the global space economy or not. Different approaches to the definition of the financial bubble are overviewed. Depending on these definitions several criteria were singled out as symptoms of the bubble appearance. The main part of the research grounds on the analysis of the dynamics of share prices of the companies which activity is related to space exploration and commercialization. Buffett's approach to calculation of the intrinsic value was used to define over or undervalued companies in the target sector. The research also concerns the analysis of frequency of new companies appearing on the market.

Keywords: finances, private space industry, mastering, commercialization.

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OPTIONS FOR MODELLING THE FINANCIAL VIABILITY OF SOFIX COMPANIES IN THE POST-CRISIS YEARS

The main objective of any business entity is to achieve positive financial results which are evidence of sound managing practices as well as an indicator of profit and growth.² During a crisis, Bulgarian companies face substantial difficulties which lead to shrink in production, reduced advertising, and in some cases, to making loss for several years on end. These could be explained both with the deteriorated economic environment in which companies operate during a crisis and with the possibility that their customers (i.e. other companies and households)³ might be going through a difficult period as well. It is therefore necessary to assess the financial viability of companies by employing models for predicting bankruptcy probability. Financial managers' awareness about the essence of failure is vital to the financial-managerial policy of companies. Therefore, financial managers must be familiar with the nature of failure, what is more, they must be able to predict a possible failure in advance and have the knowledge how to deal with the threat of a bankruptcy. Analysis of a potential financial distress which a company is facing and which may result in liquidity shortage, insolvency, or even bankruptcy, is a major component of overall corporate financial management. As a matter of fact, when undertaking any activity that is related to starting a production or making some investment, it is important to take into account different downturn scenarios. Profit and growth are goals which all companies pursue, yet their opposites, failure and liquidation, must be deemed just as likely.⁴

The ability to predict corporate failure due to insolvency far before it has become a fact is important both to managers and lenders of enterprises.⁵ Corporate bankruptcy reflects problems which have occurred in

the production, the financial management, or the funding of a company. There might be a variety of reasons behind that a deteriorated economic environment, customers being in financial distress, delayed payments to lenders and suppliers, etc. which are the major prerequisites for financial disturbances within a company. The financial analysis of each company is based on the assessment of its capital structure and market performance; analysis of its profitability and earnings; and evaluation of its assets and liquidity. A further instrument which might be employed in the analysis might also be the assessment of bankruptcy probability.

Models for predicting corporate failure are among the main techniques and instruments for determining the future status of companies on the basis of applying a set of financial ratios. The possibility to predict financial insolvency is extremely important to private investors (the shareholders of a company) and from a social perspective, since this is a signal for public resources mismanagement.

A lot of scientists have proposed different models for predicting a potential failure of companies. These models are based on the assessment of the financial data about companies which are provided in their balance sheets and their income statements as various ratios. The first model for predicting bankruptcy by employing financial ratios was developed by W. H. Beaver in 1966.⁶ The underlying objective of his work was to assess the financial situation of a company applying for a loan by analyzing its solvency, the terms on which a loan could be extended⁷ as well as the capacity of the company to service its debt in due time. In order to do so, Beaver determined a ratio which is calculated as a correlation between the value of the cash flow and the amount of the liabilities of a company.

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² Adamov, V. *Finansi na firmata*. Biblioteka Obrazovanie i nauka, # 28, Svishtov. 2012, p. 492.

³ Pavlova, M. *Faktorno vyzdeistvie vyrhu bogatstvoto na domakinstvata v . Bulgaria*. Факторное воздействие на богатство домашних хозяйств в Республике Болгарии/Економіка України в умовах глобалізації і регіоналізації: Збірник тез доповідей : Міжнародної науково - практичної Інтернет-конференції студентів та молодих вчених – Тернопіль 4-5 квітня 2014 року., THEU, 2014, с. 214-217.

⁴ Adamov, V. *Finansi na firmata*. Biblioteka Obrazovanie i nauka, # 28, Svishtov. 2012, p. 493.

⁵ Kasarova, V. *Modeli i pokazateli za analiz na finansovata ustoychivost na kompaniyata*. Nov balgarski iniversitet. 2010.

⁶ William H. Beaver *Empirical Research in Accounting: Selected Studies 1966* Journal of Accounting Research Vol. 4, (1966), p. 71-111 / – Mode <http://www.jstor.org/discover/10.2307/2490171?sid=21105896258411&uid=2&uid=4/>.

⁷ Marinov, I. *Sovremennyye aspekty i rolq na'evropeyskoto zakonodatelstvo, reglamentiruyushetogo usloviya i poryadok zaklyucheniya dogovorov potrebitel'skih kreditov*. Ekonomika Ukrainy v umovah globalizatsii i regionalizatsii: Zbirnik tez dopovidey: Mizhnarodnoy naukogo-praktichnoy Interent-konferentsii studentiv ta molodih vchenih – Ternopil' 4-5 kvitiya 2014 roku., s. 201-204. TNEU, 2014.

Table 1

Beaver ratio		
Beaver ratio = $\frac{\text{Net earnings}}{\text{Liabilities}}$		
Interpretation of the indicator		
Companies performing normally	5 years to bankruptcy	A year to bankruptcy
0.4 – 0.45	0.17	-0.15

E. Altman contributed enormously to corporate bankruptcy research by designing a number of models for predicting it. These models are based on the input of several ratios, each of them acquiring some relative weight according to how important the author considers that ratio to be. In a number of research works¹ dealing with corporate bankruptcy, Altman developed and presented his Z-models. The first model² only takes into account two factors, corporate liquidity and indebtedness. The two-factor model does not include an analysis of profitability (yield, solvency, and efficiency) and is therefore not commonly applied in practice.

Table 2

Altman's two-factor model
$Z = -0.3877 - 1.0736K1 + 0.0579K2$
K1 – Current ratio (Current assets/Current liabilities)
K2 – Financial dependency ratio (Debt/Total assets)
Interpretation of the indicator
Z>0 – Bankruptcy probability exceeds 50%
Z=0 – 50 % bankruptcy probability
Z<0 – Less than 50% bankruptcy probability

The five-factor model³ further elaborated the two-factor model for predicting corporate bankruptcy. It is also known as Altman's Z-Score and is employed to determine the so-called bankruptcy point. The formula is based on coefficients used to analyse the liquidity, yield, indebtedness, solvency, and efficiency of a company. The objective is to predict bankruptcy probability. This model has gained enormous popularity due to its comprehensive nature and has become a practically approved criterion for predicting the probability of a corporate bankruptcy.

Altman's model⁴ has gained recognition in practice as it makes it possible to assess the condition of a company by taking into account the combined effect of multiple factors (financial indicators). The only shortcoming of the presented model is the fact that it was designed and tested in the USA and therefore it

¹ Altman, E. Haldeman, R. Narayanan. P. ZETA analysis A new model to identify bankruptcy risk of corporations. Journal of Banking & Finance, Volume 1, Issue 1, June 1977, p 29–54.

² Altman, I. Corporate Financial Distress and Bankruptcy: A Complete Guide to Predicting & Avoiding Distress and Profiting from Bankruptcy. Wiley, 1993.

³ Adamov, V. Finansi na firmata. Biblioteka Obrazovanie i nauka, # 28, Svishtov. 2012, p. 503.

⁴ Gabrovski, R. Industrialen risk i menidzhmant. Akademichno Izdatelstvo Tsenov, Svishtov. 2009.

takes into consideration the characteristics of American companies and the conditions of the market in which they operate. Therefore, its application to the Bulgarian business environment may lead to distortion of results and to a failure to report the real situation of a company.

Table 3

Altman's five-factor model⁵
$Z = 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + 0.999X5$
X1 = Net working capital/Total assets
X2 = Earnings/Total assets
X3 = EBIT/Total assets
X4 = Leverage ratio
X5 = Sales revenue/Total assets
Interpretation of the indicator
Z>2.99 – The company is not threatened by bankruptcy
Z=1.88-2.99 – Grey zone
Z<1.88 – Bankruptcy is probable

The model designed by Fulmar⁶, the H-Score model, is another major contribution to assessing how probable a corporate failure is. Fulmar presented that model in his research work, "A Bankruptcy Classification Model for Small Firms" which was published in 1984. According to that model, a company is likely to be declared insolvent if the result of the model is less than zero. The model includes nine ratios to assess the financial situation of a company and each of these ratios is given a certain relative weight.

Table 4

Fulmar's H-factor model⁷
$H \text{ Factor} = 5.528H1 + 0.212H2 + 0.073H3 + 1.270H4 - 0.120H5 + 2.335H6 + 0.575H7 + 1.083H8 + 0.894H9 - 6.075$
H1 = Earnings/Total assets
H2 = Sales revenue/Total liabilities
H3 = EBIT/Equity
H4 = Sales revenue/Amount of debt
H5 = Debt/Total assets
H6 = Current liabilities/Total assets
H7 = Inventory/Total assets
H8 = Net working capital/Debt
H9 = EBIT/Interests paid on loans
Interpretation of the indicator
H>0 – The company is not threatened by bankruptcy
H<0 – Bankruptcy is probable

By developing further the underlying logic of these models, the English economist R. Lis⁸ suggested a four-factor model for assessing the bankruptcy probability for British companies. The model is based on combining the importance of the indexes of liquidity, profitability, and financial independence.

⁵ Adamov, V. Finansi na firmata. Biblioteka Obrazovanie i nauka, # 28, Svishtov. 2012, p. 502.

⁶ Fulmer, J. Moon, J. Gavin, T. and Erwin, J. H-score model and its use in foreseeing the risk of a small enterprises bankruptcy.

⁷ http://ycharts.com/glossary/terms/fulmer_h_score.

⁸ Sushko, V., Pavluyk, T. Klasifikatsiya modeley otsinki imovirnosti bankrutstva pidpriemstv. Ekonomikomatematichne modeluyvaniya protsesiv biznesu. 2014.

Table 5

Lis' model

$Z = 0.063X1 + 0.092X2 + 0.057X3 + 0.001X4$
X1 = Net working capital/ Total assets
X2 = EBIT/ Total assets
X3 = Earnings/Total assets
X4 = Equity/Debt
Interpretation of the indicator
Z<0.037 – High probability of a bankruptcy
Z>0.037 – Low probability of a bankruptcy

A reliable model ignoring the influence of the branch to which companies belong was designed by G. Springate.¹ The author tested his model on 40 companies and the results he obtained proved to predict company failures within a year with 92.5 per cent accuracy. The model was then tested on 50 companies in 1979 and on 24 companies in 1980, the accuracy of predictions being 88% and 83.3% respectively. Springate's model is based on combining the impact of four major indicators of company performance.

Table 6

Springate's model

$Z = 1.03X1 + 3.07X2 + 0.66X3 + 0.4X4$
X1 = Net working capital/ Total assets
X2 = EBIT/Total assets
X3 = Earnings/Current liabilities
X4 = Sales revenue/ Total assets
Interpretation of the indicator
Z<0.862 – High probability of a bankruptcy

Business development and innovations require that a model taking into account the impact of new technologies should be designed and applied. This means that the models developed so far need to be further elaborated and oriented to the new prospects in business development so as to predict corporate failures more precisely. This is the trend followed by R. Taffler² in his model for assessing corporate bankruptcy probability. Similar to Springate's model, the branches in which companies operate are irrelevant to the test.

Table 7

Taffler's model

$Z = 0.53X1 + 0.13X2 + 0.18X3 + 0.16X4$
X1 = EBIT/Current liabilities
X2 = Current assets/Total liabilities
X3 = Current liabilities/ Total assets
X4 = Sales revenue/ Total assets
Interpretation of the indicator
Z>0.3 – Low probability of a bankruptcy
Z<0.3 – High probability of a bankruptcy

The analysis of existing models for assessing the probability of corporate failures is based on employing

¹ Springate, Gordon L.V., "Predicting the Possibility of Failure in a Canadian Firm". Unpublished M.B.A. Research Project, Simon Fraser University, January 1978.

² Taffler R., Finding those companies in danger using Discriminant analysis and financial ratio data: a comparative based study city business school, City University Business School, London, Working paper №3.

publicly accessible data from the financial statements of Bulgarian companies. The results obtained from testing the models presented here are assessed by empirically applying them to SOFIX index companies. The selection of companies was based on their production profile, while financial enterprises and special investment purpose companies (SIPCs) have remained beyond the scope of our analysis due to the specific nature of their business. Financial results are assessed by using publicly accessible information provided by their financial statements, i.e. their balance sheets and income statements. The objective of empirically testing these models is not to undermine the prestige of those companies or to influence public opinion. The underlying objective of the author is to compare achieved results and to make a critical analysis of existing models and then present his views on their practical application on behalf of financial managers.

Table 8 presents the results about six Bulgarian SOFIX index companies which were obtained after applying the models for assessing corporate bankruptcy probability.

The analysis of obtained results is conducted as follows:

➤ In terms of *the Beaver ratio*, the companies included in the analysis are described as unstable, their bankruptcy impending within five years. The best results are those of M+S Hydraulic Plc (0.15-0.2), which are nevertheless much below the interval for a normally performing company (0.4-0.45). Due to the loss reported by Neochim Plc over the last three years, the values of the ratio are zero. This could be approached as a shortcoming of the presented model since a negative financial result does not necessarily indicate a bankruptcy probability for a company;

➤ The employment of *Altman's two-factor model*, due to the reverse interpretation of obtained results, determines the companies which are subject to analysis as stable entities with very little bankruptcy probability. The values registered for Albena Plc, Neochim Plc, Sopharma Plc, and Chimimport Plc range in the interval from -1 to -2. Therefore, according to the assessment model, they are stable; the bankruptcy probability for them is small; and their viability increases with an increase in these negative values. M+S Hydraulic Plc is the most viable entity again, its values ranging between -4 and -5 throughout the whole period. According to Altman's two-factor model, Monbat Plc is stable, too, the value of the ratio growing from -2 to -5.7 in the period between 2012 and 2014;

➤ The results obtained after applying *Altman's five-factor model* are relatively constant for each company, yet there are substantial differences when comparing them to other SOFIX index companies. Nevertheless, all companies are described as relatively stable with no short-term bankruptcy probability, except for Albena Plc (1) which is threatened by failure. Due to the specific nature of the calculations made for the index which gives the greatest importance to corporate profitability, quite logically (due to the high values of

Table 8

Results of applying the models for predicting corporate bankruptcy

<i>Models for predicting corporate bankruptcy</i>	2014	2013	2012	2011
NEOCHIM PLC				
Beaver's model	0.000	0.000	0.000	0.105
Altman's two-factor model	-1.078	-1.240	-1.513	-1.701
Altman's five-factor model	2.181	1.984	1.998	2.743
Fulmar's H-factor model	-1.293	-0.610	-0.306	4.654
Lis' model	-0.008	-0.002	0.003	0.023
Springate's model	0.480	0.563	0.633	1.414
Taffler's model	0.965	1.026	0.862	1.143
MONBAT PLC				
Beaver's model	0.600	0.109	0.049	0.043
Altman's two-factor model	-5.696	-2.968	-1.687	-1.926
Altman's five-factor model	2.158	2.296	1.639	1.670
Fulmar's H-factor model	3.055	4.457	-0.517	-0.020
Lis' model	0.037	0.037	0.014	0.016
Springate's model	1.483	1.526	0.753	0.802
Taffler's model	0.840	0.872	0.685	0.704
ALBENA PLC				
Beaver's model	0.018	0.029	0.034	0.018
Altman's two-factor model	-0.999	-0.947	-1.053	-0.837
Altman's five-factor model	0.462	0.490	0.538	0.480
Fulmar's H-factor model	-4.543	-4.000	-3.995	-4.692
Lis' model	0.004	0.006	0.007	0.003
Springate's model	0.289	0.414	0.545	0.280
Taffler's model	0.998	1.160	1.239	1.341
SOPHARMA PLC				
Beaver's model	0.019	0.037	0.047	0.055
Altman's two-factor model	-1.778	-1.792	-1.832	-1.845
Altman's five-factor model	1.964	1.967	1.972	2.024
Fulmar's H-factor model	-1.284	-1.284	-1.248	-0.938
Lis' model	0.013	0.016	0.018	0.020
Springate's model	0.682	0.739	0.778	0.837
Taffler's model	0.504	0.511	0.501	0.504
M+S HYDRAULIC PLC				
Beaver's model	0.148	0.144	0.156	0.208
Altman's two-factor model	-4.636	-4.668	-5.265	-3.922
Altman's five-factor model	2.501	2.499	2.533	3.002
Fulmar's H-factor model	37.459	28.754	21.115	16.191
Lis' model	0.055	0.055	0.057	0.062
Springate's model	2.101	2.063	2.293	2.448
Taffler's model	1.075	1.032	1.208	1.194
CHIMIMPORT PUBLIC HOLDING COMPANY				
Beaver's model	0.010	0.013	0.017	0.021
Altman's two-factor model	-1.675	-1.719	-1.780	-1.626
Altman's five-factor model	2.898	2.656	2.573	2.302
Fulmar's H-factor model	-4.407	-4.378	-4.346	-4.308
Lis' model	0.010	0.011	0.013	0.010
Springate's model	0.208	0.243	0.287	0.243
Taffler's model	0.201	0.205	0.210	0.218

Source: *The financial statements of the companies, infostock.bg, investor.bg, calculations by the author.*

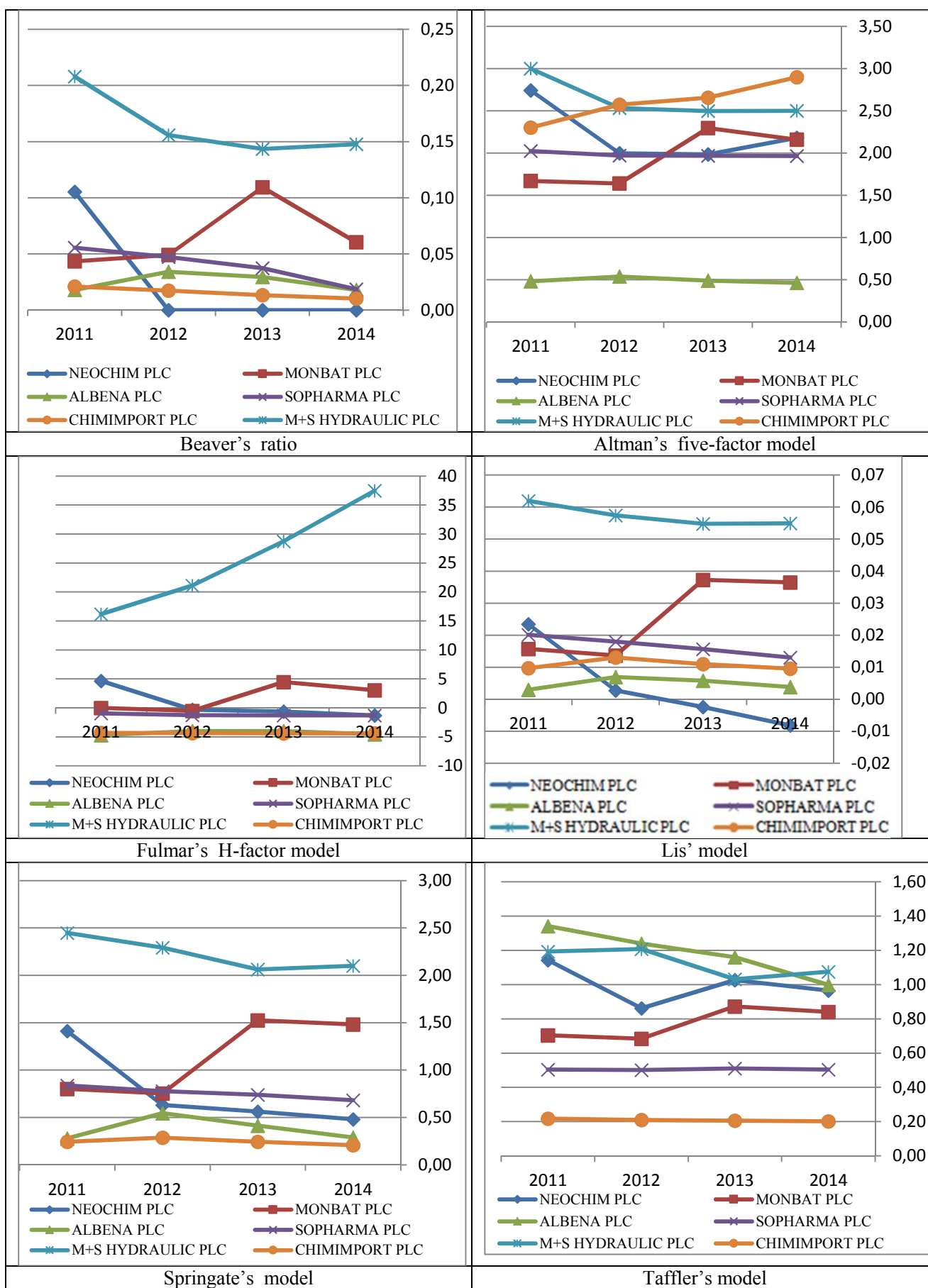


Fig. 1. Financial sustainability of Bulgarian public companies

the profits made), the companies which score best are Chimimport Plc and M+S Hydraulic Plc (2.3-2.9). They are followed by Sopharma Plc, Neochim Plc, and Monbat Plc with similar results (2-3). Therefore, according to the model most frequently employed to assess bankruptcy probability, Bulgarian public companies are not endangered by bankruptcy;

➤ *Fulmar's H-factor model* states that when the value of H is below zero, corporate bankruptcy is inevitable. Over the analysed period, the highest values of the ratio were reported by M+S Hydraulic Plc (maximum 37.46), the trend being towards a continuous growth. Monbat Plc also recorded positive values in the interval between 0 and 3. The rest of the companies, however, are in an unfavourable situation, the lowest values throughout the whole period being recorded for Chimimport Plc and Albena Plc (-5);

➤ According to *Lis' model*, the most stable company not endangered by bankruptcy is M+S Hydraulic Plc. Provided that values of $Z > 0.037$ indicate little bankruptcy probability, this is the only company which had values between 0.055 and 0.062. Over the last two years, Monbat Plc also recorded near-border values of 0.037. All the other companies had values indicating their potential failure. What is more, due to the loss which Neochim Plc recorded over the last three years, the values for the company are negative;

➤ The criteria underlying *Springate's model*, which assumes that for

➤ $Z < 0.862$ a company is in poor financial health and is undergoing substantial financial distress, indicate imminent financial failure for four of the companies included in the analysis. The lowest results are those of Chimimport Plc with its relatively constant values of 0.25. The company is followed by Albena Plc with values between 0.28 and 0.54, and Neochim Plc with its low values between 0.48 and 0.54 over the last three years. The top ranking company is M+S Hydraulic Plc with its constant maximum values between 2.06 and 2.45. Over the last two years included in the analysis, Monbat Plc also recorded high values of about 1.5;

➤ Bulgarian public companies scored best in terms of *Taffler's model*. Provided that the minimum value required for guaranteeing financial stability was above 0.3, the values for all companies were about 1, except for Sopharma Plc with its value of 0.5. According to Taffler's model, the only company endangered by a recent bankruptcy is Chimimport Plc with its constant value of 0.2 throughout the period from 2011 till 2014.

The different models for assessing bankruptcy probability we presented in this paper give different results when empirically applied to one and the same Bulgarian company. What is more, in some cases, the results obtained are quite contradictory. The company which scored best in the assessment of corporate financial sustainability according to all presented models is definitely M+S Hydraulic Plc. In terms of the models analysed here, all the other companies are relatively unstable, which poses a risk to their normal performance. On the one hand, the main reasons behind this

trend might be due to the fact that each model has been developed and tested in a specific economy (those of the USA, Great Britain, etc.), which leads to substantial deviations when they are applied to Bulgarian business environment. On the other hand, the ratios presented in this paper are financial methods which have proved their reliability for assessing the condition of a company, yet the importance of each ratio (i.e. its relative weight) is determined on the basis of financial reporting and the significance which the information provided by these ratios has in the country where each model was developed and applied. A major factor for obtaining such contradictory results might be that the branches in which analysed companies operate was ignored and therefore the same ratios have different values depending on the specific nature of the business of each company. It is therefore appropriate to employ these models as a further analytical tool for assessing corporate financial viability, provided that the necessary adjustment to the specific environmental and economic conditions is made in advance.

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Ангелов Г. Вибір для моделювання економічної доцільності компаній індекса SOFIX в посткризові роки

Фінансова криза поза сумнівом мала величезну негативну дію на реальний сектор в національному і глобальному масштабі, у вигляді числа припинень компаній, ділової реструктуризації, збування виробництва, і штабної надмірності. Тому життєво важливо оцінити фінансовий стійкий розвиток Болгарських компаній. Головна мета такої оцінки - ідентифікувати доступні можливості для ухвалення адекватних, зважених рішень, щоб підтримувати компанії в процесі пристосування до заміни ринкових вимог.

Мета цієї статті – передбачити головні фінансові труднощі, використовуючи моделі для оцінки вірогідності банкрутства компаній і запропонувати вибір рішень для подолання ці труднощі. Мета досягалася через емпіричне випробування існуючих моделей в термінах відкритих акціонерних товариств індексу SOFIX впродовж чотирьох років, з 2011 до 2014. Результати від цього випробування

потім використані як еталонний тест в процесі ухвалення рішення.

Ключові слова: корпоративне банкрутство, активи, ліквідність, прибутковість, виручка.

Ангелов Г. Выбор для моделирования экономической целесообразности компаний индекса SOFIX в посткризисные годы

Финансовый кризис несомненно имел огромное негативное воздействие на реальный сектор в национальном и глобальном масштабе, в виде числа прекращения компаний, деловой реструктуризации, убывания производства, и штабной избыточности. Поэтому жизненно важно оценить финансовое устойчивое развитие Болгарских компаний. Главная цель такой оценки - идентифицировать доступные возможности для принятия адекватных, взвешенных решений, чтобы поддерживать компании в процессе приспособления к замене рыночных требований.

Цель этой статьи – предсказать главные финансовые трудности, используя модели для оценки вероятностей банкротства компаний и предложить выбор решений для преодоления эти трудности. Цель достигалась через эмпирическое испытание существующих моделей в терминах открытых акционерных обществ индекса SOFIX в течение четырех лет, с 2011 до 2014. Результаты от этого испытания затем использованы как эталонный тест в процессе принятия решения.

Ключевые слова: корпоративное банкрутство, активы, ликвидность, прибыльность, выручка.

Angelov G. A choice for the design of financial viability of companies of SOFIX-index in post-crisis years

A financial crisis undoubtedly had the enormous negative operating on the real sector in a national and global scale. A grate number of stopping of companies, business restructuring, decrease of production, and staff surplus. Therefore it is vitally important to estimate financial steady development of the Bulgarian companies. Primary objective of such estimation - to identify accessible possibilities for the acceptance of the adequate, self-weighted decisions, to support companies in the process of adaptation to replacement of market requirements.

Aim of the article – to foresee main financial pressures, using models for the estimation of authenticity of bankruptcy of companies and to offer the choice of decisions for overcoming these difficulties. An aim was arrived at through the empiric test of existent models in terms of open corporations of index of SOFIX during four years, from 2011 to 2014. Results from this test then drawn on as a benchmark test in the process of decision-making.

Keywords: corporate bankruptcy, assets, liquidity, profitability, profit yield.

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THE QUALITY OF LENDING ACTIVITY IN BULGARIA

Introduction

The **object** of this study is the quality of credit exposures provided by the banking system of the Republic of Bulgaria. The **aim** of the study is to give a summarized situational assessment of the quality of bank lending in the period 2009-2014, as results are achieved through solving the following **tasks**:

1. The significance of lending for the banking system in the period 2009-2014 is pointed out by covering bank credit activity¹;
2. The total share of problematic credit exposures of the banking system in the period 2009-2014 is analyzed;
3. Profitability, provided by credit agreements concluded by companies in the banking sector for the period 2009-2014 is specified.

The thesis defended by the author is as follows: There is 'erosion' in the general credit portfolio of Bulgarian banking system in the period 2009-2014 due to a significant decrease in the amount of new credits in the private sector, the emergence of large amounts of problematic credit exposures, and contraction of bank revenues from lending activity.

I.

Based on the importance of credit activity to the development of banking systems worldwide, Bulgarian banks do not differ in regard to the susceptibility of their financial results to the share of their credit portfolios in the total amount of assets². Lending activity of Bulgarian banks constitutes a major share and considerably exceeds the share of investments in securities and other assets which do not generate revenue (see *Table 1*). The main reason for this is the lack of traditions in investment banking and the fact that the main activity of Bulgarian banks is lending.

The impact of the global financial crisis quite negatively affected the activity and behaviour of banks, but did not change the primary importance of credit activity. In the future lending to households and businesses is expected to continue to engage most of the banking resource.

Data in *Table 1* shows that most of the time since 2009³, the quota of total credit portfolio of the banking sector has recorded annual decline, as accumulation of this negative effect by the end of 2014 is equal to a reduction of credits, granted by banks, to the amount of 7.67%. The largest decline in credits was in 2012, worth BGN 3.44 m.

The rest of the assets, other than granted loans record a positive increase in their share in the balance sheet of the banking system, as the greatest is the positive change in securities to the amount of 4.69%. On a small scale is the increase in the share of other unprofitable assets for the five-year period – 1.87%. Despite the reduction in the share of loans in the asset of the Bulgarian banking system since 2009, the concluded credit agreements continue to be crucial to the operation of Bulgarian banks.

Data shown in *Table 1* is valuable, but is not comprehensive enough to draw definitive conclusions on the quality of loan receivables. To achieve the main objective of the study, changes in the amount of newly granted bank credits to non-financial enterprises and households⁴ must also be traced, as according to the author it is more rational to pay attention to the changes in the new business of banks, rather than to focus only on the residual balance sheet value of the authorized loans.

In this case, in order to gain a complete picture of the quality status of lending activity, 2007 and 2008 are added to the analysis, which helps to supplement and specify the results. The conclusions that can be drawn from the data shown in *Table 2* are the following:

- At the end of 2009, as compared to 2008, there was a negative change of BGN 8,626.0 m in the total amount of new bank credits to non-financial enterprises and households which is a greater decline in lending in relation to the negative growth in 2008 as compared to 2007 when the negative difference was BGN 598.4 m.

³ Only at the end of 2013 compared to the same period of 2012 banking system accounted for a slight increase of 0.51% in its general credit portfolio.

⁴ For more details see: **Pavlova, M.** Finansovi strategii i investitsionna aktivnost na domakinstvata v Bulgaria, Annual almanac. Scientific research of Ph.D. students at D. A. Tsenov Academy of Economics – Svishtov, issue 7, Tsenov Publishing House, 2014, pp. 217-234.

¹ It was specified through analysis of the volume of implemented new credit agreements with non-financial enterprises and households.

² For more details see: **Adamov, V.** Upravlenie na kapitalite v targovskata banka, Tsenov Publishing House, Svishtov, 2013, pp. 17-22.

Table 1

Share of balance sheet items in the total amount of bank assets for the period 2009-2014 (%) ¹							
Share of balance sheet items in the total amount of assets in the banking sector (%)	Years (as of 31 st December)						Cumulate change
	2009	2010	2011	2012	2013	2014	
Credits and receivables	81.53	79.24	78.61	75.17	75.68	73.86	-7.67
Securities*	6.68	8.05	8.59	10.11	10.68	11.37	+4.69
Other assets**	11.79	12.72	12.80	14.72	13.64	14.77	+2.98
Total	100	100	100	100	100	100	

Source: BNB, Financial and supervisory statements – data, Balance sheet and income statement of the banking system, by groups of banks as well as by author's calculations.

¹ http://bnb.bg/BankSupervision/BSCreditInstitution/BSCIFinansReports/BSCIFRBankingSystem/BS_201411_BG.

* The item includes: Financial assets held for trading, Financial assets determined according to fair value in profit or loss, Financial assets available for sale, Investments held to maturity, Derivatives - Hedge Accounting, Investments in associate companies, subsidiaries and joint ventures (accounted for using the equity method – including goodwill).

** The position includes: cash and cash balances with central banks, tangible and intangible assets, tax assets and non-current assets, and groups of assets for withdrawal, classified as held for sale.

Table 2

New business credits in the banking system (2007–2014)¹

*New credits without credits to financial institutions (million BGN) *	Years (as of 31.12.)							
	2007	2008	2009	2010	2011	2012	2013	2014
I. Non-financial institutions**	13,758.6	12,953.1	10,097.1	9,192.0	14,235.4	14,686.9	13,945.9	14,183.7
II. Households	8,786.5	8,993.5	3,223.5	3,389.2	3,811.0	3,826.0	4,133.7	4,170.7
Consumer	4,517.2	4,995.0	1,649.6	1,782.4	2,157.6	2,357.6	2,597.6	2,550.8
2. Mortgage	3,487.7	3,222.9	1,206.5	1,308.2	1,282.3	1,171.6	1,242.2	1,330.0
3. Other***	781.5	775.6	367.4	298.5	371.0	296.8	293.9	289.8
Total	22,545.2	21,946.7	13,320.7	12,581.3	18,046.4	18,513.0	18,079.7	18,354.5
Annual change		-598.4	-8,626.0	-739.3	5,465.1	466.5	-433.3	

Source: BNB, Interest rate statistics and author's calculations.

¹ http://stat.bnb.bg/bnb/dd/IR_NBO_LOAN_NEW.nsf/fsWebIndexBG.

* Interest rate statistics of BNB includes information for new business loans to local non-financial enterprises, households and NPISHs

* Includes credit agreements between banks and enterprises, producing goods, or companies, providing non-financial services

** Includes credits to households other than those shown in sections 1 and 2 in Table 2, including loans intended for training and treatment, and credits to non-profit institutions serving households (NPISHs)

These unfavorable results are a consequence of the contraction in demand and supply of authorized credits. Reported fluctuations at the end of December 2009 towards the same period of 2008 in different segments are as follows: authorized loans lent to non-financial enterprises are less than BGN 2,856.0 m; consumption bank credit financing is BGN 3,345.3m and less than BGN 2,016.4m is the amount of authorized loans against mortgage of immovable property;

➤ The negative for the banking sector trend of slowdown in credit growth continued in 2010. Data in *Table 2* shows that authorized bank loans to non-financial enterprises accounted for at the end of 2010 towards 2009, are BGN 905.0 m less, while total loan portfolio of households marks more new loans in 2010 than in 2009, exceeding the amount of BGN 165.6 m.

Although relatively low, in 2010 mortgage and consumer loans succeeded in anticipating their growth in 2009 with BGN 101.7 m and BGN 132.8 m respectively, as only other loans to households recorded a negative growth of BGN 68.9 m;

➤ In 2011, bank lending activity in the 'Non-financial enterprises' sector marked significant progress compared to the previous 2010. This was mainly due to the increase in new loan agreements between banks and companies outside the financial sector, which were BGN 5,043.3 m more than in 2010, and the slight, but greater growth in total loan portfolio of households as compared to 2010. Residential lending, heavily affected by the financial crisis, marked weaker activity in 2011 than in 2010;

➤ There was no significant change in the volume of new loan commitments entered into by enterprises and household sector in the period 2012-2014. The amount of new bank credits intended for the private sector over the three years was slightly larger than in 2011 (18,513.0 at the end of 2012, 18,079.7 in 2013, and 18,354.5 at the end of 2014).

For the first time at the end of 2013, there was a weaker lending activity on an annual basis for non-financial companies. Contracts for loans with enterprises recorded at the end of 2013 were BGN 741 m less than in 2012. However, there was animation in 2013 with households, as the total amount of consumer, residential and other loans was BGN 307.7 m more than in 2012.

After analyzing data generated by the statistics of the Bulgarian National Bank it may be concluded that since the beginning of 2009 the banking system in the country has experienced a significant slowdown in its lending activity. This is mainly due to declines in consumer and residential loans, which had a major role in the development of bank credit intermediation in Bulgaria prior to the financial crisis.

II

Credit risk is traditional and is the most common in the mix of risks which 'attack' the business of banks. Accurate assessment of the status of banking system's loan portfolio requires its risk profile¹ to be traced. Prevention against taking unjustified risks is part of an effective and well-defined credit policy of banks². In case that in the development of credit standards there are errors or negligence, borrowers who are not reliable are attracted, or economic situation destabilize creditworthiness of customers, the bank suffers losses and contraction of revenues from lending activity. Executive officers as well as employees in subdivisions of banks are responsible for problem loans within the bank.

After careful analysis of information provided in *Table 3*, which gives an idea of credit exposures of over a month overdue principal and interest servicing (those outside the regular), it can be argued that since 2009 statistics has been disturbing, especially in regard to claims on loans classified as **loss**³. With these credit exposures it is almost not likely to recover amounts owed by customers. If we compare the acceptable theoretical values of about 1% of loans within the group 'loss'⁴ with their actual amount, it can be concluded that the banking system as a whole does not manage well its loan portfolio.

Data in *Table 3* shows that the contraction of the banking system's loan portfolio was accompanied by a significant increase in loans overdue for over 6 months. Only in 2010 loans classified as 'loss' increased by 3.63%, and the total percentage increase in these exposures in the period 2009-2014 was 9.37%.

The problem related to the occurrence of a large amount of non-performing loans in Bulgarian banking sector was generated prior to 2009, but the high credit growth in 2005-2008 was able to absorb the formation of 'pollution' of loan portfolios. In risk management immediately prior to the financial crisis, banks relied

¹ For more details see: **Vatev, Zh., Bozhinov, B.** *Analiz na bankovata deynost*, Tsenov Publishing House, Svishtov, 2013, pp. 73-75

² For more details see: **Angelov, G.** *The Challenges of bank management in a globalizing world (Predizvikatstva pred bankoviya menidzhmant v globalizirashitiya se svyat)*, Проблемы развития внешнеэкономических связей и привлечения иностранных инвестиций: региональный аспект : Сборник научных трудов - Донецк, ДонНУ, 2014 г., pp. 6-8

³ According to Instruction № 9, active until the end of April 2014, on the assessment and classification of risk exposures of banks and formation of provisions for impairment losses.

⁴ **Vatev, Zh., Bozhinov, B.**, op. cit., p.76

Table 3

Percentage growth in gross loans and quota of classified loans of the banking sector (2009-2014)¹

Banking sector	Years (as of 31.12.)					
	2009	2010	2011	2012	2013	2014
Growth in gross loans (%)	5.12	2.77	4.62	0.58	5.23	-2.27
Overdue > 30 ≤ 90 (%)	6.05	7.95	7.22	6.37	5.49	4.79
Overdue > 90 ≤ 180 (%)	1.71	2.69	2.77	2.55	1.95	2.10
Overdue > 180 (%)	3.61	7.24	10.23	12.30	12.54	11.98

Source: BNB, Financial and supervisory reports – data, Information on credit quality, impairment and specific provisions for credit risk, and author's calculations.

¹ http://bnb.bg/BankSupervision/BSCreditInstitution/BSCIFinansReports/BSCIFRBankingSystem/BS_201411_BG.

more on favorable values of the regular / bad credits ratio (loans overdue more than 90 days) rather than focusing on high-risk profile of part of the business customers and individual borrowers.

Another aspect in assessing the quality of bank lending in Bulgaria is the analysis of revenue generated from loan portfolios of banks. The information provided in *Table 4* shows that profitability of loans in the private sector in the period 2009-2014 decreased continuously. Negative results were valid for both segments – non-financial enterprises and retail exposures (consumer and mortgage loans).

Although the annual reduction of bank revenue from interest made by credit contracts is relatively slow such is observed throughout the five-year period of this study. The most noticeable is the reduction of revenue from interest made by business lending – BGN 838 m, as revenue from interest made by mortgage and consumer lending have similar reduction for the period 2009–2014, respectively BGN 153 m and BGN 150 m. The negative growth in revenue from interest made by bank credit operations is a logical consequence of the limitation of new businesses and the occurrence of a large amount of problem credits after 2009.

Table 4

Revenue from interest on loans, authorized by Bulgarian banking sector (2009–2014)¹

Revenue from interest on loans in the banking sector (m BGN)	Years (as of 31.12.)						Cumulate change
	2009	2010	2011	2012	2013	2014	
I. Non-financial enterprises	2,752	2,713	2,688	2,550	2,468	1,914	-838
II. Retail exposures	1,915	1,945	1,865	1,754	1,674	1,612	-303
1. Mortgage loans	793	786	790	728	673	640	-153
2. Consumer credits	1,122	1,159	1,075	1,026	1,000	972	-150
Total revenue	4,667	4,658	4,553	4,304	4,142	3,526	-1,141

Source: BNB, data on banking system and groups of banks, Securities. Loans and advances. Borrowings of the banking system and by groups of banks, Loans and Advances (gross) by types of currencies, information on specific provisions for impairment losses and revenue from interest, and author's calculations.

¹ http://bnb.bg/BankSupervision/BSCreditInstitution/BSCIFinansReports/BSCIFRBankingSystem/BS_201412_BG.

The profile of Bulgarian banks can give a clear answer to the question what the sources of income are, which in turn determines the ability of banks to look for effective ways of restructuring and diversification of investments and the maximization of profit. With high informative significance in assessing the quality of bank lending are the indicators net (pure) interest margin and return on assets in the sector, given in *Table 5*.

Table 5. Having in mind the high share of loans to the private sector (excluding financial institutions), net interest margin can be formed as a ratio between the difference of revenue from interest generated by loan agreements with businesses and households, the cost of deposits of companies and individuals, and the total amount of the banking system's assets.

Table 5

Net interest margin and profitability of the banking system's assets (2009–2014)							
Banking sector	Years (as of 31.12.)						Cumulate change
	2009	2010	2011	2012	2013	2014	
Net interest margin (%)	4.16	3.94	3.65	2.99	2.75	2.74	-1.42
ROA (%)	1.1	0.84	0.76	0.69	0.68	0.88	-0.22

Source: BNB, Data on banking system and groups of banks, Balance sheet and income statement of the banking system, Securities, Loans and advances. Borrowed funds in the banking system and by groups of banks, Loans and Advances (gross) by types of currencies, information on specific provisions for impairment losses and revenue from interest, and author's calculations

Data in *Table 5* for the period 2009-2014 clearly shows the gradual but continuous decline in annual values of the banking sector's pure interest margin. This is a signal for a weaker opportunity for revenues from credit bank operations to cover their interest expenses on borrowed by companies and citizens deposits at a certain level of the banking system's assets. Provided that assets of the sector increase throughout the five-year period covered in the analysis, the inability of interest income from credit operations to absorb the paid by banks costs of their deposit taking activity is evidence of the emergence of a growing volume of poor credit exposures and of general reduction in the scale of lending.

Referring to the existing correlation between the contribution of lending to the final financial bank results (in this case measured by the ROA ratio) one can see that the main source of income for banks – lending, reduces its effectiveness. ROA decreased from 1.1% in 2009 to 0.88% at the end of 2014.

* * *

The survey results confirm the thesis, previously set by the author. There was a significant deterioration of indicators, forming the final assessment of the quality of banking sector's lending activity in the Republic of Bulgaria in the period 2009-2014. Data provided by the Bulgarian National Bank explicitly shows the gradual and sustained slowdown in bank lending in the country and the continued accumulation of poor quality credit exposures within the five-year period covered in this study.

The study of credit intermediation among business and household sectors shows a significant restriction of the possibilities for revenue realization,

whilst the volume of problem loans has been growing rapidly since 2009. Especially negative is the fact that during the period, risk exposures classified as 'loss' increase their share in relation to pass loans. Practically, for these loan commitments there are no real chances even for a partial recovery of the cost of a loan.

Substantial reduction in interest income on loans, especially those made by credit business financing, must naturally be uncomfortable for banks as non-financial enterprises are the engine of the economy and their investment needs for credit resources are the greatest.

The effectiveness of bank credit operations also decreases, which is mainly testified by the constant contraction of revenue from interest by the end of 2014 and the contraction of the net interest margin, as the annual decline in the latter compared to a prior period is at a faster pace.

In conclusion, one of the main challenges facing banks is to find ways to prevent high credit risk, arising primarily from impaired solvency of a great part of the population and enterprises in the country in recent years. A great problem turns out to be the more conservative attitude of businesses and households to credit financing as a tool for development and improvement of the general welfare of economic agents. The latter limits at a great extent the possibility of placing credit products and expanding the market share of commercial banks.

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Маринов И. Якість позикової діяльності у Болгарії

Фінансовий результат банків залежить від здатності їх кредитних портфелів, щоб робити досить доходу в ризику, який кредитні установи знаходять прийнятним. Для того, щоб досягти стабільності і бажаного зростання ринку, банки прагнуть підтримувати добротність зобов'язань по позиках, виданих їх клієнтах. В цьому відношенні, експертиза і оцінка придатності банківського надання є великим інформаційним значенням до структур управління і успішного розвитку комерційних банків.

Ключові слова: комерційні банки, акціонерний капітал власників, достатність основного капіталу, глобальна фінансова криза.

Маринов И. Качество заемной деятельности в Болгарии

Финансовый результат банков действительно зависит от способности их кредитных портфелей, чтобы производить достаточно дохода в риске, который кредитные учреждения находят приемлемым. Для того, чтобы достичь стабильности и желательного роста рынка, банки стремятся поддерживать добротность обязательств по ссудам, выданным их клиентам. В этом отношении, экспертиза и оценка пригодности банковского предоставления являются большим информационным значением к структурам управления и успешному развитию коммерческих банков.

Ключевые слова: коммерческие банки, акционерный капитал владельцев, достаточность основного капитала, глобальный финансовый кризис.

Marinov I. The Quality of Lending Activity in Bulgaria

Financial result of banks is strongly dependent on the ability of their credit portfolios to generate enough revenue at risk which credit institutions find acceptable. In order to achieve stability and desirable growth of market share, banks aim to maintain a good quality of loan commitments undertaken by their clients. In this regard, expert analysis and evaluation of the suitability of bank lending are of great information significance to the management structures and successful development of commercial banks.

Keywords: commercial banks, owners' equity, capital adequacy, global financial crisis

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TAX POLICY OF THE REPUBLIC OF BULGARIA FOR THE PERIOD 2007-2013

The state fiscal policy as a set of decisions, norms and regulations of the central government authorities in terms of distribution and redistribution of the national income pursues economic and social objectives whose fulfillment would be unattainable in the absence of financial resources ensuring their achievement. The accumulation of sufficient state's revenues in the state treasury and their targeted allocation by state expenditures determine the possibility of the state to influence the socio-economic processes emphasizing the importance of state revenues for the national economy. This significance is especially obvious in terms of economic recession and crisis when the insufficiency of the accumulated own revenues in the state treasury imposes a demand for loan resources or a reformative approach to tax policy in order to overcome the impact of negative effects.

It is known that the magnitude and directions of the ongoing national expenditures are highly dependent on the size and structure of budget revenues. In view of their importance for the existence of the state and the implementation of its functions, the subject of this research is the tax policy of the Republic of Bulgaria and its consolidated monetary fund for the period 2007-2013. The goal which the author sets is to reveal the importance of separate sources of revenue for the state treasury and to outline trends in their development by structural and dynamic analysis of the revenue part of the consolidated fiscal program (CFP) and the assessment of the ongoing state policy in times of economic crisis.

In accordance with the adopted by the Republic of Bulgaria methodology of accounting, the revenue side of the consolidated state budget is formed by tax and non-tax revenues and grants. The most significant component of this revenue part is the tax revenue – around 77% of all annual revenues.¹ In 2007, 80% of the disposable revenue of the Republic of Bulgaria was provided by grants and final payments (taxes); 15% was provided by property, state fees, fines, penalties and penalty interests; and 5% – in the form of aid. Given the fact that 2007 is the year of our accession to the EU, of great interest is the study of changes in financial flows of tax revenues as a result of changes in indirect taxation in connection with the fiscal harmoni-

zation with the EU. It is also interesting to trace the reduction in a tax burden of direct taxes for stimulating investments, the growth in a production and the increase in real income of households.

Changes in the tax policy of the Republic of Bulgaria in 2007 were:

- New taxation regime with the Value Added Tax (VAT) in a connection with the fiscal harmonization;
- An increase of excise rates and an expansion of the range of entities, subjects to excise duty;
- The tax rate reduction of the corporate income tax by 5%;
- An increase of taxable minimum in the combined tax progression and an increase of tax relief for children;
- The taxation of foreign individuals under the Personal Income Tax Act which were outside the scope of the Corporate Income Tax Act.

In the year of the accession of the Republic of Bulgaria to the EU, 19.3 billion BGN tax revenues were accumulated in the state treasury, taking into account the growth of 18% compared to 2006. The most important significance of this had reforms in the field of the taxation of personal income, corporate profits and excise duties. The decrease in the tax rate of the corporate income tax from 15% to 10%, in terms of high corporate economic activity, resulted in an increase in revenues from taxes on profits in the amount of 37% year-over-year². Revenues from the personal income tax increased by the same amount. The leading cause of this was the introduced at the beginning of the year changes, aimed at reducing the tax burden (by increasing the non-taxable minimum) and increasing real incomes of the population. Also incomes of foreign individuals were taxed under a new methodology – the Personal Income Tax Act with a withholding tax, not under the Corporate Income Tax Act. The increase of excise duties and the expansion of the range of taxable goods positively affected the growth of revenues from excise duties, which increased by 33% compared to 2006, forming 14% of total revenues in

² See. Angelov, G., The Access to Financing of Small and Medium Enterprises as the Main Accent in Strategy "Europe 2020", Financial Education and Scientific Researches in Bulgarian Universities - Strategy "Europe 2020": Scientific – Methodical Conference; Proceedings – Svishtov, 9-10.November 2012, Tsenov Academic Publishing House, p. 297-303.

¹ For more details see: Adamov, V. Theory of Finance, The "Education and Science" research library, Vol. 100, Tsenov Academic Publishing House, 2015, p. 86-103.

the Consolidated Fiscal Programme compared with 12% a year later¹. Changes in the field of indirect tax legislation, aimed at harmonization with the requirements of the EU, and the new Value Added Tax regime, in terms of a high volume of import into the country, were the basis of an increase in revenues from this tax form by 13% year-over-year. Positive development was also observed in revenues from social security contributions which also increased by 13% for the same period.

The presented positive changes in the structural components of tax revenues were not only confirmed in terms of customs duties and fees which registered 58 per cent reduction. The country membership in the EU was the reason for the abolition of customs duties among the member states of the Community and the

implementation of a common policy with regard to third countries, adversely affecting the “customs duties and fees” item of the Consolidated Fiscal Programme.

In 2008 – the year which marked the emergence of the global financial crisis – budget revenue indicators of the Republic of Bulgaria were positive: consolidated revenues compared to the previous year increased by 14%, tax revenues rose by 15 % and non-tax revenues increased by 13 %. The negative growth of 5% was observed only in regard of grants. The increase in tax revenues was determined by several circumstances such as: the replacement of progressive taxation with proportional one; a change in the burden of social security contributions between the employee and the employer from 35:65 to 40:60 and an increase in excise rates.

Table 1

Consolidated fiscal revenues of the Republic of Bulgaria (in millions BGN)

Consolidated Fiscal Programme	2006	2007	2008	2009	2010	2011	2012	2013
Tax revenues	16325.9	19 323.8	22 166.9	20 171.9	19 014.4	20 594.2	21 529.0	22 370.3
relative share	81%	80%	81%	81%	79%	81%	78%	77%
1.Taxes on profits	1 334.1	1 832.6	2 228.5	1 762.3	1 353.3	1 495.9	1 478.1	1 553.0
relative share	7%	8%	8%	7%	6%	6%	5%	5%
2.Income tax on individuals	1 324.6	1 808.7	1 971.5	2 051.1	2 031.2	2 179.6	2 297.7	2 348.5
relative share	7%	8%	7%	8%	8%	9%	8%	8%
3.Value Added Tax	5 823.8	6 598.5	7 485.3	6 432.5	6 267.1	6 611.7	7 151.9	7 366.5
relative share	29%	27%	27%	26%	26%	26%	26%	25%
4.Excise duties and road tax	2 498.0	3 315.4	4 051.6	3 844.5	3 567.9	3 860.1	4 047.8	4 055.8
relative share	12%	14%	15%	15%	15%	15%	15%	14%
5. Customs duties and fees	454.9	193.0	221.0	121.6	119.2	131.3	117.7	146.2
relative share	2.3%	0.8%	0.8%	0.5%	0.5%	0.5%	0.4%	0.5%
6.Social and health insurance contributions	4 309.1	4 890.3	5 392.6	5 273.1	4 969.8	5 509.6	5 596.0	6 060.2
relative share	22%	20%	20%	21%	21%	22%	20%	21%
7.Other taxes	581.5	685.3	815.4	685.7	704.9	783.0	813.4	816.9
relative share	2.9%	2.8%	3.0%	2.7%	2.9%	3.1%	3.0%	2.8%
8. Tax on the production of sugar	*	*	1.0	1.0	1.0	1.5	1.0	1.0
relative share	*	*	0.004%	0.004%	0.004%	0.006%	0.004%	0.004%
9. Tax on insurance premiums	*	*	0.0	0.0	0.0	21.6	25.4	22.3
relative share	*	*	*	*	*	0.09%	0.09%	0.08%
II. Non tax revenues	3 072.6	3 535.1	4 004.6	3 542.8	3 315.4	3 320.7	3 573.0	3 950.5
relative share	15%	15%	15%	14%	14%	13%	13%	14%
III. Grants	635.5	1 204.2	1 141.7	1 326.2	1 602.9	1 463.2	2 367.5	2 656.3
relative share	3%	5%	4%	5%	7%	6%	9%	9%
Total revenues and grants	20034.0	24063.0	27313.2	25040.9	23932.6	25378.1	27469.4	28977.2

Source: The Ministry of Finance/

¹ Dimitrova, T., Dimensions of Excise Policy in Bulgaria, Business Management, 24, № 4, Tsenov Academic Publishing House, 2014, p. 36-65.

One of the most important tax changes in 2008 concerned the taxation of individuals' income by the replacement of progressive taxation with proportional one with an equal tax rate of 10% for all incomes, regardless of their size, canceling the existing tax-free threshold and the right to use tax relief for children. The reform aimed an increase in the disposable monetary fund of employees who received higher income, respectively an increase in household savings¹. The new mechanism of taxation also had a positive effect on the state treasury: revenues from the taxation of individuals' income in 2008 marked 9% growth compared with 2007 and the cause of this was canceling the existing tax-free threshold.

The positive effects of the reduction of the rate of the corporative income tax were retained in 2008 with a growth of 22 %. Revenues from taxation of excise goods increased by the same percent as a result of increased consumption and tax rates. The reduced social security burden for employers (from 65:35 to 60:40 at the expense of an employee) has stimulated higher investment activity and labour demand, as a result the revenues of social contributions reached 5.4 billion BGN compared to 4.9 billion BGN in 2007. A positive change also had revenues from customs duties and fees, increasing by 14% to reach 221 million BGN in 2008.

Referring to the historical experience, the management of the state finances in times of economic crisis is a task of significant difficulty, given the delayed or negative speed of economic development and a limitation of the revenues from the ongoing distribution and redistribution processes. In other words, the socio-economic situation affects the revenue part of the state budget, and the Republic of Bulgaria is not an exception in this regard. Although revenues and grants under the consolidated fiscal program of the Republic of Bulgaria for the period 2007-2013 increased by 20.4% (4.9 billion BGN), the dynamic analysis was an evidence of irregular changes of an annual basis, the leading cause of which was the negative effect of the worldwide spread economic crisis. Its reflections were observed especially **in 2009 and 2010** when the growth of total revenues during the last two years (2007 and 2008) was followed by a two years decrease – 8% in 2009 and 4% in 2010 compared to the previous year. The structural analysis of the revenue part of the consolidated fiscal program has reflected the cyclical changes and has corresponded to deteriorating economic situation as a result of which there have been some changes in the financial inflows and outflows of the state. The limited business activity and deteriorating financial results adversely affected revenues from

taxes on profits – while in 2008 their nominal value was 2.23 billion BGN, a year later they decreased by 21% (444.2 million BGN) to 1.76 billion BGN. The negative tendency continued in 2009 when the change in an annual basis was in larger size – 23% compared to the previous year.

The interdependence among sectors in the national economy (the state, companies in the real sector, financial intermediaries and households) explains the changes in: the labour payment; the disposable income of households and the limitation of their consumption; the demand of loan resources and the effects on revenues from the taxes on profits of individuals, the VAT tax, the excise duties, social and insurance contributions². The analysis of the above mentioned four tax revenues (which formed 70% of revenues in the Consolidated Fiscal Programme) determined that in the period 2009-2010 when the Bulgarian Economy was suffering from the global economic crisis only the revenues from the taxes on profits of individuals did not record significant reductions and even in 2009 they increased by 4% compared to 2008. This, at first glance, is contrary to the economic logic and can be explained by the reform of the tax system of the Republic of Bulgaria from 2008 in the field of the taxation of the individuals' income which has replaced the progressive tax scale with the proportional 10 percent tax. The lack of opportunity for „more slightly” taxation of lower incomes, as a result of the abolition of non-taxable income and other levels of combined tax progression, adversely has influenced on the disposable incomes of the households, but has influenced positively on the fisc. The evidence of this was the revenues from the corresponding tax amounting to 2.05 billion BGN and 2.03 billion in 2009 and 2010. The most important source of revenues for the state treasury – the Value Added Tax decreased to 1.05 billion BGN (or by 15%) in 2009 compared to 2008, followed by a new 3% reduction in 2010. Another representative of the indirect taxation and the second most important source of the financial resources for the state – excise duties also decreased respectively 5% and 7% in 2009 and 2010. Social and health insurance contributions decreased for this period totally by 423 million BGN and on an annual basis the negative growth was 2% in 2009 and 6% in 2010. The other components of the revenue side of the consolidated state budget (customs

¹ See. Adamov, V., Dimitrova, T. at al. Techniques of Taxation, 7. Revised and expanded edition. Tsenov Academic Publishing House, 2013, The “Education and Science” research library, Book 60., p. 13-33.

² See. Adamov, V. Theory of Finance, The “Education and Science” research library“, Book 100, Tsenov Academic Publishing House, 2015, p. 17-37. and Marinov, I., Factor Impacts on Consumer Lending in Bulgaria // Financial Education and Scientific Researches in Bulgarian Universities - Strategy “Europe 2020”: Scientific – methodical conference; Proceedings – Svishtov, 9-10.November 2012, Tsenov Academic Publishing House, p. 317-324.

An annual change in revenues in the Consolidated Fiscal Programme of the Republic of Bulgaria

Consolidated Fiscal Programme	2007	2008	2009	2010	2011	2012	2013
I. Total revenues	20.1%	13.5%	-8.3%	-4.4%	6.0%	8.2%	5.5%
1. Tax revenues	18.4%	14.7%	-9.0%	-5.7%	8.3%	4.5%	3.9%
2. Taxes on profits	37.4%	21.6%	-20.9%	-23.2%	10.5%	-1.2%	5.1%
3. Income tax on individuals	36.5%	9.0%	4.0%	-1.0%	7.3%	5.4%	2.2%
4. Value Added Tax	13.3%	13.4%	-14.1%	-2.6%	5.5%	8.2%	3.0%
5. Excise duties and road tax	32.7%	22.2%	-5.1%	-7.2%	8.2%	4.9%	0.2%
6. Customs duties and fees	-57.6%	14.5%	-45.0%	-2.0%	10.2%	-10.4%	24.2%
7. Social and health insurance contributions	13.5%	10.3%	-2.2%	-5.8%	10.9%	1.6%	8.3%
8. Other taxes	17.9%	19.0%	-15.9%	2.8%	11.1%	3.9%	0.4%
9. Tax on the production of sugar	*	*	1.6%	0.0%	0.2%	-28.3%	0.0%
10. Tax on insurance premiums	*	*	*	*	*	17.9%	-12.2%
II. Non tax revenues	15.1%	13.3%	-11.5%	-6.4%	0.2%	7.6%	10.6%
III. Grants	89.5%	-5.2%	16.2%	20.9%	-8.7%	61.8%	12.2%

Source: The Ministry of Finance/

duties and taxes, a tax on a sugar production, a tax on insurance premiums) did not have a significant role on the annual rate of change in total revenues given the amount of the incoming financial resources.

The negative trend of lower own revenues in the state treasury was overcome in 2011 with the adopted new approaches for the management of state finances in terms of delayed economic growth. Total revenues and grants received in the consolidated budget in 2011 amounted to 25.38 billion BGN which was 33.7% of the Gross Domestic Product (GDP) of the country. Compared with the previous year the growth was 6 percent and the tax revenues were with the most significant contribution. A positive change was observed for all structure components of tax revenues and especially in the tax on sugar production (39%), income tax on individuals (11%) and social and health insurance contributions (11%). It should be pointed that conclusions regarding the significance of separate tax forms in the revenue side of the consolidated fiscal programme would not be objective without taking into account their nominal values. In this sense, the role of the indicated growth of 39% in the tax on sugar production, for instance, due to the nominal increase from 1 million BGN in 2010 to 1.5 million BGN in 2011 was less significant for the reported 6% growth of total revenues compared with the Value Added Tax whose annual growth rate was 5% (344.6 million BGN).

In 2011 the negative trend of growth compared to the previous year had only revenues from grants (9%). In 2012 such negative results were observed for: taxes on profits (1%), customs duties and fees (10%) and the tax on the production of sugar (28%). It should be noted that, given the limited financial incomes from them, the effect on total revenues was equal to the 9% decrease in grants in 2011. With regard to the other tax revenues, changes have been in a positive direction and

it is necessary to highlight the following important points:

- In 2012 compared to the previous year, there were 5% more revenues from excise duties, mainly due to an increased part of taxed tobacco products and higher revenues from excise duties on fuel;

- The effect of slowdown in the economic activity could be seen mainly in revenues from income tax on individuals which increased by 5% compared with the 7% growth in 2011;

- Total revenues from taxes on profits during the observed year decreased by 1% as a result of the inability of the increased corporate tax revenues to compensate the decline in contributions from tax on dividends, liquidation shares and incomes of domestic and foreign legal entities¹.

In 2013, the ongoing process of gradual recovery of the Bulgarian economy had a positive effect on the development of budget revenues which for the third consecutive year after 2011 recorded an annual growth, in this case 5%. Indirect taxes (in particular the Value Added Tax) and social and health insurance contributions had an essential role. They increased by respectively 3% and 8% annually and formed 46% of total revenues in budget. A growth was observed in taxes on a profit – 5% compared to 2012 and unchanged were revenues from excise duties, the tax on sugar production and the item “other taxes”.

It is known that the presentation of budget indicators in absolute amounts or their comparison with the previous year measured values has its informative significance. The current analysis would be incomplete without presenting budget revenues in relative values

¹ For more details see. The Economy of Bulgaria, annual report of the Ministry of Finance, department “Economic and Financial Policy”, 2007 and 2012.

compared to the leading indicator of economic activity in the country, namely the Gross Domestic Product. The data in Table 3 are indicative for the correlation between the coefficient “Revenues on the consolidated state budget (CSD)/GDP” and the cyclical development of the national economy. At the beginning of the studied period (2007) when the economic crisis was still far from the borders of Europe, total revenues of the Consolidated Fiscal Programme amounted to 40% of the GDP of the Republic of Bulgaria. Here we should note that this was the year with the highest recorded GDP growth on a chain basis of 15%. From 2008 to 2012 the indicator “Revenues on the consolidated state budget (CSD)/GDP” annually declined respectively with 2.8% and 2.7% in 2009 and 2010. The reason for the situation in 2009 was the simultane-

ous decrease of the GDP by 1.4% compared to the 8 per cent drop in revenues of the Consolidated Fiscal Programme. The economic growth in 2010, measured by 3.2 per cent increase in the GDP, failed to compensate the decrease in tax revenues, non-tax forms and grants, and as a result the relative value of government revenues compared to the GDP (coefficient “Revenues on the consolidated state budget/GDP”) decreased by 2.7%. The proven negative trend was overcome in 2012 when the studied indicator increased by 1.5 per cent in 2011, reflecting the started in the Bulgarian Economy processes of gradual recovery from the recession. The positive change in the coefficient continued in 2013 when the revenues and grants in the Consolidated Fiscal Programme were 37.1% of the GDP in Bulgaria, compared with 35.2% in 2012.

Table 3

The dynamic of coefficient Revenues on the Consolidated State budget / the Gross Domestic Product of the Republic of Bulgaria

Years:	2006	2007	2008	2009	2010	2011	2012	2013
GDP (million BGN)	51 783	60 185	69 295	68 322	70 511	75 308	78 089	78 115
Revenues on the Consolidated State Budget (million BGN)	20 034	24 063	27 313	25 040	23 932	25 378	27 469	28 977
Coefficient Revenues on the Consolidated State budget / the GDP	40.8%	40.0%	39.4%	36.7%	33.9%	33.7%	35.2%	37.1%

Source: The Ministry of Finance/

The outlined trends in the structure and dynamics of consolidated state revenues for the period 2007-2013 responded to the socio-economic situation in the Republic of Bulgaria and were an evidence of the dependence of the revenue system of the country from the cyclical development of the national economy. In this regard, positive assessments have the country's accession to the EU and conducted under the researched period fiscal harmonization and tax reforms. As a result the cumulative growth of financial revenues on the Consolidated Fiscal Programme for the researched period was 41%. The structural analysis determines the leading tax forms, placed at the base of the expenditure system in the Republic of Bulgaria, which are: indirect taxes in the form of value added tax and excise duties, as well as the tax on individual's income and social and insurance contributions. The adequate distribution of these (and all the other) state financial revenues ensures the impact on all aspects of the social reproduction process and the achievement of the state economic and social aims.

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Павлова М. Податкова політика Республіки Болгарія в 2007-2013 рр.

Бюджетна політика, що проводиться державою, має два виміри - урядові доходи і їх цілеспрямоване розміщення відповідно до соціально-економічної необхідності (урядові витрати) - лежить в основі розвитку народного господарства. Накопичення доходів достатніх державі для того, щоб гарантувати її витрати - завдання першорядної ваги, особливо в термінах макроекономічної нестійкості, коли урядове втручання істотно для своєчасного подолання економічного спаду або кризи. В цьому відношенні, аналіз митної сторони консолідованої фінансової програми і оцінки тривалої державної політики Республіки Болгарія за час економічної кризи - поточні теми з науковим і прикладним інтересом.

Ключові слова: податок, бюджетна політика, держава, розвиток.

Павлова М. Налоговая политика Республики Болгария в 2007-2013 гг.

Бюджетная политика, проводимая государством, в нем два измерения - правительственные доходы и их целенаправленное размещение в соответствии с социально-экономической необходимостью (правительственные расходы) - лежит в основе развития народного хозяйства. Накопление доходов достаточных государству для того, чтобы гарантировать его расходы - задача первостепенной важности, особенно в терминах макроекономиче-

ской неустойчивости, когда правительственное вмешательство существенно для своевременного преодоления экономического спада или кризиса. В этом отношении, анализ таможенной стороны консолидированной финансовой программы и оценки продолжающейся государственной политики Республики Болгария за время экономического кризиса - текущие темы с научным и прикладным интересом.

Ключевые слова: налог, бюджетная политика, государство, развитие.

Pavlova M. Tax Policy of the republic of Bulgaria for the Period 2007-2013

The fiscal policy, conducted by the state, in its two dimensions – government revenues and their targeted allocation in accordance with the socio-economic needs (government expenditures) – is the basis of the national economy development. The accumulation of sufficient state's revenues in order to ensure its expenditures is a task of primary importance, especially in terms of macroeconomic instability, when the government intervention is essential for the timely overcoming of the economic recession or crisis. In this regard, the analysis of the revenue side of the consolidated fiscal program and the evaluation of ongoing state policy of the Republic of Bulgaria in times of economic crisis are current topics with scientific and applied interest. In the study, the importance of the separate tax forms for the state treasury is revealed, tendencies and tax forms' development through structural and dynamic analysis of the revenue part of the consolidated fiscal program are outlined and the state tax policy for the period 2007-2013 is estimated.

Keywords: tax, fiscal policy, state, development.

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DIVIDEND PUZZLE ON BULGARIAN STOCK EXCHANGE – OPPORTUNITY FOR AN ABNORMAL RISK-ADJUSTED RETURNS

1. Introduction

The dividend policy is one of the most contentious and controversial areas of corporate finances.² In parallel with the creation of fundamental theoretical framework on the problem in the 60s of the last century with the researches of Gordon (1959), Lintner (1956, 1962), Miller и Modigliani (1961) the debate "why the companies pay cash dividends and why investors have strong preferences to them" also started. Black (1976) analysed the situation and defined it as "dividend puzzle" because he failed to find convincing and rational arguments for deviations in theoretical assumptions. His conclusion remains valid to a large extent today: "The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don't fit together" [1976, p.5].

The essence of the puzzle is related to the fact that in conditions of perfect markets capital gain and dividend should be considered as perfect substitutes for each other. The reason of this is that after the distribution of dividends the price of a share should be reduced by the amount of the dividend. Thus, investors should be indifferent to the dividend policy. When investors need money they can create dividends or so called "homemade cash dividend" by selling part of the shares held. On this basis, it is surprising the strict dividend policy followed by most companies (Brav et al., 2005), and the attachment of investors to cash dividends (Loomis, 1968), provided that the dividend policy neither creates nor destroys shareholders' wealth.

The dividend puzzle is complicated additionally if taxes and transaction costs are added to the analysis. In many countries, including the Republic of Bulgaria, dividend yields are taxed more heavily than capital gains. Also, taxes on realised capital gains are due only when the whole or part of the position is closed. In this situation, the investors may prefer companies which do not distribute their gains or have low dividend yield. This should encourage companies, which cannot invest in projects with more than required yield from shareholders, to buy their own shares instead of paying dividends. However, transaction costs on the implementation of the sale/purchase of shares on the stock ex-

change should be taken into account. In general, they are significantly lower than the difference in the taxation of investors and they are a cheaper option for companies compared to expenses related to the dividend payment. It should not be neglected the fact that in the need of capital, repurchased shares may be sold on the market. Such a procedure is associated with significantly lower costs of issuing new securities (shares or debt).

This article focuses on the impact of the dividend puzzle on the yield of shares and possibilities for realising of abnormal returns (high-dividend-yield). Among the first authors who study the importance of dividend yield and share yield are Rosenberg and Marathe (1979), and Litzenberger and Ramaswamy (1979, 1982). The results of their studies have shown that high-dividend-yield stocks realise higher return than low-dividend-yield stocks. Later Fama and French (1988) and Hodrick, (1992) have found that dividend yield is a good predictor of subsequent return. On this basis, it is not surprising the investment interest in strategies based on selection of shares which have a high dividend yield.

2. Approaches for explanation of dividend puzzle and the performance of dividend yield strategies

In more general terms, the availability of dividend puzzle and the impact of dividend yield on the yield of shares should be classified as a breach of market efficiency hypothesis (Fama, 1970). This anomaly may be related to other empirically established regularities such as value (P/E, P/B ratio) effect (Basu, 1977; Fama and French, 1992), small firm effect (Banz, 1981) and market overreaction (De Bondt and Thaler, 1985; Jegadeesh and Titman 1993). The combination of high dividend yield, high P/E (P/B) ratio, lower risk than 'the market' and higher earnings sustainability, suggests good results from implication of dividend yield strategies (Clemens, 2012). However, it also suggests the need of parallel (or at least indirect) linking of those anomalies in terms of theoretical interpretation of dividend puzzle.

The leading rational approaches for the explanation of dividend puzzle are related to agency costs of firm's holding excess cash (Borges, 2009) and informational considerations (Bhattacharya, 1979 and Hakansson, 1982).

As a whole, the agency costs reflect conflicts of interest between managers and shareholders in firms, arising from the division between ownership and control of most public companies. Managers are appointed in firms in order to protect the interests of shareholders.

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² For more details on the issue of dividend policy see. Adamov, V. Firm Finances. Abagar, 2006, p. 363-388. Interrelationship between dividend policy and capital structure of a firm in Bulgarian condition is studied in Adamov, V., Zahariev, A. Corporate Capital Management, Abagar Publishing, 2012.

ers, but in practice these managers are hard to be controlled (especially by minority shareholders) due to the lack of complete information about what is happening in the company. As for the dividend policy, the main problem is related to management of cash reserves. If companies accumulate large cash reserves, it is possible for managers to take (consciously or unconsciously) actions which are not of shareholders' interest. The most obvious problem is connected with maintaining of high levels of cash and cash equivalents which generally have a much lower yield than the cost of capital of the firm. Unfortunately, in the search for a solution to this problem, managers often tend to take quite expensive for shareholders ventures such as buying luxury goods, supporting inefficient units (subsidiaries), investment in projects with negative NPV or currently observed takeovers of companies which consequently are overstated. In this regard, it is logical that investors want companies to pay cash dividends up to the amount of capital which is not used for initiatives that increase shareholders' wealth.

The second rational approach is focused on the importance of dividend announcement as a signal for future development of the company. The increase in dividends should be related to improved prospects for future gains but it can also mean a lack of investment opportunities for the company. Maintaining regular dividends should mean that the company is under control, while in taking a decision for dividend reduction it is expected a decline in future cash flows. In fact, there is a lack of consensus among researches about the signals of changes in dividends and convincing evidences of long-term relationship between them and the levels of future yields. But it is also a fact that the announcements of changes in the amount of dividends reflect on share prices in the proportional relationship (Aharony and Swary, 1980).

These approaches are unable to give an explanation for the so called "clientele effect" and they fail to explain why investors are willing to pay a premium for companies with higher dividend yield. Also these approaches do not affect the essence of the other associated anomalies. In this connection, the approaches dealing with dividend puzzle and falling within the scope of behavioural finance¹ are of interest for the study. These approaches were developed by Shefrin and Statman in 1984 and took into account the influence of the two theories of choice behaviour – the theory of self-control and prospect theory.

¹ Behavioural finance integrates knowledge about the specifics of human behaviour (psychology and sociology) in financial matters and models in order to explain the investors' actual behaviour and capital markets. For more details see. Pavlov, Ts. Critical Analysis of the Development of Behavioural Finance. Annual Almanac. Scientific Researches of Ph.D. Students in D. A. Tsenov Academy of Economics – Svishtov. №8 Tsenov Publishing House, 2014, p. 427-443.

The leading motive in both theories of choice behaviour is that investors do not regard capital gains and dividends as perfect substitutes for each other. According to the theory of self-control (Thaler and Shefrin, 1981, 1983) the deviations from the investors' rational behaviour are due to their inability to delay gratification because of a lack of self-control. The reflection of this dependence is observed in various spheres of life from the inability to stop unhealthy habits to simultaneously maintenance of children's deposits and taking consumer credits at negative interest spread. Particular to the analysed problem, investors prefer dividends because dividends provide a balance between the current and future consumption without the necessity of self-control to maintain this balance. If it is necessary to sell shares for current consumption (homemade cash dividend), willingness and self-control will be needed in order to not normally be consumed investment portfolio, thereby to distort investment objectives.

The application of the prospect theory (Kahneman and Tversky, 1979) to the analysis of dividend puzzle significantly contributes to clarify its essence. The theory examines the regularities in the investors' behaviour when making decisions in an uncertain environment. These regularities have an impact on the discussed problem in the following directions:

1) investors evaluate the usefulness in terms of potential gains and losses, making the dividend very attractive and yielding high prospect utility due to their distribution;

2) losses are assessed much more heavier than gains which is consistent with the empirical data showing that reductions in dividends have a greater impact on market assessments than their increase;

3) investors assess gains and losses from a given reference point, which changes over time, together with changes in dividends.

Thus in simultaneously payment of extraordinary and regular dividend, in the next period at the return to the value of regular dividend, investors regard this dividend as a loss. According to the prospect theory there is an additional difference between dividends and capital gains related to the need in the homemade cash dividend investors to take independent financial decisions for which results they feel personally responsibility. For example, if an investor sold shares to buy a commodity and then the share price increased highly, the investor would feel regret for the decision. But if in the same situation the company paid a cash dividend (with the same value), the representative investor would not feel such discomfort.

By modelling the specific characteristics of human behaviour and especially by the prospect theory, most market anomalies (Barberis et al., 1998) and puzzles (Barberis et al., 2001) are resolved. These anomalies and puzzles together with those examined here mean that the reason for their existence is mostly psychological. On this basis it is not surprising the con-

stancy in results of dividend yield strategies and hence their popularity in practice.

3. Research methodology

Testing of the Bulgarian capital market for the presence of dividend puzzle will be done by examining the possibility of realisation of excess yield based on dividend yield strategies. To achieve this goal, active and passive portfolio strategies will be used.

The active strategy is realised in three steps:

(1) based on the last price on the year and allocated annual dividend of shares listed on BSE-Sofia, ten companies with the highest dividend yield are selected;

(2) an investment portfolio with equal weights (an equal amount is invested in each share) is drawn up with these ten issues;

(3) the procedure is repeated at the beginning of each year.

As for the other strategy there is no rebalancing and the portfolio is composed at the beginning of the sample of companies which regularly pay dividends during the period of the study¹. Again, the assets included in the portfolio are with equal weights.

The yield of both portfolios is calculated on an annual basis by equation (1):

$$R_{pt} = \sum_{i=1}^N \frac{P_{it} - P_{it-1} + D_{it} + I_{it} + S_{it}}{P_{it-1}}, \quad (1)$$

where

R_p is the return on the portfolio at year t ; P_{it} – closing price of share i at year t ; P_{it-1} – closing price of share i at year $t-1$; D_{it} – distributed dividend of the security i at year t ; I_{it} – realised interest rate of reinvestment of dividends received (because investors can reinvest at different percentages, I_{it} is set to zero); S_{it} – the value of shares received from the increase of capital with reserves (stock split).

Establishing whether any realised higher return from dividend portfolios is not due to the rational compensation for risk is a critical moment in the study. In this respect it is necessary to derive risk-adjusted returns. This will be done through the widely used model of Jensen (1968), in which risk-adjusted abnormal returns are available when $a > 0$:

$$R_{pt} - R_f = a + \beta_p (R_{mt} - R_f) + \varepsilon_{pt}, \quad (2)$$

where:

R_p is the annual yield of the researched portfolio; R_f – the risk-free rate; a – the abnormal risk-adjusted return; β_p – the estimated systematic risk of the portfolio; R_{mt} – annual market return; random deviation at time t .

4. Data Sources

For the realisation of the research, the market return must be put. The index SOFIX is seen as the personification of the market among the Bulgarian investment community. The index's calculation started at 2000 which determined the temporal sampling interval from 2000 to 2014. The values of SOFIX and the prices of the individual shares are extracted from the investor.bg and money.bg database (at split of the shares from an issue). The information about distributed dividends is received from money.bg and bse-sofia.bg.

The value of distributed dividends to SOFIX are derived on the basis of the structure of the index over the years and weighing the distributed dividends, according to the methodology for calculating the index – according to the free-float of the individual issues and the corresponding weight factor. Then the resulted values are converted into points for comparability in the calculation of market returns.

For risk-free yield (R_f) it is used a cumulative annual return of the Bulgarian quarterly government securities. The data source is minfin.bg.

In the selection of emissions, the preferred shares and companies that have paid less than two dividends during the period of the study are excluded.

Shares corresponding to the established criteria for inclusion in the passive portfolio are ten: 6AB (BSE code), 5ALB, 4F6, 5SR, 5MH, 57B, 52E, 55B (up to 2012 incl.), 4HE, 5MA.

5. Empirical Results

The obtained results are summarized in Table 1. The active and passive investment strategies, based on dividend yield, have been proven as extremely successful in the Bulgarian capital market. The regression equations and their parameters (α и β) are statistically significant at confidence interval of 95%. Positive values of α in both portfolios indicate the possibility of realisation of an impressive abnormal risk-adjusted return which exceeds 30%.

The portfolios have low systematic risk compared to SOFIX although they include a smaller number of companies, i.e. they have a weaker diversification. An important feature of portfolios is that they have fewer years with a negative yield, and also have twice higher ratio return / risk than SOFIX.

The difference between the average geometric annual yield of active and passive portfolios is only 3.59%. Such a premium cannot be regarded as com-

¹ Due to the specifics of the Bulgarian capital market, under regular payments of dividend it must be considered of the total excerpt (14 years), in maximum two inconsecutive years there can be gaps in the distribution of dividends.

pensation for the management of such an actively managed portfolio because this premium is commensurate with the potential transaction costs and bid-ask spreads. Of course, at a passive management there is a higher risk of ownership of companies in financial distress. Therefore it is necessary for two consecutive years of undistributed dividends, the position to be removed from the portfolio and possibly to be replaced by another.

Table 1

Risk and return characteristics of the active and passive dividend portfolio for the period 2001- 2014

Year \ Portfolio	SOFIX	Active portfolio	Passive portfolio
2001	14.06%	41.8%	25.4%
2002	69.12%	47.8%	56.9%
2003	154.16%	76.2%	86.9%
2004	39.39%	215.2%	164.0%
2005	33.87%	71.7%	72.4%
2006	50.15%	70.6%	77.0%
2007	45.72%	153.5%	167.3%
2008	-79.35%	-67.9%	-72.4%
2009	19.39%	39.4%	28.5%
2010	-14.35%	28.7%	44.5%
2011	-9.68%	6.6%	2.3%
2012	12.53%	31.4%	15.0%
2013	49.02%	38.9%	35.1%
2014	9.66%	26.1%	31.8%
Geometric return	14.93%	40.93%	37.34%
Annualized volatility	51.59%	65.98%	61.67%
Return / Risk	28.95%	62.03%	60.55%
Jensen's Alpha	--	35.78%	31.17%
Beta	1	0.68	0.73

6. Conclusion

Based on the analysis and the empirical results displayed, the conclusions are:

First: There is a dividend puzzle on the Bulgarian capital market and the dividend yield of the shares has a strong influence on their return.

Second: Through the use of basic and easy to apply in investment practice dividend yield strategies it can be realised high risk-adjusted excess returns on a consistent basis on the Bulgarian Stock Exchange – Sofia. For the individual investors, the application of passive investment is preferred, given the low transaction costs and the lack of efforts to maintain the portfolio.

Third: Currently, the specifics of human behaviour are the most plausible explanation for the availa-

bility of dividend puzzle and consistency of the results from the application of dividend yield strategies.

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Павлов Ц.Л. Головоломка дивіденду на Болгарській Фондовій Біржі – можливість для аномальних ризиків та скорегованих повернень.

Стаття досліджує розрив між теоретичними формулюваннями просування політики оптимізації дивіденду і емпіричними даними компаній і поведінкою інвестора, відомий в академічній літературі як "головоломка дивіденду". Досліджено існування цього явища і його вплив на загальні ціни. Мета вивчення - встановити чи є можливим пристосува-

ти high-yield для усвідомлення розрахунку дивіденду. Емпіричні результати показують, що прибуток на активно або пасивно управляємий портфель високодохідних акцій покращує головний індекс Болгарської фондової біржі.

Ключові слова: головоломка дивіденду, політика дивіденду, вкладення дивіденду, ринкова ефективність, теорія перспективи, ринки капіталу.

Павлов Ц.Л. Головоломка дивиденда на Болгарской Фондовой Бирже – возможность для аномальных рисков и скорректированных возвратов.

Стаття досліджує розрив між теоретичними формулюваннями політики оптимізації дивіденда і емпіричними даними компаній і поведінкою інвестора, відомий в академічній літературі як "головоломка дивіденда". Досліджено існування цього явища і його вплив на загальні ціни. Мета дослідження – встановити можливість пристосування високоприбыльності для розуміння розрахунку дивіденда. Емпіричні результати показують, що прибуток на активно або пасивно управляємий портфель високодохідних акцій покращує головний індекс Болгарської фондової біржі.

Ключевые слова: головоломка дивиденда, політика дивіденда, вкладення дивіденда, ринкова ефективність, теорія перспективи, ринки капіталу.

Pavlov. Ts. L. Dividend Puzzle ON Bulgarian Stock Exchange – Opportunity for an Abnormal Risk-adjusted Returns

The present paper examines the gap between the leading theoretical formulations about the optimal dividend policy and empirical data on the companies and investor's behaviour known in the academic literature as "dividend puzzle". The existence of this phenomenon and its impact on share prices are explored. The aim of the study is to establish whether it is possible risk-adapted high-yield to be realized through dividend investing. Empirical results show that the yield on the actively or passively managed portfolio of high-dividend-yield shares outperforms the main index of Bulgarian Stock Exchange –Sofia.

Keywords: dividend puzzle, dividend policy, dividend investing, market efficiency, prospect theory, capital markets

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MODELING OF INVESTMENT ATTRACTIVENESS OF ENERGY ENTERPRISES OF UKRAINE UNDER GLOBALIZATION (COAL INDUSTRY CASE STUDY)

A strive of the coal-mining enterprises for investment is their priority objective under conditions of economic crisis. Innovative development of the enterprises is primarily attained through upgrading their mining assets, operation technology and raising safety standards. The implementation of clean coal technologies, coal extraction and enrichment requires a significant investment in the geological and marketing research, and studies of the technical, technological and economic conditions. Formation of appropriate investment strategy requires finding sources of business finance; therefore the creation of the two areas of investment at the level of industry and enterprise in the framework of the strategy is of particular importance.

The Strategy of the Coal Industry Development to 2030 indicates the state to be a major investor in the coal industry for the next 20 years. However, the Strategy envisages the reduction of funding for their businesses and access to self-sufficiency of production. The application of the clean coal technologies of extraction and enrichment is a key development strategy of coal enterprises through simulation of innovations, which makes up the research topic worthy.

This study is based on the contributions made by a number of researchers into exploration of the issues related to funding innovative development of the coal-mining enterprises: A. Alymov, A. Amosha [2, p. 3], A. Akmayev [1, p. 129], A. Astakhov, O. Wagons, D. Halushko, T. Hatova, G. Provinces, F. Evdokimov, M. Ivanov, A. Kabanov, I. Pavlenko, I. Petenko [5, p. 255], B. Reichel, V. Sally [6, p. 22]. However, we attempt to use modeling of the industrial development in order to focus on the core unsolved problems of ensuring investment policy of implementing the clean coal technologies and raising capacity of coal mining assets. Besides, there is a need to study the concept of evaluating the status of each coal mine.

The purpose of the study is modeling the process of investing in the innovative development of the coal industry. The framework of the study purpose involve a necessity to solve such problems as the analysis of the current forms of reproduction industry, identifying key problems and inefficient use of funds to construct a model of evaluation of investment attractiveness of mines including sectoral priorities and trends on the

world coal market in the context of sustainable development.

Mining industry as a set of individual enterprises has a structure's ability, because new construction and reconstruction (modernization) are elements in different directions; closure of some mines is also of this structure elements. Its formation depends on the relation between coal-mining enterprises at some period of time at which carried out various forms of reproduction industry (simple, extended, narrowed). According to some form of reproduction separate enterprises and industry, based on a systematic approach, have identifying an appropriate funding sources: a simple reproduction of a separate enterprise is obliged to finance the enterprise itself and extended – an industry that can attract investment funds from different sources. In this case the volume of industry investments is not the sum of individual enterprises investments under these conditions Investments provided mainly "on demand", when there is a need for in the process of development of mine, construction or reconstruction of the separate elements of technological lines or buying equipment. All these possible sources of concerning enterprise and industry has its own advantages and disadvantages and a focus that is desirable to increase or decrease the share of appropriate sources (Table 1).

Table 1

Desired funding coal mining enterprises *

Source of investment	Desired focus share of investment		
	for individual enterprise	<i>for the industry</i>	for the state budget
State budget funds	<i>increasing</i>	<i>increasing</i>	<i>reduction</i>
Own funds	<i>reduction</i>	<i>increasing</i>	<i>increasing</i>
Bank Loans	<i>reduction</i>	<i>reduction</i>	<i>reduction</i>
Borrowed funds	<i>reduction</i>	<i>reduction</i>	<i>increasing</i>

* Developed by author based on data [3, p. 29].

The dynamics of coal industry financing structure by source in accordance with "The Strategy" provides a temporary increase of the state budget share from 72.6% in 2007 to 77.5% in 2011, would be followed by

a gradual decline to 67.0% in 2030, reducing the share of own funds of enterprises from 27.2% in 2007 to 14.7% in 2030 and increasing the share of other private sources from 1.0% in 2007 to 18.4% in 2030. Thus the average annual volumes of financing are increasing by the state budget from 2.25 billion in 2007 to 4.51 billion in 2014.

The leading role in sources of investment financing plays the state budget and own assets. Bank loans as well as borrowed funds aims facilitate financing for a certain time period or even be absent.

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We are conducting a systematic analysis of objects related to the conservation capacity potential of mines by the degree of development of average annual estimated cost (Table 2). The study includes 91 object, including new construction, reconstruction and technical re-equipment of the Capacity Expansion - 34 and reconstruction and technical re-equipment without the capacity expansion - 57 objects. Assets under construction are 855 because of insufficient of capital investment, which it is used to construct a total of 5.01 billion. capital investments. Continuous under-funding of capital construction (volume decreased by 3.8 times - from 870 million. In 1991 to 229.4 million. In 2013) has caused a sharp reduction in construction works, including carry out preparatory workings decreased from 2232.7 km in 1990 to 639.2 km in 2013.

Table 2

Development of cost estimate limit by groups objects from 2008-2013*

Indicators	Data unit	Index by groups of objects					Total
		new construction	reconstruction increment of capacity	reconstruction without the capacity expansion	technical retooling with an increase of capacity	technical retooling without the capacity expansion	
The number of objects	object	7	18	20	9	37	91
Started work by groups of objects	-	1965	1984	1979	1982	1979	-
The estimated cost of construction	mln. UAH	2702	5961	3559	1106	3789	17117
The average estimates cost of object	mln. UAH	386	331	178	121	102	188
Disbursed cost estimate limit of 01.01.2008	mln. UAH	1516	1421	1655	541	1726	6559
Disbursed cost estimate limit of 01.01.2013	%	56,1	23,8	46,5	48,9	45,6	40,0
The distribution of objects at the average annual percentage of estimated cost for disbursed cost estimate limit of 01.01.2013							
less than 1,00	object /% disbursed	-	6 / 11,9	8 / 10,9	-	2 / 7,5	9 / 11,5
1,01 – 2,00	- // -	2 / 53,3	3 / 18,7	8 / 38,8	-	4 / 18,6	17 / 36,0
2,01 – 3,00	- // -	1 / 50,8	3 / 38,8	3 / 51,5	5 / 44,3	5 / 51,8	17 / 47,1
3,01 – 5,00	- // -	3 / 70,5	4 / 56,8	3 / 47,6	1 / 73,5	9 / 71,8	20 / 63,9
5,01 – 10,00	- // -	-	1 / 48,1	5 / 9,2	1 / 100,0	9 / 67,8	16 / 66,1
more 10,0	- // -	1 / 100,0	1 / 58,6	-	2 / 35,3	8 / 59,4	12 / 54,8
The average annual estimated cost disbursed cost estimate limit by groups objects	%	1,40	1,19	1,86	2,22	1,82	-

* Developed by author based on data [7, c. 24-83].

All objects will divide into the following groups (in percent per year): from development to 1.00; 1,01-2,00; 2,01-3,00; 3,01-5,00; 5,01-10,00; more than 10.00 per year. The calculation results are shown in Table. 2.

Work on the preparation and disclosure of excavation or field training layers and layers of support or capacity increase mine that it is work, caused by the development of mines in the space are characteristic of most of the point out groups (particularly the first four). Out of the total estimated cost of the object (17.117 billion.) only 57% (9,769 million.) accounts for elements intensive development industry (new construction, reconstruction and technical re-equipment of power increase). Thus, almost half of the volume of financing from state budget accounts for support of capacity of existing enterprises, that is a simple reproduction.

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Determined that in real conditions when it is desirable to facilitate intensity of the state budget and increase the share of own funds, the role of loans can be increased, especially under favorable credit terms (low bank rate). It is obvious, that terms of construction is so stretched unacceptable, particularly, when you consider the work of minefield. Based on the above, it can be concluded, that the investment policy, carried out for a long time, was unsatisfactory, because it has the following principal errors:

- mainly funding of facilities the simple (extensive) reproduction in loss extended objects (intensive) development;
- distribution of unsatisfactory by volume funding between numerous objects;
- focus on the prolonged timing of planned of work on individual objectst, that it generates large volumes of work in progress.

The long periods of construction is not objectively necessary. They are subjective because they arise due to the managing investments process, but when we

detailed study of issue – it is not, although volume of financing is really insufficient. Whatever volume of financing, including insufficient, there is another aspect of the issue - use of it that is. As the possibility of "less need", then the easiest method of apportionment – give all of equally and gradually, as happens in reality. Is much more difficult to make allocation on the principle of most efficient use of available resourcesthat it is targeted. For this purpose, in particular, is necessary quantify the "state of mine" and determine what to expect from this mine, if it provides the particular funding.

There is a need to develop scientifically based of methodological approach to determining the investment attractiveness of coal mines influenced by pre-defined the system of environmental and industrial factors. That economic subsystem mine is determined interaction of the other two subsystems: the extraction of mineral resources and the preparation of new reserves to further working out.

Adapting the methodology of quantitative assessment of the investment attractiveness of the choice to build a favorable investment objects. The difficulty lies in the fact that certain factors that describe the state mine directly to not comparable with each other, such as the depth of mining of coal and the kinds of coal. Accounting for the effects all existing factors is rather complicated, therefore is required choose from the main of them that really shape the extent investment attractiveness of mine. It is advisable to determine investment attractiveness of the mine as a quantitative index of the state, which preliminary (without the project) describes as feasibility maintain or increase the capacity of the enterprise, with a larger value of the index corresponds to a higher degree of relevance. Investment attractiveness of mine is characterized geological base and the level of development of industrial factors, and hence the attractiveness index should take into account both of these factors. The quantitative influence major environmental and of industrial factors on investment attractiveness mine is shown in Table. 3.

The study suggests, index of investment attractiveness (I) of the mine as a whole to determine as composition of these nine factors, with the value I have a level of 0.6 ... 3.3. In particular, for mine "Komsolets Donbas" industrial factors provided at the level of 2.4, and environmental - 0.6. The smaller value of this index corresponds to less investment attractiveness, that is reconstruction and maintenance of such mines requires more capital investments (to bring these mines to the level of large, efficient operating companies).

This approach makes it possible to rank mine according to their investment attractiveness and opens the possibility of an objective and substantially to approach to solving the issue about whom or advisable

preferable to send investment, the total of which is always limited.

Table 3

The complex of natural and industrial factors that determine the level of investment attractiveness of mines *

Environmental factors	Industrial factors
The residual mineral reserves	Throughput the main units (production processes) of mine
Capacity coal seams being developed	The complexity of underground of mine management
Immutability seams within the limits a mine field	The production capacity of the mine
The depth of mining of coal	The average volume of annual production for several years
The kinds of coal	

* Developed by the author based on data [4. with. 4-11].

Determination of the index of investment attractiveness provides an opportunity to make a comparative assessment of the state mines, but then is necessary with the mine aggregate got with higher index of investment attractiveness to choose the specific mine which should to send resources of capital investments. Established that of nine factors that describing investment attractiveness mine is most closely related with the capital investment capacity are capacity seams and throughput the main parts of the enterprise. The larger capacity and less through put varies some basic parts of the mine, the less need for capital investment to support or increase the capacity of mine.

At the same capital investments in these coal mines you can obtain greater effect. It is therefore logical to consider these mines a perspective and invest is primarily in such enterprises. Based on these common prerequisites, it is advisable to use a quantitative index of perspective mines that enables determine the sequence of of capital investments by some enterprises under limited of investment opportunities in the industry.

We analyzing the group of mines in one region or some mines from different regions in a mode of comparison of, we obtain a list of mines that have different levels of technical, economic and financial indicators. As a result, these mines have different investment attractiveness, and the task is put on targeting and a priority for investments. We suggest a mechanism of comprehensive assessment of investment attractiveness and priority of mines.

First of all, we determine for each mine level of economic of reliability and attractiveness. These parameters are indicative of internal reserves of the mine in terms of favorable to invest, and on this basis we

divided the mine into 3 groups (leaders, middle and closing) with appropriate assessment on a five point scale. Each score is the aggregate estimation of indexes the mine (combined coefficient of, the level of investment attractiveness). The higher the score, the greater the probability of transition to another group of the enterprise, and subsequently larger size of investment.

The next stage of research is to construct a model identifying perspective mines. As the objective function is adopted the maximum of coefficients of perspective mine:

$$A = \sum_{i=1}^n G_i \Rightarrow \max, \quad (1)$$

limitations:

$$\sum_{i=1}^n k_i \leq K; \quad \sum_{i=1}^n D_i \geq D_0; \quad n = \frac{1.5 K}{q} \geq 10;$$

$$G_i = m q_i \times t q_i. \quad (2)$$

Conventional signs in models (1) - (2):

A – the objective function; K – the annual volume of capital investments allocated for the reconstruction of the mine again; q – the average annual resource development capital investments in once again reconstructed the mine; n – amount of the mines that can be reconstructed according to available investments; 1.5 – reserve ratio of the considered mine (in order to prove amount them of not less than 10); $\overline{q_i}$ – the index of the mine under consideration, $i = \overline{1, n}$; $m q_i$ – capacity of seams on *i-mine* (relative indicator); $i = \overline{1, n'}$; $t q_i$ – technological reliability coefficient *i-mine* $i = \overline{1, n'}$; G_i – coefficient of perspective *i-mine* $i = \overline{1, n'}$; k_i – amount of capital capacity (annual) for *i-mine*; D_i – mining in the *i-mine* $i = \overline{1, n'}$; D_0 – specified or desired production levels.

This index for groups of Dobropilskiy mine is 4, but for mine Torez-Snizhne region this index is 2. The combination of mine with the largest values of the index of perspective with further targeted prospects investment is determined by the number of perspective of mines.

Suggested model is adapted to the conditions of partial reduction potential of enterprises concerning mining of anthracite in terms of transformation is relatively to perspective the mine to infrastructure of Torez region under the criterion rising living standards. It is established that the level of investment of 400 million. and the availability of funds in the amount of 50 UAH. on 1 ton capacity the mine "Progress" is capable by 2015 to increase production volumes of high quality coal to 1.1 million tons per year in of labor productivity 41 tons per month. The mine would have been self-sufficient enterprise and it has reached a level of profit

that is larger before tax in 2015 amounted to about 35 million UAH over a five year period.

Therefore, identification of the index of investment attractiveness provides an opportunity to make a comparative estimation of the state mines and making use of the aggregate of the mines having the highest indices of investment attractiveness to choose the group of specific mines, which deserve allocation of the largest resources of capital investments. The coal seams and capacity of the main parts of the mines are shown to be the most closely associated with the capital investment capacity of the nine factors that characterize the investment attractiveness of the mine. The more the capacity of the coal seams and less varies of the capacity of some basic parts of the mine, the less capital investment is required to maintain or increase the mine capacity.

To attract loans of international banks it is required to disclose the patterns in volatility of the mine prospective values, which are of paramount importance while forming the regional budget, and also creation of an anti-crisis program of coal regions development. Social and environmental aspects of coal regions require further investigation in the context of globalization to create programs that support the miners, subject to early retirement and projects that support areas of abandoned mines and provide their sustainability, greening processes in the mines and use of the clean coal technologies in mining and enrichment of coal. Adaptation of international experience in creating and implementation of these programs will have a positive effect not only on investment of the region, but also on the increase of the overall innovative activity.

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Павленко І. І. Моделювання інвестиційної привабливості підприємств енергетичного комплексу України в умовах глобалізації (вугледобувний комплекс)

В статі виявлено причини провалу інвестиційної політики на вугледобувних підприємствах. Дослідження показує, що інвестиції в основному спрямовані на екстенсивне відтворення підприємств, що є досить тривалим у часі.

Запропонована методика дозволяє оцінити інвестиційну привабливість вугледобувних підприємств та її основні взаємозв'язки промислових та природних факторів, які визначають пріоритетність об'єктів для інвестування в контексті стійкого розвитку вугільної промисловості.

Група природних та технологічних факторів визначають інвестиційну привабливість вугільних підприємств, які обрані та ґрунтуються на основі дослідження виробничих запасів шахти.

Кожен фактор оцінюється кількісно з використанням порівняних характеристик. Розроблено алгоритм для визначення взаємного впливу перерахованих факторів на рівень економічної надійності шахти.

Ключові слова: інноваційний розвиток, моделювання, державна підтримка, державне фінансування, вугільна промисловість, капітальні вкладення, адресне інвестування.

Павленко И. И. Моделирование инвестиционной привлекательности предприятий энергетического комплекса Украины в условиях глобализации (угледобывающий комплекс)

В статье выявлены причины провала инвестиционной политики на угольных предприятиях. Исследование показывает, что инвестиции в основном направлены на экстенсивное воспроизводство и что долго во времени.

Предложенная методика позволяет оценить инвестиционную привлекательность угледобывающих предприятий и ее основные взаимосвязи промышленных и природных факторов, которые определяют приоритетность объектов для инвестиций в контексте устойчивого развития угольной промышленности.

Группа природных и технологических факторов, определяющих инвестиционную привлекательность угольных шахт, которые выбраны и обоснованы на основе исследования производственных запасов шахты.

Каждый фактор оценивается количественно с использованием сравнительных характеристик. Разработан алгоритм для определения взаимного влияния вышеуказанных факторов на уровень экономической надежности шахты.

Ключевые слова: инновационное развитие, моделирование, государственная поддержка, государственное финансирование, угольная промышленность, капитальные вложения, адресное инвестирование.

Pavlenko I. I. Modeling of Investment Attractiveness of Energy Enterprises of Ukraine under Globalization (Coal Industry Case Study)

The paper identifies causes of the failure of investment policy at coal-mining enterprises. The study shows that investment is mostly aimed at extensive reproduction and extension projects of time that requires immediate completion. The method suggested allows assessing investment attractiveness of coal-

mining enterprises and it highlights a relationship of the industrial and environmental factors that determines a priority of objects for investment in the context of the coal industry sustainable development.

A group of natural and industrial factors which determine investment attractiveness of coal mines are selected and grounded on the basis of study of production elements of the mine.

Every factor is valued quantitatively with the use of comparative (model) characteristics. The algorithm to determine mutual influence of abovementioned factors on the level of economic reliability of the mine is developed. As a result, groups of mines are formed using the grade system in order to ensure that the addressee will be chosen but in accordance with the level of investment attractiveness.

There are generalized ideas of coal sector future development as for lifetime of mines, quality of reserves, and information about new construction sites as well as expediency to reconstruct a part of mine stock, and necessity to close unpromising mines which worked out their qualitative reserves.

Keywords: innovation development, modeling, clean coal technology, government funding, coal industry, capital investments, address investment.

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IMPORTANCE OF THE CODE OF ETHICS IN THE ORGANIZATION

Unethical behavior is a complex problem that is difficult to solve in contemporary organizations. It is also a problem that must be addressed by all structural levels in a particular company. Counteracting the unethical actions and influencing the behavior of the human factor towards ethical behavior must be a priority of a company's policy. The research and recommendations in this direction outline the necessity of an *Ethic code that shall comprise individual and company values, and whose harmonious interaction shall provide stability and efficiency of the management process. This code shall serve as a balancing force among the various interests and systems of values, which shall thus establish common ethical standards of behavior.*

Eliminating unethical behavior requires strengthened managerial supervision and adequate reactions by the employees (disapproval, recommendations, mentoring, signals, etc.). In addition, there must be imposed methods of sanctioning unethical behavior or praising ethical behavior. Superiors and employees must always work in an atmosphere of mutual understanding and responsibility. This involves counteracting unethical behavior and stimulating positive examples. Conforming to the ethical values of the organization and the effective application of company culture as a leading factor in the managerial process is accepted by managers as a fact that should not be questioned. However, a pertinent issue is also *the practical application of the idea of positive and constructive relationships in the managerial communication. In this respect, the real expression and application of the humanistic trend in contemporary management can be traced in the organization strategies that increasingly apply ethical codes.*

A key element of an effective managerial strategy is the development and adoption of a comprehensive *ethical code of behavior which shall guide through practical and unambiguous rules what the behavior of all employees shall be.* In its role of a behavior supervisor, the ethical code regulates the ethical norms and imposes penalties for violating them. Such penalties must correspond to the seriousness of the violation and must be supported by adequate administrative and legal regulations that must be explained to the employee upon his/her appointment in the particular organization. The ethical code regulates the relationships among work colleagues and their professional and personal behavior. It also determines the ethical norms that strengthen the trust and moral in the organization.

The ethical code aims at determining the ethical standards of employees' professional activity by:

- developing company culture and professional values based on the principles of humanity and accepting human rights;

- facilitating the adoption by the organization of processes of developing a common system of values in the conditions of globalizing economy;

- by facilitating the training of employees towards achieving professional ethical behavior in their work activities.

Among the underlying principles of every ethical code, there must be values like:

- Lawfulness – the employee carries out his/her work duties in compliance with the accepted internal regulations of the organization;

- Loyalty – the employee cooperates towards a state policy and in particular – company policy based on the principles of a law-abiding state;

- Honesty – the employee, depending on the functions assigned to him/her performs tasks, proposes and makes decisions, aiming at eliminating unethical behavior and strengthening the trust in the organization;

- Objectivity – the employee performs his/her duties objectively and diligently as he/she aims at collecting, analyzing and evaluating precisely and objectively all facts and circumstances related to his/her duties without allowing the influence of personal or external interest;

- Competence – the employee performs his/her duties by using and applying his/her knowledge and experience and constantly improves his professional qualification and skills in the interest of the citizens;

- Political neutrality – the employee does not allow his/her work to be influenced by his own or external political interests;

- Responsibility – the employee behaves in a way that does not damage his/her company's reputation, not only in carrying out his/her work duties, but also in his/her public and private life;

- Respecting the individual – in performing his/her duties the employee must be polite and respectful to everyone, and respect the rights and dignity of the individual without allowing any forms of discrimination;

- Clarity – the employee performs his/her work duties in a way that allows a monitoring on his/her actions and the results of the work done.

According to the ethical code, regarding the *relationship manager-employee*, the employee must act in a way that is professional, unbiased and active in de-

veloping and carrying out managerial decisions. Performing the duties in the organization must convince the managers that the employee can be trusted and he/she can be relied on. The employee must discuss with the managers and his/her immediate superior openly and honestly the problems encountered in the process of his/her work.

The relationship employee-employee requires trust, honesty and tolerance, which means no behavior is accepted that will harm the dignity and rights of an individual. The employee must be ready to help and assist his/her colleagues in their carrying out their work duties with his/her own competence. Employees must strive towards preventing situations of conflict among one another. The responsibility for honest and professional relationships among the employees is borne by the immediate superiors. A manager must set an example to the other employees in the administration by performing his/her duties diligently and punctually, and by showing high sense of responsibility.

In performing his/her work duties and in his public life the employee must not damage the company's reputation and must not allow *personal behavior* that does not conform to the accepted moral norms whether inside or outside of the organization. The employee must strive to avoid conflicts, but if such arise, he/she must solve them in an ethical way.

The ethical code shall be followed strictly, since it has been voluntarily adopted by all managers and employees in the organization, as any violation to the regulations described in it shall be considered a motive for bringing charges of disciplinary responsibility.

Preventing the instability in managerial communication can be aided by the implementation of an appropriate mechanism of control, which the ethical code is. It is a lawful system of rules for ethical behavior which aims at achieving sensible balance between positive managerial communication, encouraging a high level of team cooperation, identifying and eliminating instances of violation of the norms adopted by the organization. Basically, the code is not a normatively binding act, but this does not free managers and employees of responsibility.

Organizations' ethical codes unite, bind and organize ethical values. They represent the beliefs and outline the employees' responsibilities. The organizational code of values is a system of principal priorities, arranged hierarchically depending on their significance. It is a sustainable structure that refers only to the accents in the company strategy. The values in the code are in the form of principles, general prescriptions and requirements of the activity, norms and standards of behavior.

Among the major principles that must be included in the code of ethical behavior are: altruism, honesty and sincerity, objectivity, responsibility, openness.

Some of the common principles that must be the basis of ethical behavior in the organization are:

1. I will always work in compliance with the ethical principles of the organization;
2. I will perform my work duties by obeying the law and emphasizing on the organizational values and regulations;
3. I will be honest and loyal to the employer and will work in favor of the team;
4. I will strive to maintain the necessary professional competence and constant improvement of my professional skills;
5. I will conform to the requirements of the managers and will accept the necessary training, new knowledge and skills;
6. I will carry out orders and assignments objectively and steadily;
7. I will recognize and follow the main aim of the organization;
8. I will make decisions according to my competences and experience and if necessary will advise my colleagues in a spirit of understanding and cooperation;
9. I will maintain the positive public image of the organization.

The ethical code must be accepted and signed by everyone employed in a particular organization. Thus every employee will have the necessary basis of ethical behavior and will be aware of what to expect in following it and respectively that no behavior contradicting the clauses of the code will be tolerated. Therefore, the ethical code is a starting point and a necessary base for every organization that conforms to the ethical principles and norms of behavior of its employees.

Ethical behavior must be tolerated. Measures in this direction must be taken by managers who must set a personal example, good attitude towards employees, avoiding rudeness, arrogance, abuse of power. Appropriate behavior and just managerial decisions strengthen trust. Such managerial decisions are the basis of the ethical code. Conforming to them is subject to internal control and it is useful to create an organ or unit of at least three representatives of different levels in the structure of the organization. They must have the role of an ethical committee in cases of ethical conflicts and must monitor the practical application of the ethical code.

The currently existing ethical codes are rather general and do not offer particular practically applicable elements. In this respect the governing body must propose and adopt clear and adequate measures that must be stated as enforceable in the code. There must also be mechanisms for detecting and sanctioning unethical behavior, which must be developed and proposed by those who are dependent on the ethical code. As already mentioned, an Ethical committee (or a committee of evaluating ethical behavior) must be established. It must control the conformity to the Code

of ethical behavior and applying its principles. This time it may be a three-member committee with the following *functions*:

- to work objectively;
- to follow the adopted in the ethical code measures;
- to maintain a high level of ethics in the organization;
- to strengthen the company's values and culture;
- to monitor and evaluate the behavior of the managers and employees in either ethical or unethical way;
- to propose measures that can lead to more effective ethical actions;
- to inform about the made decisions concerning the employees performing their work duties in an ethical way;
- to receive signals about ethical and unethical behavior and to act appropriately according to the law and moral.

The committee chooses among everyone in the organization and reports to everyone at a general assembly.

The ethical mechanisms and the efforts of the ethical committee for monitoring ethical behavior will be successful only if they are supported by the governing body and the company culture. One of the means of supporting the ethical behavior is the establishment of a structural mechanism of ethics management.

The principal objectives of a structure, such as the ethical committee, are as follows:

- to advise the governing body on ethical positions;
- to monitor staff about ethical behavior;
- to inform about ethical violations;
- to carry out ethical policy;
- to persuade towards professional ethics.

The establishment and confirmation of the code is a process that calls for training, being concrete about encouragement and punishment, mechanism of filing complaints and registering violations of ethical behavior in the organization. The role of such a mechanism accepts the ethical committee within the framework of the organization which has the rights to consider the separate cases and to impose measures described in the code.

The ethical code is a tool for introducing clear ethical parameters for influencing and regulating the behavior of the employees in the particular organization. Honesty, justice and politeness form the moral basis, which along with the mutual interest in the organization are the fundamentals of the ethics. Among the managerial decision and the ethical behavior exists a strong bond and management is impossible to exist without ethics. The ethical code is a dynamic document that has to take into account the constant changes in the contemporary business world, as well as the specificity

of the particular organization and the already existing company culture.

The efficiency in the ethical code is expressed mainly in:

- its uniting effect on the human factor – it arises from the shared ideals, from the sense of availability of common managerial beginnings in the activity;
- strengthens trust and loyalty;
- creates clarity and correct orientation in work activities;
- forms common criteria of evaluation;
- has a positive effect on the company image and facilitates its long-term success.

The ethical code must be accepted by everyone and employees must behave in compliance with it. The code, as a common principle of appropriate ethical behavior, contributes to a better and more effective managerial process through overcoming difficulties and conflict situations, as well as finding decisions when various ethical dilemmas arise.

Ethical codes are transformed from ordinary documents in theory to practical means of training, education and communication. They are the most visible indication of the ethical philosophy of the organization. In order for the ethical code to be applicable and meaningful, there must be a clear outline of the rules and ethical requirements. The employees' expectations regarding their ethical behavior must be realistic and the solution of potential ethical dilemmas must lead to specific results in favor of ethics. Employees are pre-instructed with the contents of the ethical code; they can choose and realize that they must conform to it. This means that the content of the code must be carefully developed by taking into account the various systems of values, company aims, strategy and specificity of the organization. In order to be effective, ethical codes must be created openly, with the participation of more interested people, as everyone asks questions and makes propositions. In some organizations, managers encourage the separate units to have their own codes of solving specific ethical dilemmas. This strengthens the influence and importance of ethical behavior in the organization. In the contemporary economic and social reality the necessity of ethics in the relationships is being realized more and more both in the public and private sector.

The dynamic economic environment faces company managers with the ethical dilemma: whether they should be ethical role models or whether they should yield to the pressure of the situation and the circumstances and act according to their interests and material profit. This is a major ethical issue of the contemporary society. There is no doubt, however, that the high ethical standards are positive factors for long term development.

Йорданова Е. Важность этического кодекса для организации

Противодействие неэтичным действиям и влияние этического поведения на поведение человеческого фактора должны быть приоритетом политики компании. Исследования и рекомендации в этом направлении позволили наметить необходимость в этическом кодексе, который должен включать в себя индивидуальные и организационные ценности, и гармоничное взаимодействие обеспечивающее стабильность и эффективность процесса управления. Этот кодекс будет выступать в качестве уравнивающей силы между различными интересами и системами ценностей, которые должны, таким образом, установить общие этические нормы поведения.

Ключевые слова: этический кодекс, поведение, отношения, связи.

Йорданова Е. Важливість етичного кодексу для організації

Протидія антиетичним діям і вплив етичної поведінки на поведінку людського фактору повинні бути пріоритетом політики компанії. Дослідження та рекомендації в цьому напрямку дозволили намітити необхідність в етичному кодексі, який повинен включати індивідуальні та організаційні цінності, і гармонічну взаємодію, яка забезпечує

стабільність і ефективність процесу управління. Цей кодекс буде виступати в якості врівноважуючої сили між різними інтересами та системами цінностей, які встановлюють загальні етичні норми поведінки.

Ключові слова: етичний кодекс, поведінка, відношення, зв'язки.

Jordanova E. Importance of the code of ethics in the organization

Counteracting the unethical actions and influencing the behavior of the human factor towards ethical behavior must be a priority of a company's policy. The research and recommendations in this direction outline the necessity of an Ethic code that shall comprise individual and company values, and whose harmonious interaction shall provide stability and efficiency of the management process. This code shall serve as a balancing force among the various interests and systems of values, which shall thus establish common ethical standards of behavior.

Keywords: ethical code, behavior, relationships, communication.

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MOTIVATIONAL ASPECT OF ORGANIZATIONAL CULTURE IN THE QUALITY MANAGEMENT SYSTEM AT THE ENTERPRISE

In the conditions which forms in the economic sphere of Ukraine at present time of its development, the question of motivation becomes emergency actual, because the successful solution of certain problems facing society requires the formation of effective motivational basis, is able to attract workers to the active production of competitive goods. In this aspect, the most difficult is the problem of development and implementation of unitary approach to the qualitative evaluation of staff highly-effective work.

The learning of questions about activation of human factor in the quality management system at the enterprise is reflected in the scientific works of Russian scientists such as A. I. Momot, N. E. Muromets, S. L. Reshmydilova, N. A. Simchenko, A. V. Stakhiv, V. Stern, A. A. Tretyak, etc. Otherwise, in spite of a wide spectrum of scientific works in this subject some aspects of research the role of workers motives in the quality management system at the company still without scientists' attention, which is caused by the constant changes of the motivational direction of staff in the conditions of intensifications crisis phenomenons.

It caused the leading of research the purpose of which is analysis the improvement of motivation and stimulation of labor activity in the quality management system at the enterprise in modern conditions.

It should be noted that according to results of research of S. L. Reshmydilova [1] was proposed a mathematical model of ranking the indicators of products quality, which allows to identify the dynamics of change and the relationship between indicators of the creative activity of workers and quality of work. Talking about all of this into account, the formulation of the problem of social management of the quality of their work, according to the author, is to develop and validate mechanisms of synergistic interactions and the creation on their basis of the optimum scheme of relations between employees and the labor team in the process of ensuring product quality.

N. E. Muromets noticed [2], that traditional directions of investment support the quality of personnel first of all, provide the investment of the professional training, social development of the enterprise, as well as the formation of systems of payment and participation forms in profits and capital of the company and does not lead to the formation of the corresponding

modern terms of quality of staff. So, it's necessary to create new principled approaches to complex of ensuring the effectiveness of investment support workers in the conditions of market transformations.

N. A. Simchenko [3] proposes to use the model of formation and implementation of the staff strategy as the way of improving the quality management system at the enterprise, according to which the main components of the personnel strategy development is usage of labor potential on the basis of more qualitative performance of management functions based on the results of assessment of the personal contribution of employees, their motivation to develop.

Separately should be accent that the scientific research of G. V. Shulyar [4], the attention is focused on the building of systematic approach to personnel motivation through needs in the quality management system. According to the author's conclusions, the use of penalties and moral and punitive measures for non-compliance with the quality requirements is impractical because there is a risk of reduced productivity and initiative personnel. So then, the motivating measures need to be taken comprehensively and most importantly – it is advisable to inform the personnel about the possibility to meet his needs in case of an effective activity in the quality assurance system in the company. Thus, the factor of motivation is a dynamic phenomenon, which means that the parameters of motivation can be changed and direct the employee to the decision required production goals.

A leading American scientist in the branch of management G. L. Daft notes: "The motivation of employers affects to productivity, and a part of the manager's job is to guide motivated to achieve the organization's objectives" [5, p. 49].

The fast response to the needs of market and competitor's actions depends on the competence of managerial staff, the style and methods of management. A precondition for the survival of the enterprise in the conditions of tough competition is appropriate and timely response by senior staff on environmental change and record of trends of social development. It's necessary to create a set of measures for the motivation of management personnel, including the establishment of an effective organizational culture, where it is take the main place. So, there is extremely important the

issues of formation and implementation of incentive systems managers at domestic enterprises as the most important catalyst that can increase the rate of economic activity contribute to the achievement of personal and organizational goals.

The interaction of organizational culture and work motivation is determined by their total focus of labor behavior. But the important fact is that in economic science a holistic concept had not yet developed that integrates the provisions of the theories of organizational culture and motivation of the personnel in the quality management system in a logically interconnected, unified knowledge system about the principles of social regulation of labor behavior.

An important step in the research of the motivational functions of organizational culture belongs to the foreign scientists, such as S. Adams, V. Vroom, E. Lawler, A. Maslow, L. Porter, A. I. Prigozhin, T. A. Salamanda, V. A. Spivak, S. V. Shekshnya, and others. Some works of domestic scientists are dedicated to thorough research of some aspects of the relationship of organizational culture and motivation, as well as D. P. Bohinya, A. A. Grishnov, V. M. Danyuk, E. M. Libanova, A. M. Kolota, V. M. Petuh.

According to S. Robbins, an organizational culture defines the way of the company, i.e. forms some features that emphasize its uniqueness; influences the distribution of organizational identity; promotes growth in the level of consciousness and contains the controls that determine the behavior of employees [6, p. 248]. So, the culture helps to retain the integrity of the company through the establishment of acceptable standards of thinking and behavior.

An organizational culture is the glue that unites and activates the personnel of the enterprise to address issues of quality improvement and continuous improvement. It is culture that plays a significant role in ensuring the effective management of staff and is seen as a powerful strategic tool to Orient all employees on organizational goals, encourage initiative, to ensure dedication, to reach an understanding. Thanks to the culture as the basis of the motivational mechanism for the identification of strategic thinking staff, resulting in improved quality and competitiveness of products on the national and international markets [7].

So, from the one side, the organizational culture embodies the system of personnel motivation and from another side corresponds to the enterprise's strategy. The culture allows to us to focus all units on common goals, mobilize the initiative of employees of creative attitude to work, and to identify and strengthen competitive advantage.

An organizational culture on ways to improve the efficiency and quality of its results by its nature and essence of the company's is a tool which allows to direct the efforts and capabilities of all departments of the organization and its members to achieve common

goals on the principles of mutual understanding, co-creation and mutual complement [8].

There are needs and values, which lead to certain actions in the basis of motivation mechanism of staff conduct, therefore, the organizational culture can shape the motivational field, which will unite employees around company goals, will be encouraged to work creatively and effectively both for its own benefit and the benefit of the company [9, p. 89].

Especially important means of influence on working behavior of employees are the methods of promotion, opportunities for professional and career growth, enhanced job satisfaction. So, for example, V. V. Usacheva argues that "organizational culture and system of work with personnel perform for each other internal factors of influence, because changes of organizational culture change necessitate a corresponding change in personnel work from the one hand. On the other, areas of work with staff to strengthen and develop organizational culture, in turn, receive it as a basis for its further improvement" [11, p. 7].

Thus, according to V. Usacheva "...the importance of purposeful introduction of modern methods of work with personnel at Ukrainian enterprises that provide a higher level of coordination of interaction of employees of enterprises..." [11, p. 11].

Motivation is the process of purposeful develop employee interest in the work and its results. The process of formation, obtaining and maintaining the required level of product quality is closely linked to the needs of personnel involved in the process of creating products. The incentives of workers to domestic enterprises in the quality management systems are insufficient: awards, often don't reflect the employer's contribution to ensuring product quality, and among the stimulus dominated by fines for the appearance of the goods of improper quality (or defective) [12].

Z. K. Samaybekova wrote that an interaction of organizational culture motivation of staff, identifies the following measures to improve the level of organizational culture: improvement of the system of remuneration, promotion, incentive systems [13, p. 12]. Building a system of motivation based on the organizational culture of the company, approval of traditional (tangible and intangible) funds incentives with specific tools – the values, norms, mission companies not only have a significant impact on the economic results of the company, but help run the internal mechanism of motivation – motivation in the work itself, which ultimately ensures the quality of working life.

Mission, goals and strategic priorities of the company can effectively be performed only in the context of value-oriented management. American scientists N. Huzlead, W. Becker and G. Beattie notice "...strategic thinking (...the degree of understanding by staff of the strategy of the firm, the understanding of the strategy and the level of availability of relevant competences

and the desire to implement this strategy)... has a significant impact on the quality of the strategy" [14, p. 141].

As noted by O. V. Harchishina, the motivating function of organizational culture is very closely linked to the mechanism of implementation of management decisions, therefore, it also provides the impact of culture on the success of the company. Motivational function reflects the practical value of the concept of organizational culture as it indicates the possibility of achieving a particular economic result, and therefore creates conditions for quantitative measurement of indicators that illustrate the effectiveness of the organizational culture [15, p. 152]. Generally, the quality management system of labor at the enterprise - is a set of actions and activities to improve the functions of planning, organizing and controlling the process of improving the quality of work and staff motivation to implement it with the aim of increasing the efficiency and competitiveness of the enterprise [16]. Thus, for any enterprise is necessary to develop and implement a clear system of quality management of labor that will ensure its competitiveness [17].

So then, the motivational function of the organizational culture becomes as a standard focus, the effectiveness of the company, offers the opportunity to build long-term results achieved, to ensure the quality of work life of staff. The multiple using of complex of values and goals management, as well as traditional means of motivation, and specific funds of the organizational culture is important for realization of motivational function.

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Максименко І. О., Узун М. В. Мотиваційний аспект організаційної культури в системі управління якістю на підприємстві

Стаття присвячена аналізу кола питань, пов'язаних із розглядом впливу організаційної культури на ефективність мотиваційного механізму в процесі стратегічного управління підприємством. Розглянуто особливості тісного взаємозв'язку в ланцюгу організаційна культура–мотивація–ефективність діяльності компанії. Встановлено, що високий рівень організаційної культури виступає ключовим фактором довгострокового успіху підприємства, за рахунок впливу на мотивацію трудової діяльності персоналу. Визначена залежність готовності компаній здійснювати масштабні перетворення з впровадження стратегій підвищення якості продукції від їх цілей та організаційних цінностей працівників. Обґрунтовано необхідність створення дієвого, адаптивного до нових вимог, механізму мотивації праці персоналу як важливої умови ефектної діяльності компанії. В ході дослідження виявлено вплив мотивації працівників на якість продукції. Встановлено, що організаційна культура поєднує мотивацію персоналу і стратегію підприємства. Запропоновано комплекс напрямків щодо формування ефективної організаційної культури як чинника мотивації персоналу в системі управління якістю на підприємстві.

Ключові слова: організаційна культура, мотивація персоналу, система управління якістю.

Максименко И. А., Узун М. В. Мотивационный аспект организационной культуры в системе управления качеством на предприятии

Статья посвящена анализу круга вопросов, связанных с рассмотрением влияния организационной культуры на эффективность мотивационного механизма в процессе стратегического управления предприятием. Рассмотрены особенности тесной взаимосвязи в цепи организационная культура–мотивация–эффективность деятельности компании. Установлено, что высокий уровень организационной культуры выступает ключевым фактором долгосрочного успеха предприятия, за счет влияния на мотивацию трудовой деятельности персонала. Определена зависимость готовности компаний осуществлять масштабные преобразования внедрения стратегий повышения качества продукции от их целей и организационных ценностей

работников. Обоснована необходимость создания действенного, адаптивного к новым требованиям, механизма мотивации труда персонала как важного условия эффективной деятельности компании. В ходе исследования выявлено влияние мотивации работников на качество продукции. Установлено, что организационная культура объединяет мотивацию персонала и стратегию предприятия. Предложен комплекс направлений по формированию эффективной организационной культуры как фактора мотивации персонала в системе управления качеством на предприятии.

Ключевые слова: организационная культура, мотивация персонала, система управления качеством.

Maksymenko I. O., Uzun M. V. Motivational Aspect of Organizational Culture in the Quality Management System at the Enterprise

The article is devoted to the analysis of the range of issues associated with the review of the impact of organizational culture on the effectiveness of motivational mechanism of strategic management. Describes the features of the close link in the chain of organizational culture–motivation–efficiency of the company. It is established that a high level of organizational culture is a key factor in the long-term success of the enterprise, due to the influence on motivation of labor activity of the personnel. It's determined a dependence of the willingness of companies to implement large-scale transformations of the implementation of strategies to improve product quality from their organizational goals and values employees. It's grounded the necessity of creation of effective, adaptive to new requirements, the mechanism of motivation of the personnel, as an important condition of effective activity of the company. The study revealed the influence of employee motivation on product quality. It is established that organizational culture unites staff motivation and strategy of the company. Authors propose a complex of directions for the formation of an effective organizational culture as a factor of motivation of the personnel in the quality management system at the enterprise.

Key words: organizational culture, personnel motivation, quality management system.

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CONCEPTUAL APPROACHES TO FORMING A STRATEGY OF INNOVATION-BASED DEVELOPMENT OF THE COAL INDUSTRY*

Problem setting. The innovation-based development is a strategic priority for the economic policy of Ukraine, and the scientific and technological development of industrial enterprises is considered as one of the major problems of the national economy. The accession to the WTO provides for a significant acceleration of innovation processes aimed at increasing production and sales of new competitive products, the expansion of production activities and access to the world markets.

The experience of developed foreign countries convinces that a sustainable socio-economic growth is achieved only on the basis of innovation through the active use of modern scientific research. Only under such conditions the plans on production of high-quality products, resource-saving intensification, increase of production efficiency, products competitiveness assurance on the domestic and global markets are implemented.

One of the determining factors of accelerated economic growth is the activation of innovative activities of enterprises and the transition of Ukraine to an innovative model of the economic development. And "... the dominant of the state policy in relation to the coal industry, as it is noted by the researchers of the Institute of Industrial Economics of NAS of Ukraine, is to enhance the efficiency of coal mining rather than the achievement of its predefined volume at any price" [1].

The proposals offered by the scientists to improve and stabilize the work of the coal industry include: accelerating the restructuring of the industry followed by putting of highly-unprofitable mines out of operation mostly through conservation and modernization of promising mines (the appropriate social protection for the workers released being provided); legal regulation of the state support system for coal mining companies giving it incentive character; establishment of the regulatory and methodological framework for attracting private investment in public sector of the industry through joint development of coal deposits by public and private enterprises; implementation of the anticipa-

tory strategy aimed at creating fundamentally new, innovative tools and technologies necessary for Ukrainian mines to extract the coal from thin problematic layers [1]. According to leading scientists, "Formation of the innovation economy supposes the creation of such an institutional environment where innovation is the main source of maximization of owner's individual incomes" [2, p. 19].

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Innovative economic model is based directly on obtaining new research results and their technological introduction in production, providing thus the GDP growth mainly due to the production and sale of high-tech products and services. Its main purpose is to improve the competitiveness of the national economy through the use of domestic and global scientific, technical and educational potential.

The problem of the development and use of the innovation potential is of special importance, what is explained by the need to address the strategic objectives at the micro and macro levels. At the same time, one can observe an organic entry of the Ukrainian economy into the world economy. Technological development is practically carried out in all industries and contributes to strengthening of the innovative nature of production activities and forming of a special sphere of innovation sphere with specificity and actors characteristic of it. A necessary condition for the formation of the innovation sphere is the determination of the mechanisms of innovation processes development. Now, the innovative activity is considered as one of the most important factors in improving the efficiency of industrial production. Intensification of innovation requires new approaches to the organization of the relationship between all participants of the innovation process, consolidation of certain functions for the relevant authorities.

Analysis of recent researches and publications.

Problems of formation of the industrial innovation development strategy with consideration of sectoral specificity are studied by many scholars, including O. Amosha, I. Buleev, V. Vyshnevskiy, A. Voronkova, V. Heyets, V. Holyan, T. Grynko, V. Dementyev, A. Zemlyankin, A. Kabanov, T.M. Kachala, Yu. Kindzerskiy, Yu. Kovalenko, L. Kuzmenko, T. Melnyk, K. Pavlov, Yu. Petrunya, L. Rassuzhday, L. Starychenko, D. Cherevatskiy, A. Chukhno, N. Chukhray, L. Fedulova, N. Shchepkina and others. The researches of leading scientists are the scientific basis for the de-

velopment of further scientific-methodological positions, methodological and applied scientific recommendations on forming the strategy of innovation-based development of the coal industry.

The task of this study is to justify the conceptual approaches to the formation of the strategy of innovation-based development of the national coal industry.

The main material of the study. The study defines conceptual approaches to the formation of innovation-based development of the coal industry (Fig. 1). Let us consider each of these approaches.

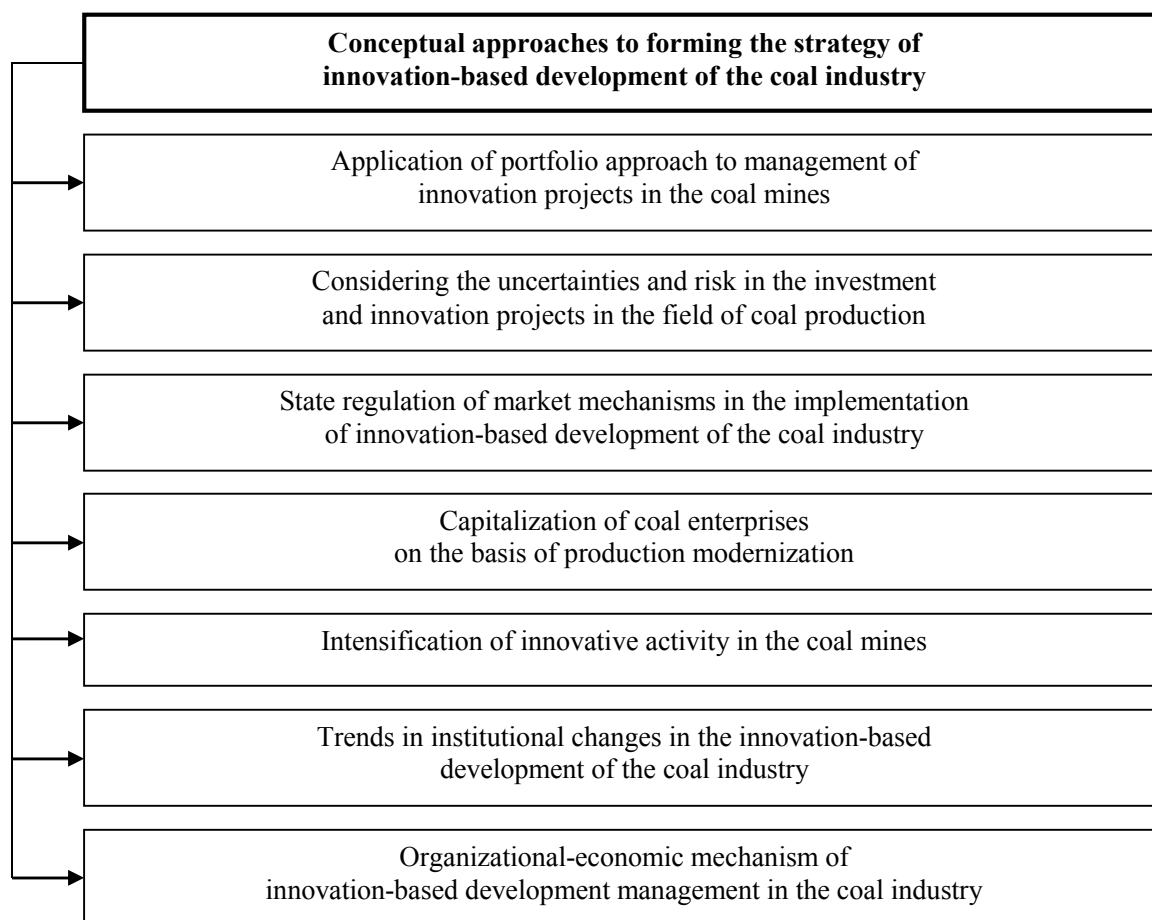


Fig. 1. Directions of forming a strategy for innovation-based development of the coal industry on the conceptual foundations

The modern theory of portfolio investments was proposed by the American economist and Nobel laureate in economics Harry Markowitz [3], the basic concept of which is reduced to the following: the behavior of capital market players is determined not only by obtaining of the expected return on their investment, but on all the securities, according to the market of capital research in the U.S., which are traded on the market and which are in demand. In certain circumstances, low-income securities may seem more attractive for some investors than high-income ones. Thus, to determine the choice of security the investor is guid-

ed not only by the expected return, but also by a possible risk. The main problem facing the investor is to achieve the maximum level of expected return on investment under a given level of risk and to reduce a potential risk for the expected return. The aim of every investor – more income with less risk.

Basics of H. Markowitz's theory of optimal portfolio are:

indicators of measurement of risk level, proposed first. Earlier, the risk was measured intuitively. The risk is the degree of error in the prediction of income;

investment risk, which can be reduced by the diversification of investments through the increase of the number of components of the investment portfolio. In this case, those portfolio assets are chosen the revenues of which have different focuses and do not depend on the same factors. The relationship between incomes is measured by the correlation coefficient "r". The negative correlation reduces the risk, the positive increases it;

differences between the risk and income of one financial instrument and the risk and income portfolio, which consists of several financial instruments;

choice of assets by a rational investor that provide less risk under a given level of income, or providing a bigger income under a given level of risk.

Thus, a so-called efficient portfolio is formed. In the theory, the line that connects all effective investments is called the limit of effectiveness.

The modern theory and practice of investment management considers an innovation investment project as a set of interrelated activities designed to achieve predefined goals for a limited period of time and under the budget established (plan of cost). This project is an integrated system that requires certain resources for its implementation, i.e., requires the investment of capital, has a specific life cycle, is created and functions in the external environment under the influence of many factors. However, to predict precisely the extent and the nature of impact of each of the factors or their combination on the characteristics of the project is almost impossible, that is, keeping any project is closely connected with the concept of risk.

The need of risk management for the investment project is explained by the specific features inherent in real investment: the scale of investment in facilities that are the complex natural and industrial systems; high capital intensity and constant dependence on natural, technological and human impacts; complexity of the relationship between hazard (risks) and possible damage [4].

Thus, the problem of making investment decisions is reduced to the analysis of the adequacy of the plan of anticipated development of events and probable consequences of its impact on the expected outcome.

The higher the investor assesses the risk of the project, the greater his requirements for the profitability of the project. When making calculations, this is reflected by an increase in the discount rate due to the inclusion of the so-called "risk premium". Obviously, the increase in the discount rate reduces the estimated effectiveness of the investment project. This reduction should take into account possible losses associated with the risk events. Discount rate reflects the profitability of alternative investments, but the above alternative investments are also generally associated with risk. To avoid the double consideration of the risk, the calculations use as a rule risk-free alternative investments

(such as government bonds). Thus, the need to consider the risk in the discount rate generates a new concept – the discount rate that takes into account risk.

Analysis of uncertainty factors in the design, selection and implementation of investment projects is multifaceted and is provided [5]:

technically – by changing the requirements to the content and composition of project materials, as well as through the development of the organizational and economic mechanism that allows to adapt the project to changing conditions;

methodically – through the use of such models of functioning of investment facilities and methods of evaluating the effectiveness of investment projects (methods for calculating the indicators of expected effectiveness), which provide as complete and adequate account of uncertainties as possible;

organizationally – through the creation of new organizational structures, and / or involvement of new members in the project in order to reduce or redistribute the risk.

Based on the analysis of existing approaches of scientific schools and generalization of advanced international experience, the system is offered that includes the measures on the state regulation of innovation-based development of production under modernization, structural economic reforms and intensification of integration processes (Fig. 2).

The world experience shows that the coal industries of leading economies around the world connect their development with innovative modernization aimed at the development and implementation of technologies for complex processing of coal. At the same time, large-scale closure of mines leads to the loss of already disclosed industrial coal reserves and worsening of the social situation in the coal-mining regions. The problems facing the coal industry can be solved due to the mechanisms of companies' capitalization that are reflected in the new long-term coal policy [6; 7].

To give ground in favor of ways of improving the mechanisms of capitalization by increasing the value added in the chain of enterprises value increase on the basis of innovative modernization of the coal production the following is proposed [8]:

using the categories of production (enterprise) capitalization as applied to the development of coal mines;

conducting innovative modernization of coal production to form a chain of the economic value added by switching from goods production for a narrow energy use to getting products new for the industry, i.e., a complex coal processing.

Capitalization as the process involves an extended reproductive value. Capitalization is the first step towards the establishment of production activity, which enables the extended reproduction of all assets avail-



Fig. 2. Measures of state regulation of market mechanisms in the implementation of innovation-based development of the coal industry

able at the enterprise. It should be noted that to ensure that the assets are not destroyed, they have to earn the money at least on their own repair. In this sense, capitalization is a minimum condition that ensures a slow but progressive growth (development) of the company.

The indicator of capitalization is the value of (company's) asset – a single asset can be expensive but have a low market capitalization. To solve the problems of the industry capitalization, the factors of capitalization are divided into three levels (Fig. 3):

lower level – the level of the enterprise (micro-level) – a set of different resources, assets, including the ability of individual workers, each of which requires the capitalization of in order to develop;

average – sectoral (meso-level) – the state regulation of capitalization, which is reflected in the policy of the state development of the industry aimed at creating a favorable investment climate and possible getting of credit and other resources;

upper level – the integrated needs of the country, society's identity. Manageability of capitalization at enterprise level will depend on whether the society truly determined the integral value priorities of capitalization which are reflected in the level of GDP, government policy, regulatory and legislative framework. To do this, a draft standard of activities with capitalization is formed and given to companies, their resources and assets built in the chain of added value production.

The analysis of the scientific literature shows that despite the presence of a large number of publications on problems of capitalization there are no works dealing with management of capitalization in the coal in-

dustry, which is mainly explained by a high unprofitability of coal-mining enterprises. The solution to this problem lies in the innovative modernization of the industry. Innovation-based development of the coal industry is associated with the improvement of machinery and technology of coal mining, and borrowing of foreign technologies is offered as a source of development of this area. At the same time, the analysis of global trends in innovation-based development of the coal industry is associated with the development and implementation of technologies for complex processing of coal.

Management of the coal and energy sector takes into account the principles of social and economic programming which are characterized by: the need to take into account the nature of the coal-mining regions development caused by the closure of coal-mining enterprises; consideration of a city-forming factor of coal-mining enterprises in order to determine the conditions for operation of the mining areas after working out or cessation of the deposit exploitation; consideration of market conditions for the fuel and energy resources; consideration of investment made by participants of transformations when choosing measures of socio-economic development of the area; need to consider external and converting entities as a single economic complex areas taking into account the economic, social and environmental factors.

To introduce new innovative technologies for complex processing of coal and to create industrial clusters it is advisable to use the following tools:

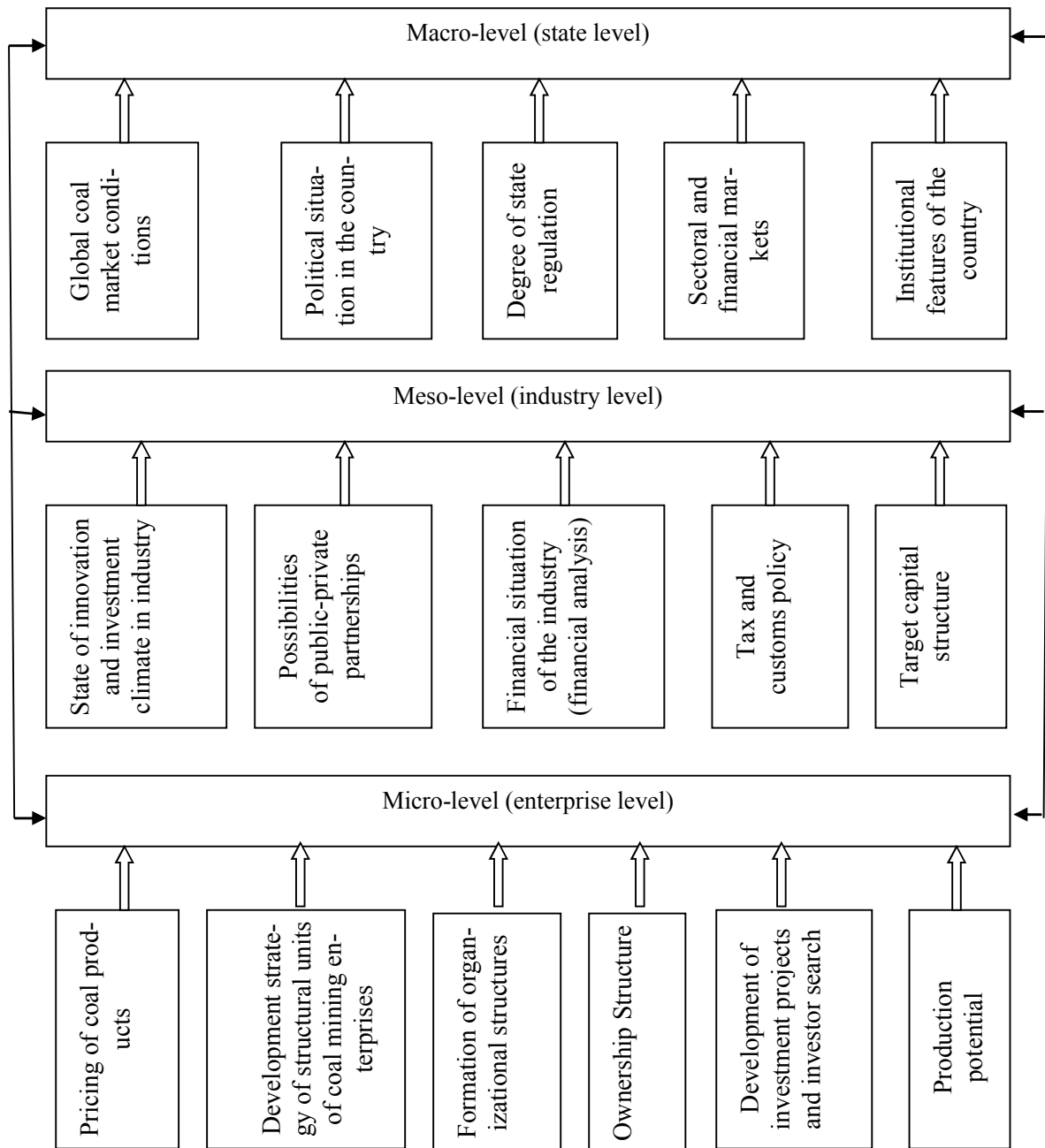


Fig. 3. Factors of coal-mining enterprises capitalization [8]

granting benefits for income tax to the companies which implement technologies of integrated use of mineral resources. The benefit can be granted on a competitive basis and for the project's payback period;

abolition of duty on import of equipment and VAT on it in order to reduce capital expenditures for purchasing the equipment for complex processing of coal;

development of the credit mechanism for the companies which wish to introduce innovative technologies;

development of the organizational-economic mechanism of providing public money and government guarantees, creation of budgetary environmental funds,

where the implementation of these technologies will allow to obtain a significant environmental and economic effect.

Modernization of technological processes occurring at coal-mining companies on the basis of complex processing of coal will increase: the investment attractiveness of coal-mining companies because of the prospect for making profit in a shorter period; capital funds through the implementation of additional products; capitalization of coal-mining companies, coal companies due to obtaining of additional economic value and their inclusion in the chain of values.

The institutional environment is one of the main factors that determine the dynamics and nature of the

development of certain economic sectors, in particular the coal industry. The current strategy of rational use of mineral resources is not based only on market opportunities. Even in the developed countries, the market mechanism does not provide solution of the problem of strategic development of mineral resources use, environmental protection, sustainable economic security. So, the government regulation is necessary.

Institutional changes are considered on the basis of the total life cycle of any system. For example, in Ukraine, where there was a phase of liquidation, disappearance of old institutions the phase of the emergence of new institutions is determined, the stage of institutional designing. When creating new institutions, one can use both a government forced choice of a new institution through the mechanism of the political market and the voluntary adoption of new factors by coal-mining companies through the mechanism of market institutions, which should be created.

In Ukraine, there are still no large-scale institutional innovations that the state could carry out because the transition to the market means only price liberalization and the introduction of private ownership of production assets (means of production).

However, the real input of price liberalization occurred long before the adoption of the normative document that would formalize, allow punishment without a promise for the things which for a few years were a normal practice for coal-mining companies. They are a barter exchange, contract prices, and a black coal market, etc. As for the introduction of private ownership, in fact, the privatization is again becoming a formalization of property distribution that already took place in the pre-reform period [10].

It may be noted that in the country as a whole and in the coal industry, in particular, there is a market of different institutes of exchange that has been developed and operates, i.e., the market in the equilibrium stage:

a small proportion of the civilized market (with a government guarantor of property eligibility and their changes), while its predominant part is distributed between private clan agreements and nationalized clan agreements (with a government guarantor that acts selectively, i.e., not on the basis of the law but on the basis of individual decisions made by the executive).

At present, the codes and standards for mining operations which concern all aspects of coal mining are revised, including those from the exploration to closure of enterprises and settlement of issues in the further stage. However, there is a need to solve the problems concerning the issuance of licenses for mining with clear requirements for the provision of data and reporting by the entities, the assurance of full transparency in this and all subsequent stages of the coal companies operation.

In the coal sector, to some extent, the transformation of property relations is carried out on the basis

of privatization of state-owned enterprises, creation of integrated structures [11], but the institutional problems concerning the impact changes of the organizational methods on sectoral restructuring and socio-economic development of mining regions should be still solved, as well as the transition to market regulation on the basis of the principles of production efficiency, etc. [12, 13]. There are still unresolved issues concerning structural changes, namely: the technical upgrading of production, replacement of physically and morally obsolete fixed assets, ecologization of production, transition to advanced and resource-saving technologies, reduction of negative anthropogenic effects on the environment of coal enterprises, especially coal mines, which are in the stage of liquidation [14].

The institutional basis for functioning of the organizational and economic mechanism of enterprise's innovation-based management should provide funding, material and personnel support in the sphere of production, labor organization, marketing services [15, 16, 17].

The economic mechanisms of activation of the innovation processes of coal production include: the restructuring of payables to budgets and off-budget funds by increasing debt maturities; cancellation of penalties; reduction of interest by restructuring; partial or full reimbursement of interest paid on bank loans from the budget.

To stimulate the innovative activity the following tax instruments are used: a special tax regime for coal enterprises implementing innovation; exception of expenses for research and experimental developments related to primary production activities from the amount of taxable income; exemption from taxation of coal enterprise's funds invested in risky projects; providing investment tax credits to companies investing in their modernization and measures on rational use of energy; introduction of tax incentives for companies that conduct R & D: the introduction of tax privileges for the cost of patents; income tax reduction; writing-off R & D costs on the cost of coal products; tax credits for investment in research and development; tax credit to increase R & D expenditure; use of credit insurance system (guarantee a return to 50% of loans for 15–20 years); providing companies with subsidies for research and development of new products or technological processes (e.g., up to 40% of the cost for innovation); targeted free subsidies to the enterprises that are mastering new technology (for the purchase and installation of new technological equipment, implementation of improvements for up to three years, etc.); subsidies for small-sized industrial enterprises to purchase and lease of software and computer equipment (up to 25% of the cost).

The ways of personnel support proposed for the innovation-based development of the coal industry include: the renewal of the material and technical base

for the sectoral science and training of highly-qualified personnel on the basis of changes in the national legislation on the transfer of the cost from a taxable income; increase of public demand for postgraduate and doctoral studies of technical professions; ongoing training of staff in search of new ideas, research and new technologies.

In the time of the formation of the scientific and technical infrastructure in modern Ukraine it is expedient to:

create cluster structures the operation of which can accelerate the processes of the economic growth, boost the innovative activity and the level of region competitiveness; apply intersectoral cooperation of companies included in the cluster, which promotes job growth, the spread of advanced technologies and the flow of investments into the national economy;

establish the industrial and technological infrastructure (centers for collective use of high-tech equipment, technological clusters, innovation and technology centers and technological parks, innovation-industrial complexes);

introduce consulting activities (foreign economic consulting, technological, marketing consulting, technology transfer centers, consulting in the field of economics and finance);

create a financial infrastructure (guarantee structures and funds, budgetary and extra-budgetary funds for the technological development, venture funds);

form the infrastructure for personnel training (experts in the field of technology management, personnel in innovation);

develop an information infrastructure (regional information networks, resource agencies to support small business, the state system of scientific and technical information).

One of the ways of organizing the form of managing the scientific work in the coal industry is an integrated scientific and technical center "Vuhleinnovatsiya", the implementation of which requires coordinated actions of managers of existing research institutions and their labor groups. Creation of the Center is the first step towards reforming the management of a sectoral science with involvement of research and design institutions.

The effectiveness of the organizational and economic mechanism for managing the innovation-based development of an industrial enterprise is based on: the consistency; involvement of all levels of enterprise's management cycle in the innovation processes; integrity and unity of the management system; formation of long-term fundamentals of innovation policy at the enterprise; introduction of standards system with application of adequate economic sanctions for non-compliance of established requirements; responsibility of enterprise's services for achieving the end result of innovation-based development, increasing interest of

the employees in proactive and strict performance of their duties; adequacy and efficiency of reflection of the mechanism functioning and accounting a maximum number of factors of impact which form the quantitative values of interim and final economic indicators of enterprise's innovation-based development.

The defined directions of innovation-based development of the coal industry will promote the formation of innovation infrastructure, enhancement of the economic, financial incentives and public funding of priority measures to boost innovative activities, creation of an information environment; improve the scientific and regulatory support to the innovation sector of the industry.

Conclusions. Strategy of innovative activities of any industry is a coordinated set of innovative solutions that initially affect the activities of the company (country, industry) and have a long and sometimes difficult to reversible effects. Innovations are of great importance for the country because they determine its potential for a long term development. As a result, these innovations become a strategic driver of the economic growth both of business and the country. In Ukraine, where the coal industry is unprofitable and is characterized by severe and extremely difficult geological conditions of work, the creation of the efficient mechanism to stimulate innovation with the optimal combination of 'automatic' market and direct state regulators is of great importance. In this relation, a considerable work is carried to upgrade and develop the regulatory framework and methodological for achieving a scientific and technological progress in market conditions, taking into account specifics of the industry.

Analysis of the literature shows that there is a two-way relationship between the economic growth and improvement of institutions. In the process of structural economic modernization the institutional changes should be taken into account. If the institutional trajectory is consistent with the resources, technological and institutional constraints, has the mechanisms that provide changes in institutions and prevent the emergence of institutional traps – it will be socially perspective.

The main objectives of the strategy of innovation-based development of the domestic coal industry can be the increase of coal production, enhancement of productivity and safety, improvement of coal quality and reduction of its cost. Proceeding from these objectives, the strategy of innovation-based development of the coal industry should be based on the implementation of the following priority directions:

technical re-equipment of coal production, including the development of technologies for underground mining with a preferential use of mechanized complexes of a new technical level in the stopes, the industrial utilization of coal mine methane;

implementation of measures to enhance the potential and role of the sectoral science according to scientific-technological, design and experimental directions; renewal of the material and technical base of the sectoral science and training highly-qualified scientific personnel.

Conceptual approaches to forming a strategy of innovation-based development of the national coal industry are contained in the current concepts of the development and reform of the industry. The problem is to establish an effective mechanism of their implementation. The use of the above organizational and economic mechanism will provide a comprehensive solution of problems concerning the innovation-based development of the coal industry.

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Драчук Ю. З., Рассуждай Л. М., Трушкіна Н. В. Концептуальні підходи до формування стратегії інноваційного розвитку вугільної промисловості

У статті обґрунтовано концептуальні підходи до формування стратегії інноваційного розвитку національної вугільної промисловості, які полягають у визначенні основ застосування портфельного підходу до управління інноваційними проектами на підприємстві; врахуванні чинників невизначеності й ризику при оцінці інноваційних проектів; державному регулюванні ринкових механізмів у здійсненні інноваційного розвитку вугільної галузі; доведенні доцільності капіталізації вугледобувних підприємств за рахунок модернізації виробництва; активізації інноваційної діяльності на вугільних

підприємствах; тенденціях інституціональних змін в інноваційному розвитку вугільної промисловості; удосконаленні організаційно-економічного механізму управління інноваційним розвитком вугільної промисловості.

Визначено, що стратегія інноваційного розвитку вугільної галузі має базуватися на реалізації таких пріоритетних напрямів: технічне переоснащення вугледобувного виробництва, включаючи забезпечення розвитку технології підземного видобування з переважним використанням у очисних вибоях механізованих комплексів нового технічного рівня, промислову утилізацію шахтного метану; здійснення заходів з підвищення потенціалу та посиленні ролі галузевої науки за науково-технологічними, проектно-конструкторськими і дослідно-експериментальними цілями; відновлення матеріально-технічної бази галузевої науки та підготовка наукових кадрів вищої кваліфікації.

Ключові слова: концептуальні підходи, стратегії, інноваційний розвиток, вугільна промисловість.

Драчук Ю. С., Рассуждай Л. Н., Трушкина Н. В. Концептуальные подходы к формированию стратегии инновационного развития угольной промышленности

В статье обоснованы концептуальные подходы к формированию стратегии инновационного развития национальной угольной промышленности, которые состоят в определении основ применения портфельного подхода к управлению инновационными проектами на предприятии; учете факторов неопределенности и риска при оценке инновационных проектов; государственном регулировании рыночных механизмов при осуществлении инновационного развития угольной отрасли; доведении целесообразности капитализации угледобывающих предприятий за счет модернизации производства; активизации инновационной деятельности на угольных предприятиях; тенденциях институциональных изменений в инновационном развитии угольной промышленности; совершенствовании организационно-экономического механизма управления инновационным развитием угольной промышленности.

Определено, что стратегия инновационного развития угольной отрасли должна базироваться на реализации таких приоритетных направлений: техническое переоснащение угледобывающего производства, включая обеспечение развития технологии

подземной добычи с преимущественным использованием в очистных забоях механизированных комплексов нового технического уровня, промышленную утилизацию шахтного метана; осуществление мероприятий по повышению потенциала и усилению роли отраслевой науки по научно-технологическим, проектно-конструкторским и опытно-экспериментальным целям; обновление материально-технической базы отраслевой науки и подготовка научных кадров высшей квалификации.

Ключевые слова: концептуальные подходы, стратегии, инновационное развитие, угольная промышленность.

Drachuk Yu. Z., Rassuzhday L. M., Trushkina N. V. Conceptual Approaches to Forming a Strategy of Innovation-Based Development of the Coal Industry

The paper substantiates conceptual approaches to forming a strategy of innovation-based development of the national coal industry, which consist in defining the basis for using a portfolio approach to the management of innovation projects at the enterprise; consideration of uncertainty and risk factors when evaluating innovation projects; government regulation of market mechanisms in the implementation of innovation-based development of the coal industry; prove of coal-mining enterprises' capitalization by production modernization; boosting innovative activities in the coal mines; institutional changes in the innovation-based development of the coal industry; improvement of the organizational and economic mechanism for managing the innovation-based development of the coal industry.

It was determined that the strategy of innovation-based development of the coal industry should be based on the implementation of the following priority directions: technical re-equipment of coal production, including the development of underground mining technologies with preferential use of mechanized complexes of a new technological level in the stopes, the industrial utilization of coal mine methane; implementation of measures to enhance the role of the sectoral science for scientific and technological, academic and experimental purposes; renewal of the material and technical base of the sectoral science and training highly-qualified scientific personnel.

Keywords: conceptual approaches, strategy, innovation-based development, coal industry.

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COAL MINING IN SOCIOECONOMIC ASPECT

Arguments in support of the article. It is undoubtedly true that the crisis of the Ukrainian coal industry has become a permanent phenomenon and today it is unrealistic to explain it only with technological or geological problems. Given the fact that the economy is not closed on itself the system, it is immersed in the society, its culture, its own system of relationships. Surely, there is certain autonomy of the economy, but it is incorrect and counterproductive to consider the economy as a system that develops freely. So, amid a significant increase in the level and quality of life in many countries of the world, coal industry, as a source of employment, is becoming increasingly unattractive. Virtually all the economically developed countries, with the exception of Australia and Taiwan, have already abandoned coal as the primary fuel. Much of what happens in economic systems, can be better explained by "external" phenomena.

Review of the literature. In modern conditions of globalization, the development of economy of one particular state can't be carried out separately. The world system sets vectors of development not only on policy but also the state economy as a whole, as well as on various branches. The scientific works devoted to studying of tendencies of changes in the world system of environmental management, technological development, the analysis of a condition the coal industry of Ukraine are written by A.Amosha, L.Starichenko, M.Ilyashov, D.Cherevatskyi, Yu.Yashenko, M.Soldak, A.Yanovskyi, V.Traud, , V.Lyashenko. Researches are dedicated to the influence of social aspects of development of an industrial economy, the region, state, formation of the human capital, socioeconomic identification of conditions of a sustainable development in the works of number of the other scientist

The purpose of the work is to conduct socioeconomic studies designed to reveal the ratio of the impact of economic and social factors on the development of coal mining on the example of the leading Ukrainian metallurgical Corporation "Metinvest", which has coal assets in the US and Ukraine.

Presentation of the main material. For a long time numerous works of domestic scholars with the aim to understand the causes of the degradation of the coal industry [1, 2, 3] and attempts to rectify the situa-

tion made at the government level, have not led to any meaningful results. Experts relate this to the complexity of the mining and geological conditions, deterioration of the mining Fund and the unattractiveness of the industry.

Certain economic relationships in the process of production and distribution, the nature of which every time corresponds to a specific socio-historical conditions, it is possible at the same time to say that these relationships, which are formed in a more or less stable and long-term trends, have no objective reasons to exist and cannot be determined as the laws of development [4, p.16].

Europe has seen a sequence of closures of the coal mines of Belgium in 1992, 1994 - Portugal, in 2005 - France, and the last German mine is expected to terminate its existence in 2018. During Soviet times, such a fate was awaited for Donbass also [5]. But there is an American coal paradox, which in marked contrast to that of the European experience based on the the mining and geological conditions of the national coal production, determines the turnout to be untenable. As expressed by the President and CEO of coal company's world-class Arch Coal, "some companies will leave the market, while others, such as Arch, will reduce the scale of their activities, in hope for improved market conditions" [6]. Mine is the "Maple" (West Virginia, United States, Appalachian basin), having a capacity of 720 thousand tons of coal per year 230 people statewide, is economically inefficient, whereas in Ukraine, such an enterprise would be served by no less than 1.5 thousand men. During the crisis in company Walter Energy the owner of the "Maple" mine was forced to reduce the time of operation of the mine by 30% [7]. And this takes place in a country with exemplary deposits of coal.

Having studied the problems of coal industry of Ukraine for a long time D. Cherevatskyi [8, p. 42] gave an interesting thought that "the domestic economy does not need mines, it needs coal. Coal as a raw material for the steel industry; coal as a fuel for energy. It is in Australia or South Africa, the coal industry is a major source of export, of filling the budget, macroeconomic support". This conclusion is based on the judgment of one of the leaders of the domestic steel busi-

ness I.Siroy, made in 2007: “Metinvest, and other companies with their own coke production, find it more profitable to purchase high-quality Australian coal for \$ 110/t FOB than to invest hundreds of million in the Ukrainian coal mining, which ultimately will cost \$ 90/t” [9].

Consistently pursuing the policy, Metinvest acquired West Virginia coal company called United Coal Company (UCC) which was composed of 4 mines and quarry for the extraction of thermal and coking coal. One of the list is the Affinity Mine, a coal mine founded in 1910-ies but in the last quarter-century was conserved due to unprofitability. “I couldn’t imagine it, - said Danny Bar, Mayor of the city of Sofia (where the mine is located), - that will ever see the Affinity mine working again. But once there was a talk of reopening, a burst of activity began. Now there's a housing boom, and you will not find a vacant land available for rent” [10].

The capacity of restored mine with a newly constructed processing factory is 1.4 million tonnes of coking coal premium class per year. The acquisition of the mine at a cost of Metinvest 900 thousand dollars, whereas investment in the revival of the mine amounted to 115 million dollars. The economic efficiency of a coal project in UCC immediately turned out to be negative. It should be mentioned that by wage rates American miners are a leading category of "Metinvest" (almost \$132 thousand per person per year), which closely follows the Swiss company Metinvest International SA (\$211 thousand/year), but nearly 12 times exceeding the salary of the staff in Ukrainian Mining Division "Metinvest" (about \$11 thousand/year) [11].

In 2012, due to the market conditions, UCC had to reduce the volume of coal production by 4 times from 2 million tonnes to 507 thousand and lay off 325 workers - every fifth employee of an American company, moreover in 2013 halt the production that has already caused massive layoffs [12].

Metinvest as a vertically integrated structure has withstood the economic failures of links located at the base of the pyramid so far. A more difficult situation is in the Russian Corporation Severstal - sale of North American coal business, which may return no more than 40% of its funds invested a few years earlier. It is a vital measure to take for the sake of the holding. The world steel market has up to 500 million tonnes of overcapacity today as the result of the rapid development of industry in the first decade of this century. The serious consequences of the crisis have affected Mechel, the holding company that owns the controlling shares of metallurgical, coal energy companies and ports located in 11 regions of Russia, the United States, Lithuania and Ukraine. It is also the world leader in coking coal production, and the second holder of world coking coal resources. Having said that, purchasing

and active development of Elgin field has not only brought to the bankruptcy carbon but the metallurgical business group too [13].

Another turning issue for Metinvest mines is industrial injuries. Since the ceremonial commissioning of the Affinity complex 16 miners have been injured or killed. Since the beginning of 2013, the Office of labor protection and industrial hygiene in mining USA (MSHA) has found out that 66 cases of security breaches at the mine belonged Metinvest. The Affinity was rendered 68 warnings and imposed a fine of 126 thousand dollars just over one year period.

However, the matter of security at Affinity has always been an issue. In early January 2006 the major accident occurred in the same West Virginia, 13 miners was trapped underground by the explosion of methane. Only one of them managed to survive [14]; April 6, 2010 as the result of the largest explosion at the mine since 1984 in 50 km to the South from Charleston USA 25 people were killed [15], etc. Even the undoubted achievements of American management in the field of safety in the coal industry are not in the strength to completely eliminate the effects of natural and human factors that significantly reduce the attractiveness of the coal business.

In fact, it seems that social processes inherent in the present will further complicate the situation in the coal industry. According to A.Gal'chinskyi “new layers of untapped human energy are not idling in the plain of the new cycle of system’s integration and unification, as this is continuously insisted by some politicians and scientists, but on the opposite flank of the vast expanses of the individual, in the identification of freedom as the impersonation of the real personality. In accordance with this the capacity of large economic groups who typically were placed in the "symbols" of industrialism are weakening. The era of dominance of the "massive" remains in the past” [16, p.8]. This is more than true for coal mine production method which is lifethrening and physically strenuous, far from creativity. The thing that people are now willing to work in underground conditions for the salary they are given (which is 12 times less than that of the miners’ in America), is Path Dependence.

According to one of the residents of the village at the mine in the Central region of Donbass: “Our life is predetermined here: the guys go to the mine, and the girls - to "Styrole" (Ukraine's largest plant for the production of organic fertilizers). Rarely does anyone manage to follow another path.” Such a way of living in the settlements surrounding mines has formed by generations.

However, in the large cities, the propensity to "social comfort", in the words of F.Borodkin, famous Russian socioeconomist, increasingly deters the people from working at the mine. “Until the mid-late twentieth

century the society and mutual relationship among people had always been the tools of economic activity, from families up to the global industrial corporations and States. But then, throughout the lifetime of almost one generation, management became a driver to a comfortable lifestyle" [17, p. 122; 18, p. 145].

This is reflected in increased requirements to the wage rates, working conditions (mechanization), which is the effect of the mythical Ouroboros -Snake that bites itself in the tail: the higher the salary, the more complex and more expensive equipment is, and the stricter security requirements are set, the more expensive coal mining becomes. The social component suppresses the economic one, embosses commercial ground from under the coal business. The same pattern is true for Germany where the highest social and environmental standards drove a German mine to unrecoverable loss. Even the unthinkable high productivity and safe secure technology, is not a lever of economic efficiency, and if it hadn't been for the intervention of the state, the German coal industry would have gone into oblivion long ago.

The inconsistency of Ukrainian coal mining governance has resulted, in society putting "a blind eye" on the phenomenon of "kopanky". A primitive technology, which disregards safety and sanitation, evades tax, paltry salaries, becomes a regular occurrence in depressed regions.

In scientific-academic hearings held in February 2013, Institute of industrial economics of the National Academy of Sciences of Ukraine [19], a famous Collier, doctor of technical Sciences, professor, MP Yuhym Zvyahilskyi emotionally and categorically called 'kopanky' a state-level crime on a large scale. "Somebody carries this coal by the state rail, not on wheelbarrows or cart, -Y.Zvyahilskyi expressed his indignation,- someone sells it by wholesale that someone buys and uses as an energy source, while legal coal has no marketing". The MP expressed the hope that the government is aware of the need to take emergency measures, because the industry is dying. "Kopanky and imports are destroying the domestic coal market."

On the other hand, metallurgists, as mentioned above, do not think and perceive Coal imports only. There are many similarities to the arrangement of the mining settlements in the traditional coal mining regions in Ukraine and the USA. The so-called Coal Camps around American mines is a school, a church, a shop, a theater, a modest accommodation. The same is in Ukraine - only until recent times churches were not apart of it, and the theater was called the culture centre.

With the onset of the crisis in the coal industry and mine closure villages get deserted in both countries. The closer the mine is to the large city, the more houses are abandoned. Some of them turn into ruins. Whole areas become zones of environmental neglect

and man-made disasters. Such situations are a common feature of old-industrial region of Ukraine, not only in the Donbas.

Conclusion. The relevance of these studies is to expand the American coal paradox, important for understanding the essence of the development of coal mining industries at the present stage of the global economy. The submissions of research carried out on the example Corporation "Metinvest", which has coal assets in the Donbas and in the Appalachian (United States), indicate that the social factor in the progress of negative processes is greater than the natural conditions of the fields. The economy cannot withstand the social burden and resolving this contradiction should be the central objective of socio-economic studies of the immediate future.

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Залознова Ю. С. Вугледобуток у соціо-економічному аспекті

Розглянуто співвідношення економічних і соціальних факторів у розвитку вугледобутку на прикладі вертикально-інтегрованих компаній. Наведено відмінності вітчизняних та зарубіжних активів. Розкрито сутність процесів розвитку вугледобувних галузей на сучасному етапі існування світового економічного господарства. Оцінено

вплив соціоекономічних аспектів, що пояснюють американський вугільний парадокс.

Ключові слова: вугільний парадокс, соціальні процеси, криза, вугільна промисловість, вертикально-інтегрований холдинг, соціоекономіка.

Залознова Ю. С. Угледобыча в социэкономическом аспекте

Рассмотрено соотношение экономических и социальных факторов в развитии угледобычи на примере вертикально-интегрированных компаний. Даются различия отечественных, и зарубежных активов. Раскрыта сущность процессов развития угледобывающих отраслей на современном этапе существования мирового экономического хозяйства. Оценено влияние социэкономических аспектов объясняющих американский угольный парадокс.

Ключевые слова: угольный парадокс, социальные процессы, кризис, угольная промышленность, вертикально-интегрированный холдинг, социэкономика.

Zaloznova Yu. S. Coal Mining in Socioeconomic Aspect

The article investigate the correlation of economic and social factors in the development of coal mining on example of vertically integrated companies with both domestic and foreign assets. The effect of socioeconomic aspects which have led to the American paradox of coal is studied to understand the essence of the coal mining industry at the present stage of the global economic management.

Keywords: coal paradox, social processes, the crisis, coal industry, vertically integrated holding company, socioeconomics.

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SCIENTIFIC BASIS OF HUMAN DEVELOPMENT STATE ADMINISTRATION IN UKRAINE¹

Background. Development of the polity "life in a new way" through the introduction of PPB system (Prediction, Programming, Budgeting) of human development in socio-economic terms, the regions and the country as a whole, involves the formation of the scientific and educational and staffing mechanism of governance at the national and regional levels.

Scientific achievements of the Economic Research Institute of the Ministry of Economic Development and Trade of Ukraine, the Research Institute of the State financial educational and scientific institutions "Academy of Financial Management" of the Ministry of Finance of Ukraine, the private higher education institution "Bukovynskiy University", V.I. Vernadsky Institute of Natural Economy, S.A. Podolsky Institute of Physical Economy allows us to generalize the recommendations and proposals for the formation of scientific and educational and staffing functions, procedures and processes of "life in a new way" state administration during the years of independence.

Problem. The article is a rationale for the establishment of the state educational and scientific institution, the Academy of Economic Administration, based on the Economic Research Institute. It is also considered to be a part of the Department of Economics of the National Academy of Sciences of Ukraine and directly subordinated to the Cabinet of Ministers of Ukraine (compared to the Academy of Financial Management, established within the Research Institute of the Ministry of Finance of Ukraine, and to obtain a dual subordination – both to the Ministry mentioned above and to the Department of Economics of the National Academy of Sciences of Ukraine).

Academy of Economic Management is able to implement:

1. Introduction, improvement and development of current scientific methods of National and Regional human development formation programs developed by the Department of Economics of the National Academy of Sciences of Ukraine in the system long, medium and short-term forecasts, programs and plans for socio-economic development at the national and regional levels.

2. The National and Regional human development programs monitoring of state administrative divisions

and applied theme of Masters Dissertations and research recommendations.

3. The proposals justification for further system scientific researches of economic and statistical indicators, social norms, human development norms and standards of their reference values for each region and for the country as a whole.

Main material. The Economic Research Institute (ERI) was established in March 1961 as a major research institution in the field of spatial planning methodology for comprehensive economic and social development of the republic and its regions in Ukraine and among former Soviet Union republics.

It is particularly deserved to pay special attention to the following comment on doubled sector model of economic management of Ukraine established in the Economic Research Institute and includes a mechanism for coordination of national, sectoral, regional and individual reproductive processes (V.F. Stolyarov, V.M. Ilyin, V.S. Fedorenko, V.P. Kryvoborodenko) [4-6]. Today this model is valid in the Chinese economy.

In this model, the public sector is the first one to incorporate various forms of state control ownership in all reproductive processes through the development and implementation of Prediction, Programming, social and economic development administration planning of regions, districts, villages, towns and the state as a whole. The model first sector is identical to only state ownership, and provides the introduction of public-private partnership elements based on the principles of social responsibility.

The second one in this model is to be a casual sector of the national economy state managing and includes enterprises, firms, organizations and businesses which activities in terms of deployment of market relations in the production of goods or services are not regulated by the specified above Prediction, Programming and Planning. That is a sector of free enterprise.

Owing to this methodological approach to the state management it was ensured a consistent evolutionary transition from the administrative-command system of planned management to state regulation of social and economic development in a market economy. A proportionality of sector model of a ("public" and "free enterprise") have changed sequentially,

¹ Shinkaryuk, O. V. (2014, Jan 15). State administration formation of regional human development in Ukraine. (Z. Čekerevac, Ed.) MEST Journal, 3(1), 104-113. doi:10.12709/mest.03.03.01.12.

simultaneously with the development of market relations, ensuring integrity, self-organization and stability of the national economy as an organic unity at the national socio-economic system.

It would be advisable to use advanced position of doubled sector economic model for the formation of the polity "life in a new way" in the Research Institute of the State financial educational and scientific institutions "Academy of Financial Management" of the Ministry of Finance of Ukraine:

- Identities multiculturalism recognition ownership in the structure of the public sector of the national economy;
- Addition to national economy focus (external influence of state regulator) with its desire to achieve goals (an intrinsic property of the national economy);
- State influence mainly in the area of scientific and technological potential of the model first sector;
- Differentiated development of social norms;
- Socio-economic development transformation of in public procurement;
- Complex construction of the national economy in aggregate economic Matrix density (characterizes the distribution of social labor in the economic space of probabilities that determine the density of the distribution) and state regulators;
- The separation of powers between Center and local government as the basis for the coordination of the entire national economy with the development of local economies;
- The scope of innovation determination and planning of the necessary specialists (scientific and practical), their rational allocation by social norms on human labor and other territories.

Accelerated implementation Anglo-Saxon model "shock without therapy" in the transition from a planned economy to a market one in Ukraine led to the productive capacity of the economy and of Ukrainian people logistics lifestyle destruction, and as a result - the spiritual structure of all segments of the Ukrainian society.

We can assume that the geopolitical forming scenario of the "golden billion" humanity on Earth is actually implemented and continues to be implemented in Ukraine. In the early years of the market economy introduction a domestic economic science was excluded from the training procedures and the decision making on strategic management of the national economy with elements of planning.

The Revolution of Dignity in Ukraine oriented the society to the indispensable epistemological analysis and synthesis of spiritual and ideological components of own socio-cultural nature of the Ukrainian people with the best achievements of mankind.

The fundamental basis of the "life in a new way" polity are organic components of the national system of the Ukrainian society values and the current under-

standing of the areas of sustainable human development ("Nature's Wisdom"), which, in their turn, are based on philosophical and ideological ideas of outstanding Ukrainians S.A. Podolinsky and V.I. Vernadsky¹.

That is, the state administration formation of the "life in a new way" in Ukraine through the use of the Human Development Concept becomes a global mission of our country. It becomes possible to make only after reviewing the role and place of national economics in the development of Ukrainian society.

And nowadays it is the establishing the State financial educational and scientific institutions (SFESI) "Academy of economic administration» at the Economic Research Institute of the Ministry of Economic Development and Trade of Ukraine in the Department of Economics and the National Academy of Sciences and directly subordinated to the Cabinet of Ministers of Ukraine. The Academy of economic administration should not only have The Scientific Research Plan (SRP) but also the plan of the SRP results implementation conducted by the Institute of the Department of Economics of the National Academy of Sciences of Ukraine (NASU) as well as recommendations based on the results of universities, master's and doctoral research and scientific institutions of the Ministry of Education and Science of Ukraine in the social sphere, based on National and Regional programs of human development.

The Economic Research Institute (ERI) initiative for the Academy of Economic Studies establishment in 1993-1994 was the impetus for the establishment of the State educational and scientific institution (SESI) "Institute of Economics and Forecasting", directly subordinated to the Cabinet of Ministers of Ukraine, in the first stage, (Decree of to the Cabinet of Ministers of Ukraine since 19.07. 1997 № 772"On the establishment of the Institute of Economic Forecasting"), and then, the National Academy of Sciences of Ukraine (NASU) (Decree of the Presidium of NASU since 09.05.1997, № 298).

If the Academy of Economic Studies at the Economic Research Institute (ERI) of former State Planning Committee of Ukraine (directly subordinated to the Cabinet of Ministers of Ukraine and incorporated into the Department of Economics of the National Academy of Sciences of Ukraine (NASU)) with its wider authority and responsibility governance toward socio-economic impact assessment of the Government and the President of Ukraine Decrees had been established earlier, some of the decrees would have been

¹ The continuation. The beginning see : Shinkaryuk, O. V. (2014, Jan 15). State administration formation of regional human development in Ukraine. (Z. Čekerevac, Ed.) MEST Journal, 3(1), 104-113. doi:10.12709/mest.03.03.01.12

refined or even wouldn't have been accepted (similar with scientific assessment of socio-economic impact of Laws of Ukraine enactment by Verkhovna Rada of Ukraine specialized unit, the Chief Scientific Expert Department). The former employees of The Economic Research Institute (ERI) as well as of The National Security and Defense Council of Ukraine became the employees of the Chief Scientific Expert Department.

The development of the Programs of development or specific sectors reforming of national economy is appropriate to entrust to the State financial educational and scientific institutions (SFESI) "The Institute of Economics and Forecasting", which, in addition to their own, prepares consolidated national reports based on local papers of all Institutes of Economics Department of NASU. And also these Programs of development or specific sectors reforming of national economy should not only be entrusted to experts, consultants and experts from various skill levels and different scientific schools that practiced in the past in the Cabinet of Ministers of Ukraine and the Administration of the President of Ukraine. Their state projects should be estimated also by specialists of the Institute of Economics and the Bureau of National Academy of Sciences.

For example, in 2010, after the publication program of NASU academician Valeriy Heyets "Liberal democratic foundations: a course on modernization of Ukraine" [9] the State financial educational and scientific institutions (SFESI) "The Institute of Economics and Forecasting" prepared the National Report "The New Deal: the reform in Ukraine. 2010-2015 " [10] and the annual President of Ukraine Proclamation to the Verkhovna Rada of Ukraine "Modernization of Ukraine is our strategic choice" was based on the materials of this report [11].

In turn, the Institute of Industrial Economics (NASU) (Donetsk) has developed scientific methods of monitoring the stages and processes of modernization of Ukraine and its economic regions based on the experience of China [12]. All mentioned above has increased the scientific management level of the national economy for sustainable development.

In addition to these important documents of state influence on the socio-economic development of regions and Ukraine as a whole, the Institutions of Economics Department (NASU) should develop the projects of the State comprehensive reform programs of the national economy (O.S.Yemelyanov [2]) that, after review by The National Security and Defense Council of Ukraine, have been adopted on a joint session of the Verkhovna Rada of Ukraine, the Cabinet of Ministers of Ukraine and the President of Ukraine (with the participation of the Bureau of Economics NASU), based on scientific expertise specialists of the Institute for Strategic Studies and the Institute of legislation of the

Verkhovna Rada of Ukraine) and public discussion (including the participation of foreign experts).

With the change of Government and the President of Ukraine it has to be maintained a strategic course of the national economy reforming, without the new radical reform usage of "shock therapy", it should be kept the leading components of the institutional mechanism of its methodological support (this part was recently the Committee on Economic Reforms under the President of Ukraine) [13].

Based on the objectives of integrated programs in the context of the polity "life in a new way," Cabinet of Ministers of Ukraine shall conduct to clarify the quantity, structure, functions of staffing number of ministries and departments of the socio-economic profile, sufficient for the development and implementation of programs and plans for socio-economic development of Ukraine and its regions, in which national and regional programs of human development would have been the leading element, and their routines with a set of appropriate measures in education, health care, pension and social security, etc. would have been the objects of reform. However, the reforms in education and health must be made according to the criteria of indices increase of national and regional human development, not from the standpoint of minimization of state and local budgets for their operation. Failure in the state to regulate the processes of socio-economic development and the country could lead to deterioration of the National and Regional Human Development Indices.

National reports and projects of Government Action Programs and annual President of Ukraine Proclamation to the Verkhovna Rada of Ukraine are also advisable to be prepared as forecast-analytical construction materials of all the Institutions of Economics Department (NASU). It is in these materials the projects of new Government Actions may be presented, such as the introduction of PPB system (Prediction, Programming, Budgeting) of human development through the development of National and Regional Programs based on the principles and provisions of fiscal federalism that requires the establishment of Chief Research Institute of socio-economic profile of these issues at the Economic Research Institute of the Ministry of Economic Development and Trade of Ukraine.

Conclusions. In the eve of the 50th anniversary The Economic Research Institute (ERI) clarified its mission, which is to be the informational, analytical and scientific support of the Ministry of Economic Development and Trade of Ukraine in the development and implementation of economic policy and with an aim to improve the market economy, ensuring its functioning, improving the level and quality of life on this basis, promoting socio development.

The Economic Research Institute (ERI) strategic aim is to acquire and consolidate the informal status of the leading scientific institution in Ukraine to develop a methodology for strategic planning, information, methodological and organizational support of economic and social development programs at the macro and meso level, the formation of economic policy measures and their implementation mechanism [15].

The Institute science activity is carried out to the primary and secondary thematic The Economic Research Institute (ERI) research plan, formed on the basis of the relevant contracts and agreements with the Ministry of Economic Development and Trade of Ukraine and other organizations.

The main thematic plan problems are defined by tasks of the Ministry of Economic Development and Trade of Ukraine for the development and implementation of state economic policy of Ukraine in the following areas [16]:

1. A comprehensive analysis of the economy main trends (by institutional sectors and markets).
2. Modeling of economic development.
3. Methodological principles for the development of strategic and program documents of economic and social development of the country and regions.
4. Tools of strategic and program documents implementing of economic and social development.
5. Monitoring of economic and social development of Ukraine.

The Institute actively collaborates with the Cabinet of Ministers of Ukraine, the standing committees of the Verkhovna Rada of Ukraine, Ministries and Departments, regional authorities, the National Academy of Sciences of Ukraine.

The Economic Research Institute (ERI) doctoral studies are engaged in academic training for central and local authorities, local governments, research institutions and other economics. All graduate students, doctoral students and scientific degree applicants are assigned to the relevant departments of the Institute and are directly involved in the implementation of planned research on topical issues of development of Ukraine.

The specialized Academic Council for the Protection of theses on specialties 08.00.03 "Economics and management of national economy" and 08.00.08 "Money, Finance and Credit" is presented in the Economic Research Institute (ERI). Leadership of the Institute has provided the priority development of its own scientific methods of strategic planning based on the needs of institutionalization of state of the national economy in the future.

The Economic Research Institute (ERI) is able to start the work on the "Scheduled Code of Ukraine" (similar to the Budget Code of Ukraine) with 30 years of fruitful collaboration with the former State Planning Committee (Gosplan) of Ukraine, and considerable

library collection and archive of research papers on methodology of current, medium-term and long-term planning.

В 2011 році, крім здійснення планових досліджень, Інститутом було підготовлено та передано до центральних органів державної влади ряд доповідних записок, рекомендацій та інших матеріалів. Серед них слід відзначити:

In 2011, in addition to the implementation of planned research, the Institute has prepared and submitted to the central government a number of memoranda, recommendations and other materials. Among them should be noted:

- Proposals to improve the project of Law of Ukraine "On state strategic planning";
- Analytical materials for Consensus forecast "Ukraine: Prospects for Development";
- A set of analytical materials on import substitution policy and its possible implementation in Ukraine;
- Proposals to improve the mechanisms of long-term lending to the real sector and households;
- Information on the current status and trends of investment and production of high and medium technology industries in Ukraine in 1998-2009 pp.;
- Proposal of a plan to the State's policy to change the structure of the real economy, to increase the technological level of production and increase the share of manufacturing, focusing on the domestic market;
- Policy Brief overview of the general trends and results of operation in Ukraine for special (free) economic zones and territories of priority development with special investment regime.

The Economic Research Institute (ERI) with the Ministry of Economic Development and Trade of Ukraine created a unique state document based on Prognosis of integrated development of the national economy and social sphere for the first time since independence, in 2011. Unfortunately, the project of the State Economic and Social Development of Ukraine for 2012 objectively caused rapid adjustment of the State Budget of Ukraine for 2012, which was directly connected with the objectives for its implementation ("Market needs help ...of the former State Planning Committee (Gosplan)" [2 p. 53]).

That is, the State Program of economic and social development of Ukraine and the State Budget of Ukraine should be treated as a single government document that contains a set of planning guidelines and address problems of development macroeconomics, industries, regions and departments and supported the definition of specific terms of their implementation of responsible and targeted on specific issues, while the forming the polity "life in a new way".

Scientific and methodological support to achieve an whole forecasting, planning and budgeting of hu-

man development at the national and regional level can provide the Economic Research Institute (ERI) to be part of the Institutes of Economics Department of NASU and be subordinated to the Cabinet of Ministers of Ukraine.

Organizing its activities as Chief Research Institute of socio-economic profile, the Research Institute of the State financial educational and scientific institutions "Academy of Financial Management" of the Ministry of Finance of Ukraine should make joint mid-term Scientific research work plans with the State Institution "Research Institute of industrial relations" at the Ministry of Social Policy of Ukraine, with the State Enterprise "Scientific and Technical Complex statistical Research" (Institute of Statistics and Research and Design Institute of Statistic Technology) at the State Statistics Service of Ukraine and the Institute of legislation of the Verkhovna Rada of Ukraine.

In terms of the development of the polity "life in a new way" it is appropriate to put the functional approach in the foundation of ministries and departments of the socio-economic profile and to determine their powers (rights and responsibilities) according to the processes and procedures for national and regional human development programs. These programs must be central (top chains) while forming the state programs and plans for socio-economic development and regional, state and local budgets Ukraine.

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Шинкарюк О. В. Наукові основи державного управління людським розвитком в Україні

В статті на основі розкриття ролі та місця Науково-дослідного економічного інституту (НДЕІ) колишнього Держплану України в управлінні народним господарством розкрито роль та місце вітчизняної економічної науки в науково-методичному забезпеченні державного впливу на соціально-економічний розвиток держави та регіонів. Обґрунтовано доцільність створення ДННУ «Академія економічного управління». Визначені напрями та завдання діяльності Академії щодо формування науково-освітняського забезпечення механізму

державного управління «життям по-новому» в Україні.

Ключові слова: механізм, економіка, управління, забезпечення, координація, національний, регіональний.

Шинкарюк О. В. Научные основы государственного управления человеческим развитием в Украине

В статье на основе раскрытия роли и места Научно-исследовательского экономического института (НИЭИ) бывшего Госплана Украины в управлении народным хозяйством раскрыта роль и место отечественной экономической науки в научно-методическом обеспечении государственного воздействия на социально-экономическое развитие государства и регионов. Обоснована целесообразность создания ГУНУ «Академия экономического управления». Определены направления и задачи деятельности Академии по формированию научно-образовательного обеспечения механизма государственного управления «жизнь по-новому» в Украине.

Ключевые слова: механизм, экономика, управление, обеспечение, координация, национальный, региональный.

Shinkaryuk O. V. Scientific Basic of Human Development State Administration in Ukraine

On the basis of the disclosure of the role and place of the Research Economic Institute (INAH) of the former State Planning Committee of Ukraine the role and place of national economic science in the scientific and methodological support of state influence on the socio-economic development of the state and regions. The expediency of the creation of the mode of "Academy of Economic Management" is disclosed. The directions and objectives of the Academy on the formation of scientific and educational governance provision which may be called "life in a new way" in Ukraine.

Keywords: mechanism, economics, management, maintenance, coordination, national, regional.

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THE OPTIMIZATION MODEL OF WORKING TIME FUND ALLOCATION IN THE THEORY OF MARGINAL UTILITY

Today Ukrainian economy is in the state of severe crisis. The hopes of the 1990s for the thriving market economy failed. The attempts to put the state economy on market platform, to privatize state-owned enterprises, to liberalize prices were all vain. Different political forces have always tried to promote their successful

economic policy when proclaiming rapid growth of state economy in their time. But the long-run comparative study leads to deplorable results. Comparative sampling statistics on selective economic sectors over the period of 1970-2010 [1,2] bear witness to the economic hardship of Ukrainian (see Table 1).

Table 1

Selective commodity production output in Ukraine over the period of 1970-2010

Commodity list	Unit of measurement	Years				
		1970	1980	1990	2000	2010
Electrical power generation	billion kWh	137,6	236,0	298,5	171,4	188,8
Iron ore and concentrates output	million tons	111,0	125,0	105,0	55,9	78,5
Flour production	thousand tons	7526	7485	7671	3076	2632
Iron production	million tons	41,4	46,5	44,9	25,7	27,4
Steel production	million tons	46,2	49,9	48,5	25,8	17,5
Agricultural sector tractors production	thousand units	148	136	106	4,0	5,2

The data analysis in Table 1 shows that the economic collapse in Ukraine in the late 1990s had disastrous consequences. Those losses have not been covered yet. Despite the positive dynamic of the production output in Ukraine over the past ten years, Ukrainian economy has not reached the level of maturity of 1970-80s yet.

The given situation provokes scientists-economists into analyzing the causes of the economic emergency state along with the ways to overcome this crisis. The following causes are given: major blunders in home and foreign policies (including economic policy) made by the government and the head of the state, the lack of investment, economic and political instability, ineffective legislative and regulatory framework etc. The given conclusion has reasonable grounds. The results of the analysis are to logically lead to the search of realistic well-grounded ways out of the situation. In this regard the scientists and politicians are not unanimous as for the solution.

One of the causes of unsatisfactory economic state is due to the ignorance about low workforce productiv-

ity and the absence of the relative incentive mechanism. In spite of the extensive scientific research into this problem, the comprehensive management of labour concept has not been developed to perfectly fit into Ukrainian market environment. The existing foreign experience does not demonstrate the single approach to solve the problem albeit the developed countries achieved much more results in tackling the questions of well-grounded standards of wages and social security. This statement is supported by the data of Table 2. The countries under analysis were chosen according to the compatibility of the number of their population (except for the Russian Federation). The low remuneration of labour rate in Ukraine to a great extent comes from the low level of workforce productivity and the high level of energy and material consumption in the industries.

Despite the above said selective analysis of the relative figures in Ukraine and developed countries (Table 3) shows that developed countries outperform Ukraine by remuneration of labour rate.

Comparative figures in Ukraine and developed countries over 2010

Countries	Population, million people	Unemployment rate %	GDP per person, US dollar	Salary, US dollar
Ukraine	45,7	8,1	6055	282,2
The United Kingdom	62,2	7,8	32459	3930,4 ¹
Spain	46,1	20,1	26967	3059,6 ¹
Italy	60,5	8,4	27081	3200,2 ¹
Canada	34,1	8,0	35445	3590,4
Poland	38,2	9,6	17342	1069,9
France	64,9	9,7	29598	4001,2 ¹
The Russian Federation	141,8	7,5	14166	698,5

¹ – according to 2009 [2].

Relative GDP figures and salaries in different countries in 2010

Countries	Relative excess GDP per person	Relative excess of salary of an employee
Ukraine	1,00	1,00
The United Kingdom	5,36	13,93
Spain	4,45	10,8
Italy	4,47	11,34
Canada	5,85	12,72
Poland	2,86	3,79
France	4,89	14,18
The Russian Federation	2,34	2,47

Table 3 makes it clear that the excess of employee's salary significantly outruns the figure of the excess of GDP per person in the majority of the developed countries. In the United Kingdom the GDP rate per person is 5,36 times more than in Ukraine and as far as the salary rate concerns, the excess comes to 13,93. Poland and the Russian Federation have the smallest differences as the post-soviet states undergo similar problems and tendencies when establishing market economy. To a large extent the given problem has the nature of "vicious circle": the low remuneration of labour rate leads to the low workforce productivity and vice versa the low workforce productivity gives no chance to salary growth. Consequently the problem of effective incentive for the staff productivity under the market-based circumstances is critical for Ukrainian economy. The author suggests solving that problem by means of the theory of marginal utility.

The theory of marginal utility appeared at the end of the 19th century. This theory contradicted the fundamental principles of the the labour theory of value by K. Marx. Scientific research conducted in this direction was characterized by soviet ideologists as "apologetic", "bourgeois", "vulgar" and "pseudoscientific". That attitude undergoes sustainable change, and the works by Carl Menger, Eugen von Böhm Bawerk, Friedrich von Wieser, Joseph Schumpeter, Antuan Auguste

Walras, Alfred Marshall and other scientists become the benchmarks for the research of our scientists-economists. In Ukraine the methodological issues of the theory of marginal utility have been lately in focus of S.V.Glivenko [3], I.D.Pogorelovska [4], N.N.Ivanov [5], I.V.Golovataya [6, 7], Y.V.Petrovskaya [8], A.M.Zaytseva [9], M.I.Kernitskaya [10], M.M.Artus [11,12], M.F.Goncharenko [13], I.V.Pinchuk [14] and others. Still the potential of the theory of marginal utility is not currently used in full swing. First of all it concerns practical issues.

There is no doubt that the theory of marginal utility is not a perfect instrument and has some obvious disadvantages to work on. The theory of marginal utility has yet to tackle the questions that have been previously ignored by Marxist economics. These are the following questions:

1. Classic barter trade on the market platform is voluntary-driven partnership model. If according to the labour theory of value only the commodity of equal value can be the subject to barter, then we ask: "Why does this barter take place?". Karl Marx deviated from that question himself, believing that "The use values of the commodity make the subject to special discipline – commodity science" [15]. The given statement makes the process of use value assessment on market platform almost useless. Having assessed all the labour results,

it is possible to define the “real” (or socially necessary) value of commodity, but we cannot answer the question if the customer going to buy this commodity. On condition of waiting for the “market recognition” of the commodity the assessment of labour value of the commodity loses its significance. At the same time the theory of marginal utility makes it possible to achieve so called “demand curves”.

2. The statement of barter trade on equal value basis does not explain the mechanism of setting monopoly price from the economic perspective. Despite the fact that the theory of pricing under monopoly is studied by economics in detail, one of the questions is still on the table: “Why do some consumers refuse to buy commodity at monopoly price and why is this price acceptable to the others?” Only the theory of marginal utility has the answer to this question.

3. Labour theory of value presupposes that during the employment the capitalist acquires the commodity of special type – workforce. At the same time the question of the intensive use of this commodity (the question of intensive labour) is completely ignored. Rejecting all the contrary points of view in the theory, Marxist economics was yet bound to acknowledge the importance of incentive mechanisms. The assumption that wages are the price of labour but not of the workforce has been interpreted as sacrilege. At the same time the theory of marginal utility has sufficient theoretical basis to prove the relation between the salary rate and the rate of workforce productivity.

The classic economics has not had the unanimous approach in tackling the contradictory question of effective staff motivation. There is no single defined and shaped opinion on this issue in classic economic study as well as among the modern scientists. We can single out several streams in the works of prominent authors:

1. Adam Smith (1723-1790) focuses on the differences between piece wages and time wages in his work «An inquiry into the nature and causes of the wealth of nations» (1776) in chapter 8 of the Book 1, dedicated to the questions of wages and salaries, he describes the situations, when profitable piece wages stimulate workmen so that they exhaust themselves with work and “are very apt to overwork themselves, and to ruin their health and constitution in a few years.” [16, P.75]. That insight brought Smith to the conclusion that time wages are more preferable as the workman gets fixed wages for previously determined task. That Smith’s assumption may yet be regarded as contradictory from the point of view of work overloads liquidation.

2. Frederick Winslow Taylor (1856 –1915) was one of the first management consultants and pioneers of scientific management. In his work “The Principles of Scientific Management”, Taylor cast the new light on the contrary tendency, which he called “soldiering” [17, P.226-236]. That was common practice that took place when the workmen were “deliberately working

slowly so as to avoid doing a full day's work” [17, C.227]. It is quite transparent in his work that Taylor highly doubts the effective monitoring of the management in order to liquidate the “loafing or soldiering” tendency. Taylor gives the illustrative answer of some master when monitoring the site “Well, I can keep them from sitting down, but the devil can't make them get a move on while they are at work!” [17, P.231]. This way Taylor admitted that without motivation workers would always slow down the productive capacity of work.

3. Max Weber (1864-1920) in his work “The Protestant Ethic and the Spirit of Capitalism” (1905) shows the differences in the attitudes of separate workers: either to be extremely devoted to their craft and earn a lot or to earn enough to satisfy their traditionally established needs [18, P.80-81]. In Weber’s opinion the attitude of the workman to labour is dictated by inner ethical, cultural and religious factors: the Protestants, being under their religious beliefs, meet the needs of capitalistic society. That is why Protestant descendants are more successful in business. Statistical data supports Weber’s view and gives his position reasonable ground. At the same time Tom Bethel provides numerous facts that disapprove the priority of institute of religion. Bethel gives the institute of property the primary position under the conditions of market economy and he is very persuasive stating that under the equal conditions enterprise and organization, established on the basis of collective property, are less effective than private enterprises [19, P.51-65].

The defined problems were given careful study both by foreign and “home” scientists. Significant results were achieved when tackling the problems that occurred under different conditions. One of the results of the research on this platform was the assumption of the absence of a universal method. It means that the solvation of particular problems and the generation of the relevant practical recommendations can be realized on the scientific basis but have its individual nature.

The basic tasks of the present article are the following:

- the analysis and the grounds of the possibility and rationale to apply the theory of marginal utility in order to give the reason to wise allocation of the resources (time in particular) for achieving maximum utility;
- the analysis of the optimization of the working day time in the context of the theory of marginal utility;
- the development of the model to apply the theory of marginal utility when performing the tasks to optimize time allocation;
- the approbation of the developed model under real conditions.

The basic idea of the research given in the article can be formulated the following way. The process of

the employment can be overlooked as a certain act of the resources (commodity) exchange and each of them has particular value for a person: a person exchanges a piece of his spare time (which has its value) for some material reward (which also has its value). Standing on the ground of the theory of marginal utility it is possible to state that the given exchange is possible till the total utility of spare time exceeds the utility of total money reward. It means that one can define the optimal allocation of total daily time fund of a person where the total utility of the labour reward and the useful time left will be maximal.

The author makes the following assumptions during the research:

1. It is admitted in the classic the theory of marginal utility that the marginal utility lessens with yet another item of benefit. Despite that the statement is not correct enough. For the majority of the material benefits the marginal utility of the benefit initially grows and then goes down. That is why it is more reasonable to apply the quadratic but not the linear dependence for the mathematical description of the total utility of the benefit. The application of the quadratic dependence explains the fact that the unlimited use of the benefits provokes the total result of this use (utility) to fall rather than grow (benefit excesses do harm). The application of the linear dependence makes the mathematical tools of the analyzed models less complicated. In that case one should previously agree on the admissible determination domain i.e. the interval of argument range where utility function can be regarded as linear dependence.

2. When the process of the exchange of spare time for the labour reward is considered, it is important to keep it in mind that to ensure the minimal level of physiological survival man needs some minimum of primary benefits. He needs time to sleep and money to meet immediate life demands (food, accommodation). In this regard when conducting the research it is necessary to exclude this time from the model for the sake of its accuracy. The given assumption leads to the critical conclusion that the utility of one and the same benefit cannot be overlooked on the whole scale of its use.

3. When considering the "value" of working time it is indispensable to take into account the intensification of a working process that in its turn leads to the change of workforce productivity.

The labour theory of value focuses on two types of labour: simple and complicated. Certain amount of complicated labour can be treated as equal by its value to certain bigger amount of simple labour.

The cost of an hour of a complicated labour grew on account of training and preparation etc. The experience admits the influence of different types of motivation when one and the same person performs his task more or less actively. We should bear in mind the fact that the modern economy has different industrial pro-

cesses that can be divided into two groups according to this quality:

1) the processes that accept the intensification of industrial process;

2) the processes that do not accept the intensification of workforce labour exploitation.

4. The given article focuses exclusively on the situation of hired labour. This restriction makes it possible for the research to cut any other institutes (property, cooperation, corporate management etc), that can affect basic factors, influencing the value of the resources under analysis: option of extra benefit, option to invest some amount of money the employee earned, the intensification of the labour.

5. Quadratic form of the dependence of marginal utility is satisfactory only for such types of benefits that can be regarded as primary (or vital). At the same time some types of the secondary benefits that have social nature cannot be described with the help of quadratic equations. The utility of such types of benefits is constantly on the increase and at the same time the speed of utility is constantly on the decrease.

The present article focuses on the optimization of the daily time fund allocation of one person for the following sectors: sleep, rest (spare time), and the work aiming at labour reward. The modeling of the utility function of the benefits under analysis was presented by the following functions:

1. Sleep utility function:

$$U_s = 25 \cdot x - 1,56 \cdot x^2 \quad (1)$$

2. Rest utility function:

$$U_r = 12,5 \cdot x - 0,39 \cdot x^2 \quad (2)$$

3. Wages utility function:

$$U_w = \frac{100}{1 + e^{T-x}} \quad (3)$$

x – time, that a person spends to receive certain type of benefit;

t – active time when an employee earns minimum living wages.

Dependences (1)-(3) are presented below on Fig. 1.

Graph 1 illustrates the dependence that has particular qualities:

1. Sleep utility function and rest utility function are presented in the form of quadratic dependences. For such benefit like sleep, maximum of the benefit utility (100%) is reached at $t=8$ h and maximum of rest benefit utility is reached at $t=16$ h. There is no doubt that the given figures for separate people can change, but the model gives average figures.

2. Wages utility function is presented by sigmoid (logistic curve) and t value was taken equal from 1 to 16 hours in other words the workforce productivity level can vary in significant range.

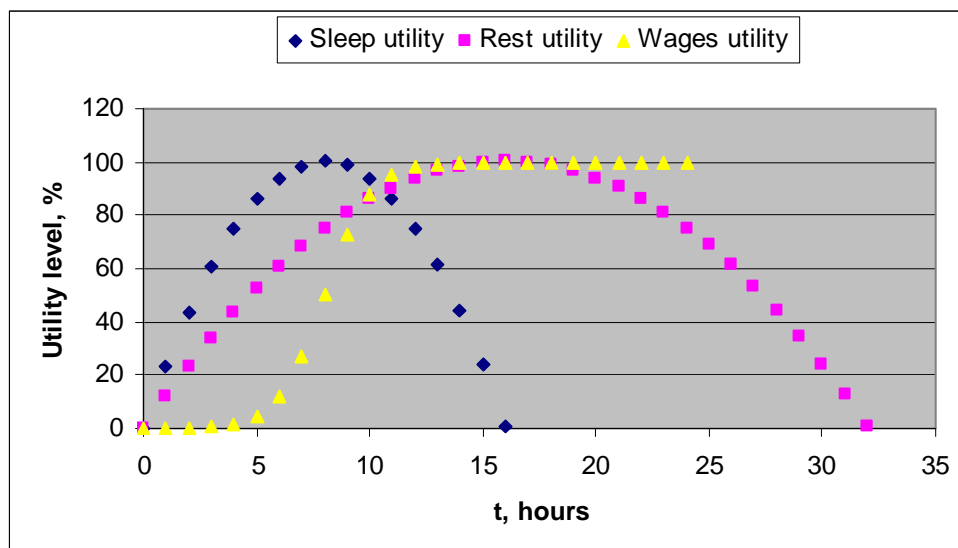


Fig 1. Dependences of the utility level of different types of benefits

The above given model is the result of optimization calculations performed in Excel spreadsheets. Here we solve the task of the maximization of the total integrated utility for a person at common daily time fund restriction of 24 hours. Table 4 and Fig. 2 illustrate the results of the calculations. The following conclusions can be drawn on the basis of Table 4 and Fig. 2:

- at the maximum utility level equal to 300, the achieved utility will be less, that is explained by the 24-hour restriction of daily time fund;
- the optimal working time of one employee always exceed the active time that covers minimum standard of living;

- the optimal sleep time along with the optimal spare time grow progressively as the workforce productivity grows;

- in case of low workforce productivity optimal sleep time and optimal rest time are reallocated in favour of sleep (this conclusion does not contradict the reality as it is).

The research covered in the article resulted in the following conclusions:

1. The research given in the article is grounded on the statistical average data. Actual value of the recommendations will be much higher, if the analogous research is conducted for different categories of employees with the identified wages rate. Analogous approach can be also applied to the environments of the selected sectors and enterprises.

Table 4

**The variants of optimal daily working time fund allocation
in relation to the workforce productivity level**

The active time that covers minimum standard of living, hour	The optimal sleep time, hour	The optimal rest time, hour	The optimal working time, hour	The total integrated utility
1	7,1	12,4	4,5	290
2	6,9	11,7	5,4	288
3	6,8	11,1	6,1	284
4	6,6	10,4	7,0	280
5	6,4	9,7	7,9	275
6	6,2	9,0	8,8	270
7	6,1	8,3	9,6	264
8	5,9	7,5	10,6	258
9	5,7	6,8	11,5	251
10	5,5	6,1	12,4	244
11	5,3	5,4	13,3	236
12	5,2	4,6	14,2	227
13	5,0	3,9	15,1	218
14	4,8	3,1	16,1	208
15	4,6	2,4	17,0	198
16	4,4	1,7	17,9	187

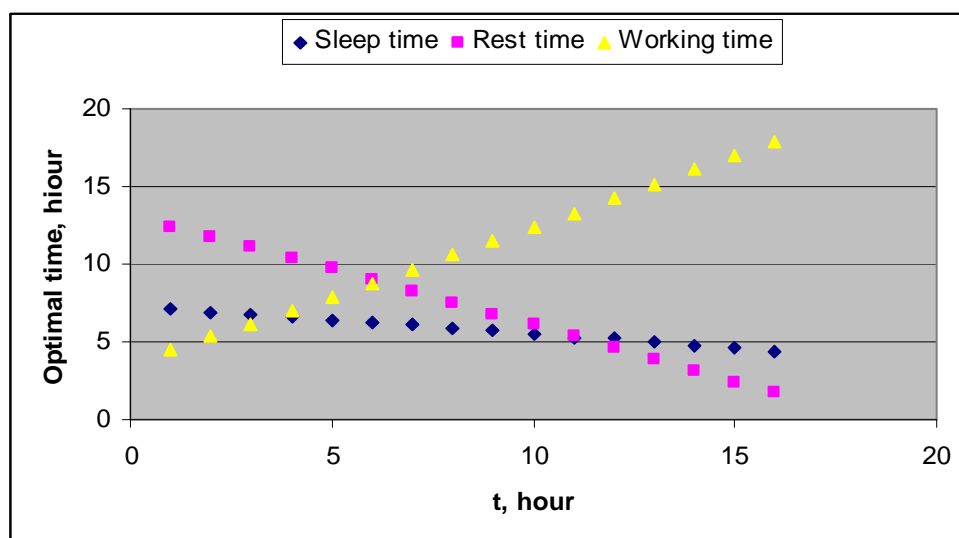


Fig. 2. Optimal daily working time fund allocation

2. Standard of living figure significantly influences the figures in the model. Two critical points should be considered when using it in the model:

- the accurate calculations for this figure in terms of the specific environment;
- the compulsory use of the minimum wages value figure in the model (basically, the wages must exceed the minimum standard of living).

3. The subject of the further scientific research in this direction is about the study of complex influence of both wages rate and minimum standard of living rate (or rather minimal wages rate) on optimal daily working hours of an employee.

On the ground of the conclusions the authors reached they outlines the following suggestions and recommendations along with the further research trends:

1. The problem of the optimal working time fund allocation is quite challenging and its successful solvation needs the real environment of a particular enterprise.

2. The application of the developed model in the particular enterprise environment presupposes the real minimum wage rate identification for particular environment: region, sector, enterprise, occupation etc.

3. The use of the suggested approach helps to define the optimal daily working hours as well as to solve the inverse problem of fixing the appropriate standard wages as a an incentive to daily productive labour. At the same time in the environment of a particular enterprise managers get the chance to efficiently tap into workforce potential in several ways:

- changing the working practices of the staff and the daily working hours (under the existing legislation);
- changing the existing remuneration practices;
- optimizing the wage amount.

4. Advantageous line in further development of the given model is in its expansion on account of the introduction of the extra factor – the aptitude of an employee (economically active person) for saving and investment.

5. The suggested approach would be effective for the workplaces assessment at the enterprise to reveal the workforce potential.

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Шевченко В. В., Інякін В. М. Оптимізаційна модель розподілу фонду часу працівника в теорії граничної корисності

В статті розроблено оптимізаційну модель розподілу добового фонду часу окремого індивіда з

використанням теорії граничної корисності. Використання запропонованого підходу дозволяє не тільки знаходити оптимальну тривалість робочого часу працівника, але і вирішувати протилежне завдання – встановлювати необхідний рівень оплати праці працівника з метою стимулювання його до інтенсивної праці протягом робочої доби. Запропонований підхід доцільно використовувати в процесі атестації робочих місць на підприємстві з метою виявлення можливих резервів підвищення ефективності використання трудових ресурсів.

Ключові слова: гранична корисність, модель, оптимізація, фонд часу, продуктивність праці.

Шевченко В. В., Інякін В. Н. Оптимізаційна модель розподілу фонду часу працівника в теорії предельної полезности

В статті розроблена оптимізаційна модель розподілу суточного фонду часу окремого індивіда з використанням теорії предельної полезности. Використання запропонованого підходу дозволяє не тільки визначати оптимальну тривалість робочого дня працівника, але і вирішувати зворотню задачу – встановлювати необхідний рівень оплати праці працівника з метою стимулювання його до інтенсивного виробничого праці в течение робочого дня. Запропонований підхід було б цілком доцільно використовувати в процесі атестації робочих місць на підприємстві з метою виявлення можливих резервів підвищення ефективності використання трудових ресурсів.

Ключевые слова: предельная полезность, модель, оптимізація, фонд часу, продуктивність праці.

Shevchenko V. V., Inyakin V. M. The Optimization Model of Working Time Fund Allocation in the Theory of Marginal Utility

The article presents the optimization model of the allocation of daily working time fund per person with the use of the theory of marginal utility. The use of the suggested approach helps to define the optimal daily working hours as well as to solve the inverse problem of fixing the appropriate standard wages as an incentive to daily productive labour. The suggested approach would be effective for the workplaces assessment at the enterprise to reveal the workforce potential.

Keywords: marginal utility, the model, optimization, time fund, workforce productivity.

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FORMATION MOTIVATIONAL MECHANISM OF LABOR MANAGEMENT FOR THE MODERN ENTERPRISES

Motivation of all time was one of the most important components in the system management. Of particular relevance motivation gets in a highly competitive market products, solve the problem since the conquest of markets is possible only with the establishment of proper motivation mechanism that can encourage employees to efficiently, improve product quality.

However, hyper trophic individualism and negative motivation, which are inherent in the command economy type, still evident in many other Ukrainian organizations of all forms of ownership and spheres of activity. Most of the mechanisms of motivation can not be used in Ukraine due to the fact that through evolution developed economy can not compare a situation where knowledge economy emerging in the country with sufficient rudiments industrial and autocratic traditions. That is why labor motivation in the establishment and development of the knowledge economy in Ukraine is an important social problem, whose solution within each company is a critical issue.

In Ukraine there is a need to improve personnel management incentive mechanisms for achieving strategic and tactical goals and collective enterprises, including the following: obtain the desired individual and collective performance and adequate remuneration, profit maximization, improving product competitiveness, expand markets.

Since the beginning of the new millennium, world economic processes are increasingly considered not only through the prism of "economic intelligence" as "economic stress". The latter is characterized not only sustained financial crisis, but also numerous conflicts tviternymy revolutions and man-made disasters. This situation shows that the duality technocratic society is not only to government technocrats on technique, but on the contrary - technosphere power over society [1, p. 25]. The extreme variability and dynamics of many social and economic processes today proclaimed knowledge economy leaves little choice but to create new motivational orientations for Ukrainian workers and their leaders, because the system of motives, actions and orientations representatives of the contemporary intelligent and democratized society built otherwise than in representatives of industrial society. Globality in thinking, to profess the principles of meritocracy together with the simultaneous production and consumption of information goods and services does not allow current employees divided society into "us" and "them". Therefore, new approaches to motivation,

including ukrainian intellectual management, will serve to address the contradiction between human development and the environment.

The aim of the paper is construction worker motivation motivational mechanism, which would be able, first, to serve the system generating knowledge-based approach to deep penetration into the essence of the problem and secondly, the balance of the employee in his search for physical, emotional, mental and energy fields to boost productivity as riparian socio-economic system and the national economy.

The issue of motivation mechanism devoted to research of many scientists. Theoretical and practical issues of incentives and motivation of staff in the system as discussed in the works of local scientists such as A. Vasilenko, V. Horovoho, V. Pokotylova, N. Rezanova, V. Storozhuk V, V. Chornomaz, M. Shapoval, L. Shvayko, A. Shevchenko, A. Shubin, etc., so foreign scientists Stephen M. Davis, R. Waterman, J. . Haryntona, M. Hammer, A. Charnes, W. Cooper, F. Crosby.

Speaking of priority to considering problems of motivation for each of the stages of the innovation process and the formation of effective motivation mechanism, it should be noted that the focus of the current conditions it should be given its inception ideas as a source of generation of innovation based on the potential human resources component of the innovation potential of the state as a whole or individual enterprises, research organizations and the like. It is human resource with its inexhaustible intellectual potential is the driving force behind innovative transformations, so the development of creative motivation (initiating innovation) is the key to overcoming inertia subjects of labor management that exists today.

Motivation and stimulation activities should certainly be seen as a process that is carried out continuously, which can be represented as a set of interrelated elements due to one another and generally characterizes the motivational mechanism of labor management.

Based on the essence of this definition, one could argue that any mechanism provides for parts (elements, links) that are in some way related to each other and influence each other.

This is always possible to distinguish between force (an element), having an effect and the object that it is experiencing, whereby realized this action (leverage), and for which it is carried out, that is a concrete result of the mechanism [2, p. 124].

By analogy with the description of the characteristics of the concept of "mechanism" to seek the essence

and principle of motivational mechanism of labor management must be clear about this:

- who makes the process of business motivation, that encourages certain behaviors and who is experiencing inducing effect;
- what action directed motivation - motivation object;
- what, specifically, want to achieve with incentives that aim its implementation.

Motivational mechanism is a component of the mechanism of interest in achieving maximum economic and social benefits of the company.

General basic element of market economy is the motivation activities based on a combination of different forms of ownership, accompanied by increased freedom of choice of each person kind ytypu classes. Freedom of choice is the basis of the personal will of the people, the foundation disclosure of personal potential.

Tree motivational mechanism should be in accordance with the tree mutual goals of society (and hence areas), that each goal at all levels of objectives must meet certain complex motivation (motivation mechanism element or subsystem) that achieves this goal. Thus, the starting point for determining the structure of motivational mechanism is considered significant motivational structure detection system goals (purpose - to achieve funds). This process is iterative in nature, as a means of motivation goals. And if you can not at a particular stage of social development to form sufficient to achieve a particular goal motivational complex target must be reviewed and brought into line with the real possibilities of motivation (of money - to the goal). For example, if the conditions of degradation due to improperly targeted and poorly organized economic reforms can not set wages, providing a sufficient degree of motivation high labor productivity, should rozmiryty rate of recovery and increase the competitiveness of production (level goal) of the real level of work motivation. This situation, however, can be corrected if we can strengthen internal motivation of employees (work satisfaction motives and expectations of success) [3, p. 83].

Of course in solving the problem limited to setting goals and finding resources to achieve them, considering that existing in society motivational mechanism for efficient use of resources to achieve the set goals of the entire society. Practice shows that this is not so. Real diversity of conditions and people employed by it, makes it necessary in solving any problem to form specific motivational mechanism.

Motivational mechanism as any system must have integrity and efficient property isolation of its elements. This means that there are a lot of elements are interdependent and changing one of these items require certain changes in other elements. Yes, interdependent pay, accept change in the quality of work. Change of

supporting one of these elements inevitably leads to the necessity of supporting the changes of other elements. Otherwise, the motivational mechanism is ineffective. At the same time requires a certain degree of isolation of elements to change of supporting one or another element to some extent offset by other elements of motivation mechanism, otherwise its effectiveness will not be reliable. These elements can be, for example, working conditions and differentiation of payment depending on conditions.

Motivation mechanism should include elements of different duration of their life cycle, with long, including the "eternal", ie, changing only with a change in human nature (the traditions of society), short is changing with the changing socio-economic or industrial situation, and intermediate between long and short life cycle. The composition of motivational mechanism to ensure its stability and dynamic development by replacing most mobile elements [4, p. 211].

Distant intentions determine long life plans of man. The image on which are formed intentions, motivation is a complex field with many reflections thereon values. The intentions are seen as the result of activity of the subject that weighs these values and determining feasibility and justification for their achievements.

From these considerations it follows that the company had to form the system performance goals. It is necessary to achieve these goals was the closest and (or) remote-intentioned managers, professionals, employees and each employee is involved in the process of achieving goals. Only in this case it is possible to "shift motives for purpose". On the basis of the research, the model of the mechanism of motivation and stimulation of labor management, which is shown in fig. 1.

It should be noted that this view of motivation and incentive mechanism is rather arbitrary, since in reality each entity structure of this mechanism depends on many factors: exercise motivation level (macro and micro); stimulating features of each object; entity's organizational structure; the nature of ongoing activities; selected strategies in innovation; Sustainable traditions, etc. [5, p. 85].

To understand the nature of the operation shown in Fig. 1 mechanism useful to analyze its components and the relationships that occur between them. This model reflects the emergence of general principles and actions of motivation. It can be seen in relation to the macro- and micro-level implementation of safety management. So as subjects in the proposed scheme can serve various actors of innovation processes related complex system of relationships on the development, implementation and effective use of various kinds of innovations.

Objective 1 subject, making motivational impact, is seeking the help of external influences on other subject-user innovation (subject 2) excite, develop, en-

hance certain motives, prompting the latter to implement actions for motivating desired sub an object such that lead to the desired end result, and in contrast, weaken or try to exclude from the motivational structure subject 1 the motives that prevent the achievement of the goal. The main objective of the entity that implements the motivation is to build complex motyvout-voryuyuchyh factors could cause the necessary changes

in the motivational structure of the subject. This subject 1 should be aware of the needs, interests, expectations and subject 2 somehow predict how these or other factors affect the motivation and behavior in the future, although it is difficult, as the impact from the outside is always characterized by individual internal perception of each situation [5, p. 87].

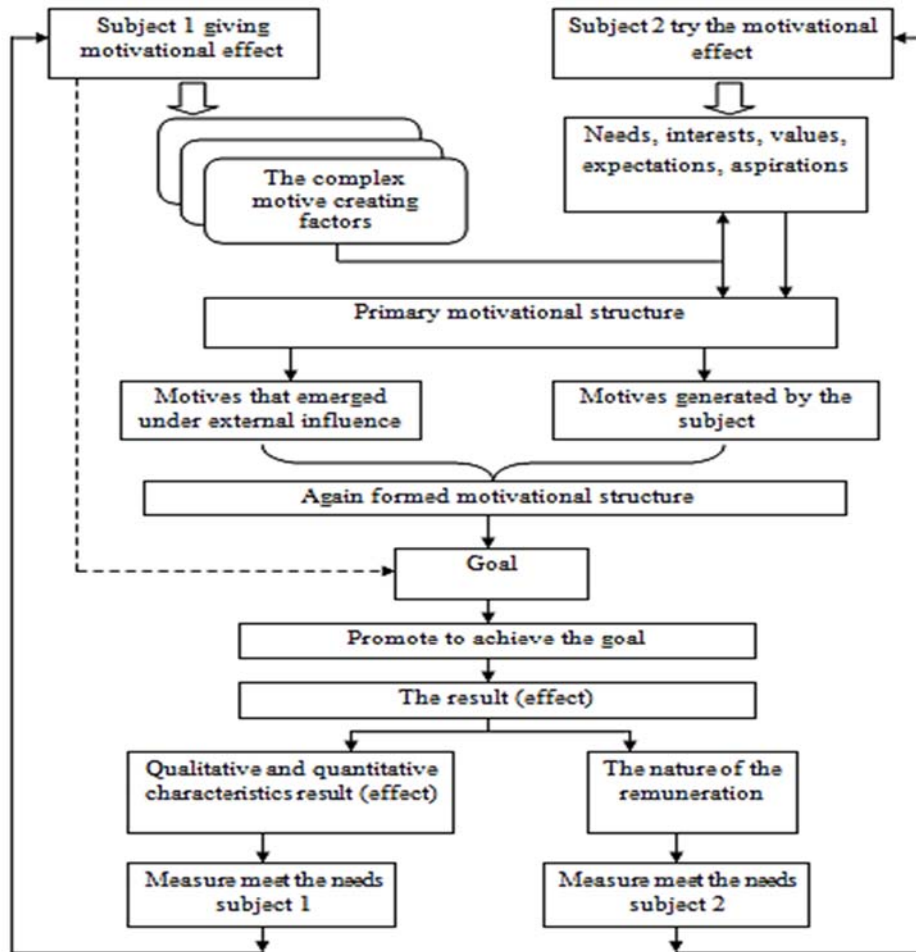


Fig. 1. Model motivational mechanism of labor management

External motif forming factors can be divided into positive, such that cause a positive reaction and increased activity of the subject in pursuing innovation and negative, such that forced participation in innovation (it may be a different kind of sanctions for non-compliance of certain actions not competition planned results). But we should not focus on the second group of factors and can even be quite effective in some cases, but restrict its influence on the motivation of the subjects participating in innovative processes weaken the overall level of motivation as a structure motifs dominated not desire to achieve something, and fear of punishment.

The grounds raised by external factors not directly related to the nature of the activity called extrasensive motives, these include: the motive of duty and respon-

sibility to society; motive of self-determination; the desire to get the approval of other high social status; reasons to avoid punishment. In the case of these reasons are not attractive activity itself, but only that it is connected (eg, power, material wealth, prestige), but this is often not enough to leverage activities. It is important that extrasensive motives were supported by procedural and substantive (intrasensive) motives, when the activity of the subject caused no specific influence of external factors, but by the process and content of activities. An interesting what he does, nature activities like exercise their intellectual and physical activity.

Formation of procedural and substantive reasons is especially important in the implementation of labor

management when it comes to creative work development of innovative products.

You must create an environment in which the leitmotiv in the motivational structure of the individual would be the process of intellectual activity, not forgetting, of course, the role ekstrynsyvnih factors in enhancing the overall level of motivation [6, p. 322].

Thus, as a result of external and internal generated by the subject, motyvoutvoryuyuchyh factors formed a certain motivational structure serving motives productions subject certain purposes, because in order to set a goal, you must have the appropriate motive or combination. The objectives are closely related with the motives and also stimulate activity, induce make appropriate efforts to achieve them, while the more specific the general goal of achieving intermediate stages, the marked chitshe means to achieve the goal, the more force inducing action and the probability of goal [7, p. 44].

Goal setting can be made the subject of their own (subject, try the motivational effect) and wonder outside. In the latter case, the link can be formed under the influence of incentives on the purpose of the respective motive. It is important to aim, set outside, adopted subject was his personal view to the subject does not perceive it as a task imposed, did not try to change it, it requires an external matching aim intrinsic motivation of the subject, and the inclusion of the subject in part in setting goals, analyzing the conditions of its achievement. The next element of motivational mechanism of labor management associated with the direct implementation of specific action based on the process of stimulation to achieve their goals. Thus, the higher level of general motivation and a decent level of stimulation, the harder it is prone to make. By implementing a particular course of action, the subject receives a result, has the qualitative and quantitative characteristics. The result, which brings the reward for the work (it can be tangible and intangible). This result correlates with the initial needs, interests, waiting as a subject that has a motivational effect, and the entity that tested the action, and depending on the extent to which the expected effect was received actually selected line conduct further sub ' objects [8, p. 89].

The end result is an important factor that affects the motivation of subjects participating in labor management: positive, appropriate expectations and surpassing them, can significantly enhance the motivation to continue to exercise that does not require re-shape the motivational structure of the subject and enables through a variety of incentives to maintain, consolidate, develop, enhance the action of various reasons; and, conversely, a negative result that did not bring the pleasure of management work, is the case, due to the conditions of risk and uncertainty associated with innovation processes is their essential characteristic, can destroy motivation terminate this motivational mecha-

nism. However, this does not mean that disappear need to manage work, desire to perform in various subjects, it implies a need to form another motivation for changing motyvoutvoryuyuchyh complex factors and, consequently, the motifs that stimulate activity in innovation.

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Козинець А. Формування мотиваційного механізму управління працею для сучасного підприємства

В статті запропоновано погляд на мотивацію персоналу підприємств, що дає змогу провести оцінку особливостей формування нових соціальних цінностей і мотиваційних орієнтирів економіки знань, які видозмінюють поведінку сучасних працівників.

Розглянуто роль мотивації праці в забезпеченні розвитку підприємства. З'ясовано сутність основних теоретичних підходів до мотивації працівників та їх можливості. Визначено провідні мотиви професійної діяльності для розуміння можливостей застосування основних мотиваційних теорій до підвищення інноваційної активності персоналу.

Сформовано узагальнений мотиваційний механізм для сучасного підприємства. З'ясовано, що існуючий механізм мотивації враховує такі важливі мотиви професійної творчості, як мотиви самореалізації, матеріальні та моральні стимули, вони повною мірою сприяють підвищенню активності працівників підприємства. Визначено основні шля-

хи покращення процесу формування системи мотивації, що включають необхідність здійснення постійного моніторингу міри задоволення потреб працівників, оцінювання існуючих інструментів з позицій формування, розширення форм та методів навчання працівників.

Ключові слова: мотивація персоналу, мотиваційні теорії, механізм, система, мотиви, потреба, інтерес, мотиваційна дія, стимул.

Козинец А. Формирование мотивационного механизма управления трудом для современного предприятия

В статье предложен взгляд на мотивацию персонала предприятий, что позволяет провести оценку особенностей формирования новых социальных ценностей и мотивационных ориентиров экономики знаний, которые видоизменяют поведение современных работников.

Рассмотрены роль мотивации труда в обеспечении развития предприятия. Выяснено сущность основных теоретических подходов к мотивации работников и их возможности. Определены ведущие мотивы профессиональной деятельности для понимания возможностей применения основных мотивационных теорий к повышению инновационной активности персонала.

Сформирован обобщенный мотивационный механизм для современного предприятия. Выяснено, что существующий механизм мотивации учитывает такие важные мотивы профессионального творчества, как мотивы самореализации, материальные и моральные стимулы, они в полной мере способствуют повышению активности работников предприятия. Определены основные пути улучшения процесса формирования системы мотивации, включающие необходимость осуществления постоянного мониторинга степени удовлетворения потребностей работников, оценка существующих

инструментов с позиций формирования, расширения форм и методов обучения работников.

Ключевые слова: мотивация персонала, мотивационные теории, механизм, система, мотивы, потребности, интересы, мотивационное воздействие, стимул.

Kozinets A. Formation Motivational Mechanism of Labor Management for the Modern Enterprises

In the article the view of staff motivation enterprises, allowing to assess the characteristics of the formation of new social values and motivational orientations knowledge economy that modify the behavior of modern people.

The role of work motivation in providing enterprise development. The essence of the major theoretical approaches to the motivation of employees and their ability. Defined motives leading professional work opportunities for understanding the application of basic motivational theories to increase innovation activity staff.

Formed generalized motivational mechanism for the modern enterprise. It was found that the existing mechanism of motivation into account such important motives of professional work, the motives of self, material and moral incentives, they fully contribute to the activities of employees. The main ways to improve the process of formation of motivation system, including the need for continuous monitoring measures to meet the needs of employees, evaluate existing tools from the standpoint of the formation, expansion methods of teaching staff.

Keywords: staff motivation, motivation theory, mechanism, system, motives, needs, interests, motivation, action, incentives.

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EVOLUTION OF SOCIAL PROTECTION: FROM THEORETICAL TO CONCEPTUAL PENSION SYSTEM MODELS

Introduction. Development of the national pension system (retirement plans) is the result of the evolution and is component part of the system of social protection. At the same time the roots of social protection lie at the origins of human development and are based on compassion and human treatment of deprived and frail social groups. At the present stage the primary targets of the pension system are providing material support (moneyed assistance) for the elderly. In conditions of the fixed in the Constitution of Ukraine principle of *social welfare state* pension provision requires employment of appropriate up-to-date approaches for their formation [1]. It is the concept of *social welfare state* that became the constituent of Ukrainian national ideology [2, p. 23]. In addition to this, the derivation of social goals is social ideals. They reflect the values of both the society and people's wishes and ambitions.

It must be emphasized that implementation of this mentioned constitutional norm shall be based on the optimal model of social protection and pension provision as well as the availability of financial resources sufficient for its functioning. Following the trend for forming mixed forms of retirement plans, the three-pillar concept of pension system came into operation in Ukraine in 2004. It consists of the following pillars. Pillar 1 – standardized, state-run pension system, which offers basic coverage and is primarily focused on reducing poverty. Pillar 2 – a funded system that recipients and employers pay into; this includes pension funds and defined-contribution accounts/plans. Pillar 3 – voluntary private funded accounts, including individual savings plans, insurance, etc. [3; 4]. The major principle of the three-level pension system – the more that is paid in contributions now, the more will be received in future benefits. The co-existence of the three levels provides the stability of the pension system by mitigating demographic and financial risks specific to each level. Such mechanism allows consolidating redistribution and saving constituents for the purpose of state and non-state pension funds. As a result pension system in the present-day system of social protection plays the role of material security regulator for people of advanced age. Along with this such complicated system of retirement insurance shall be in the first place financially balanced model. V. V. Kapyltsova points that all national economic models of developed countries (in all their variety) have powerful social system the obligatory element of which stands as the guarantee of their vitality and efficiency [2, p. 19]. However, transfer of foreign elements into other culture-historical ground, in the opinion of V. G. Pogoyan, is inefficient, and the elements remain alien in

the new environment [5, p. 48] that requires development of appropriate adapt mechanisms. To find ways of solving problems of satisfaction of growing needs against a background of increasing demographic, environmental and other risks is of prime importance. Deepening of crisis developments and system imbalances in different communities give ground to scholars and practitioners to announce the necessity of changing paradigm aspects of global change. Search and formation of historically substantiated model of pension system in such conditions is of key importance in social development.

Analysis of recent research and publications based on the problem under consideration. Issues related to different component parts of social protection and pension system are embodied in research of many scholars and practitioners, among whom are V. D. Roik, V. V. Kapyltsova, N. Yu. Borisenko, O. N. Nikiforov, B. A. Zaichuk, L. A. Omelianovich, P. A. Orlov-Karbu and others. However, the state of the national pension scheme (system) as part of social protection in transforming and unstable environment speaks of the necessity for further study and improvement of the model taking into account trends of social development and present-day challenges. This explains thematic justification.

Thus, **object of the paper is** analysis of some aspects related to forming model of the national pension system, historically based on development of social protection, identification of issues of concern and determination of the lines to improve the model of pension system in the context of aspects of modern development of society and existing risks.

Research methodology. Our research is based on a system approach using general scientific methods: generalization, analysis and synthesis. We used abstract-logical method for making conclusions.

Problem description. It is important to emphasize that human being was always in need of protection from the moment of knowledgeable description of environment and conditions of his existence. His physical entity is vulnerable (diseases, traumas, the infirmity of old age). Also it is difficult to get food or a means for living by work (or by any other occupations) due to limited physical capacities with increase of years that deprives of the opportunity to make provision for the individual. Depending on the stage of mankind development the advanced in years and disabled members of society always obtained appropriate social protection. Considering evolution of social protection as constituent of history of society development, we point to the features of historical process. L. Ye. Grinin and A. V.

Korotaev note that historical process is neither mechanical sum of histories of many nations and societies nor the process of movement and development of these nations and environments as such in time. These authors point to the growing and even cumulative process of integration of society that has its direction and outcome which lead to consistency of supersocial relations [6, p. 102]. This points to gradual convergence of problems of social development and social process. It

should be mentioned that there are different approaches to systematization and periodization (dating back) of development of communities (social services) as constituent of society development. H. A. Barlybaev generalizes approaches to periodization of social development which are applied to illustrate social development, development of social protection and pension system (Fig. 1).

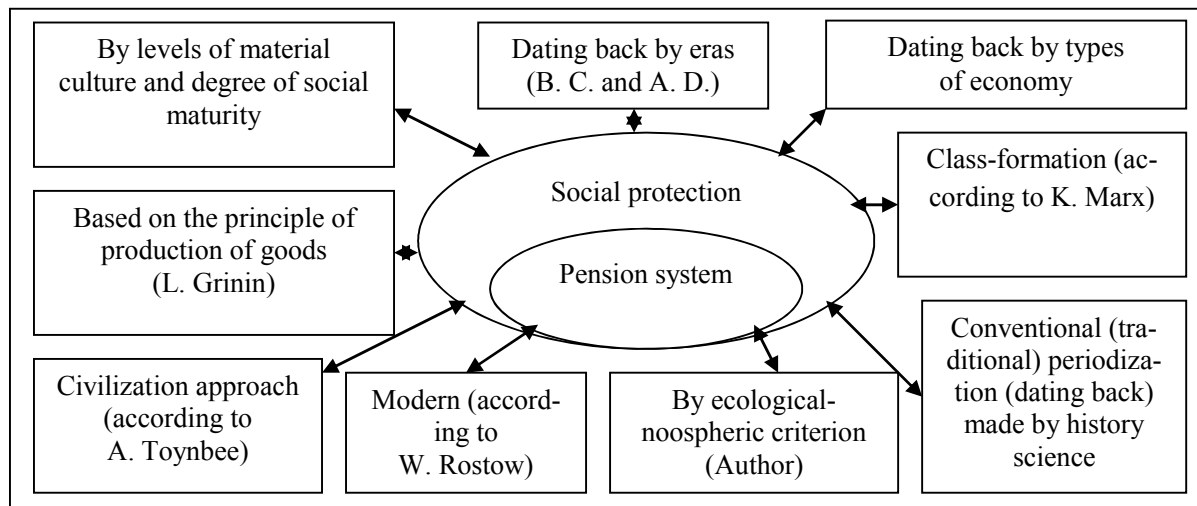


Fig. 1. Conceptual diagram of periodization of social development in the context of development of social protection and pension system

Sources: Barlybaev, H. A. *The Law of Ukraine "On Compulsory Pension Insurance"*, *the Law of Ukraine "On the Non-State Pension Schemes"*, conclusions of the Author.

Each of the presented methodologies of periodization of social development has its own features and represents historical version of social process from its own (specific) standpoint, content and appropriate methodological instruments. For example, standard dating back by eras (B. C. and A. D.) are illustrative of social development with the help of universal *reference point* and special system of chronology and calendar [7, p. 8–10]. Respectively, all stages of development of social protection and pension system correlate with the given periodization (Author).

Dating back by types of economy reflects development of social relations in the context of the levels of their organization (natural, money economy, capitalist production, planned economy) [7, p. 8–10]. Such form of periodization describes tying and correspondence of a stage of history to the form of social and pension relations (Author).

Class-formation periodization illustrates evolution of social sphere in the context of transformation of primitive communal, slave, feudal, capitalist, and communist formations [7, p. 8–10]. Like previous periodization, such approach describes social and pension relations in relation to class forms of society and serves as reflection of its nature and level of development (Author).

Conventional (traditional) periodization (dating back) represents social evolution by means of generalization of periods (epochs): primitive epoch (from origination of human being till the third millennium B. C.); ancient world (from the second millennium B. C. till the 5th century A. D.); Middle Ages (the 5th – the 17th centuries A. D.); early modern period (the 18th – the 19th centuries); contemporary history (the 20th century) [7, p. 8–10]. The relation of periodization to the features of historic process illustrates genesis of the forms of social protection from its sources and subsequent transformation in compliance with the course of historic events (Author).

Modern periodization (according to W. Rostow) represents evolution of social relations by description of any community (society) or nation by the level of social-economic and technological development irrespective of time and place of their existence (traditional society, pre-industrial society, industrial society, post-industrial society, and information society) [7, p. 8–10]. This periodization in its full sense gives explanations to the forms of social ties in society in applicable periods (Author).

As to the civilization approach (according to A. Toynbee), it takes origin and development of any given world religion (three generations of human civilization are recognized; now the fourth generation of

local civilizations is originating) [7, p. 8–10]. Of great significance in the appearance of elements of social protection and formation in public conscience of relation to needy, vulnerable groups was Christianity. Its principles provided the basis for institutional settings to help such people, one of which is church (Author).

In periodization based on the principle of production of goods according to L. Grinin social relations are considered in the context of definite (industrial) formations: i) hunting-foraging; ii) agrarian-trade; iii) industrial; iv) science-information [7, p. 8–10]. This periodization describes evolution of social relations from single and isolated to system and mass ones, the basis of which form one or another form of production organization (Author).

Periodization based on the levels of material culture and degree of social maturity is as follows: i) embryonic; ii) adjustment to terrestrial life; iii) leaning of terrestrial life; iii) spiritual search; iv) material-accumulative; intellectual-humanistic [7, p. 8–10]. This periodization explains forms of social ties in community (society) on the basis of evolution of man's consciousness, sole and interrelations inside society from the view point of distribution of social product and attitude to helpless and losers in definite periods of development (Author).

Incremental load from the impact of human activities (including solution of social problems of increasing people's well-being) on ecosystem of our planet makes advisable, in our opinion, to consider periodization according to ecological-noospheric criterion: to what extent provision of corresponding social relations and human activity conforms to laws of nature and makes changes in (disturbs) ecosystem. From this periodization depends revealing of tendencies in the state of ecosystem and corresponding risks of disturbing the environment for providing human's life that requires development and introduction of development of social services into practice. It cannot be denied that each of interpretations of social constituent of the forms of periodization differs also from the others and serves as reflection of the definite state of society (its attitude to the assistance of helpless and needy).

It should be emphasized that each of interpretations of social components of the forms of periodization is also different from the others and reflects definite feature of society state and its attitude to the support of helpless and needy.

Along with this, the Author believes that criterion according to which interpersonal relations and relations of social strata and classes are considered as the basis for identification of any given historic period, is fundamental for all formations [7, p. 10], where interpersonal relations for distribution and appropriation of the outcomes of manual labor and intellectual work serve as the driving force of development.

Researchers and practitioners agree that social safety net for the individual is, in particular, the basis for human treatment to helpless and needy groups of people, which out of the range of family and family relationship had the form of welfare. O. N. Nikiforova

takes up the position that initial form of beneficence was giving alms-gift [8, p. 5]. It was face-to-face and had voluntary nature.

Controlled process of helping needy became carried out by care operated on charity principles based on commandment of Christ. The care covered the most vulnerable categories of poor. However, the assistance to the deprived was no state duty. It also rendered on an individual basis.

Evolution of the initial forms of material support for the vulnerable categories of people to social protection of them took place under the influence of economic, political and social relations. It is observed that the basis of such development is the contradiction of people's needs and material conditions (financial means) of satisfaction of them. The dominant factor in this process is the law of growing needs, which controls functioning both of the whole and parts that form it [2, p. 39].

O. N. Nikiforova speaks of the existence of several stages of historic development of social protection inside which, when considering in detail, one can see elements of origination, establishing, and improving of pension provision [8, p. 32]. These periods are: i) communal assistance and alms-deed; ii) establishment of care (charity) as a branch of state control; iii) definition of the system of pension provision of the general state care; iv) development of insurance principles in the system of state care; v) formation of pension provision; vi) period of development of social protection according to principles of state provision [8, p. 32, 33, 34, 40, 45]. The mentioned periodization illustrates transformation of non-organized types of beneficent assistance into consistent assistance under auspices of the state. It is significant that together with development of system of social protection socialization of economy also took place that involved support of working people. It is observed that modern economic theory considers socialization of economy as fundamental trend of social development and tends to trace its action from the moment of occurrence of human being on the Earth when joint manufacturing of tools of trade and their purposeful use become the basis for occurrence of laws of social relations [2, p. 23].

At the same time, S. A. Tsyganov and T. V. Tabakov point that every state has their own way of economic growth and methods of its achievement [9, p. 95]. And hence, their own specific features of formation of social services are predetermined.

According to B. G. Pogosyan, one of the dominating cultural archetypes of Slavic ethnos is paternalism. As reflection of this, in the value system of society the pattern of powerful welfare state prevails [5, p. 116]. It is recognized that society has to be responsible for adequate standard of living of the aged. Pension system of Ukraine predicated on the principles of paternalism was functioning till 2003. In the periods of favorable demographic situation and stable economy it could provide high levels of retired pays (pensions). With acquiring of independence in conditions of arriving instability pension system became unable to fulfill its

obligations. The peculiarity of the so-called transition period (to market economy) is all-encompassing transformations of all spheres of our society. It is observed that the course of transformation processes is heavily specified by the type of modernization. A concept of *modernization* is usually employed to industrial society and democratic political order. In this case it is accentuated that modernization is importation by traditional societies of new social roles and political institutions formed under west democracies [10, p. 24]. The authors distinguish two types of modernization: original (spontaneous) modernization typical to countries that survived transition to ordered social structures in the course of gradual longtime development of internal processes (USA, England) and secondary (reflected) modernization inherent to countries, which for some reasons or others fell behind in their development and now by means of wide use of experience of the leading states are trying to catch their living standards and quality of living – *aggiornamento on the heels*. The main factors of the secondary modernization are cultural and social contacts with already-existing centers of industrial and post-industrial culture [10, p. 24].

It is to be noted that such way was selected for reformation of pension system in Ukraine. The choice of new three-pillar concept of pension system based on insurance principles implies breakaway of paternalistic traditions in social protection. Significant plus of insurance mechanism is adjustment of scale of pension to wage level (revenue) and length of pensionable service. At the same time redistribution of responsibility for formation of insurance assets of the state, employer and employee towards the latter took place. The mechanism mentioned requires active and acknowledgeable participation of an individual in pension relations, possession of primary financial knowledge and availability of established insurance traditions. Experience of multiple pension schemes show contradicting results. For example, joint system of obligatory retirement insurance with comparatively low level of retirement payments is not financially balanced. Non-state forms of retirement insurance did not obtain a wide-spread circulation, and during ten years no obligatory conditions have been created for financial defined contributions to be implemented.

Examining modernization path of development of the post-soviet states, we can see that without appropriate institutional provision (Russia) it leads to economic voluntarism and fall of living standards of people, and evolutionary path of development (Belarus) creates conditions for stable, irreversible character of economic growth and provides inertia of motion, which gives time and additional capabilities for unfavorable situations to be corrected, in which case, transition from extensive to intensive marketable economies is slowed down [10, p. 41]. Similar statement is also made by A. I. Amosov, according to which acceleration of social and economic evolution does not always result in more advanced outcomes as opposed to maintenance of traditional forms [11, p. 46].

Thus, arranging model of the national pension system, we should bear in mind historical and cultural aspect and institutional utilization of the capacity of new, brought from outside, constituent parts of the system.

Along with this, A. G. Ganzha underlines that the model must be system-based; in order to bring it into operation an *axiom* should be used, that is a limited set of starting, evident enough, initial idealizations (abstractions) taken without proof within the given conception. The more items, events and processes the model combines and explains, the better it will reflect reality [12, p. 10].

We are of the opinion that axiom of pension system model can be the whole of social relations constructed taking into account cultural, historical and world components (global trends of development) that provides material support in cases of loss of ability to work because of age (as well as disability and other cases) at the level sufficient for life support (in the understanding relating to an actual environment). However, any stable meeting of goal objective and functioning of certain persons and groups based on deliberately established plans, goals and system of values is impossible without distinct and stable social restrain in society [13, p. 23]. Taking into consideration a high level of risk components in administrative spheres, pension system model has to be risk-resistant. Among the main risks we can distinguish: demographic risks (due to aging of population and financial load on pension system); economic risks (economic immaturity of investment environment); financial risks (insufficiency of financial instruments). Integral risk-resistant pension system model is shown in Fig. 2.

We think that this model is an assembly of risk-resistant components (constituents) of integral pension system model: demographic, ecological, economic and financial. Personal intellectual-spiritual-noospheric-oriented component is the most important in the structure of pension system model. This is due to the overall dependence of each of the components of pension system on acknowledgeable acceptance of it by participant of pension relations. The point to be emphasized is that such participation is understood in the long run and different role-playing accessory.

Significantly that stability is exterior form and reflex of internal structure of the system, therefore the basis of stability of economy is built in macroeconomic system [14, p. 35]. This means that level of development of economy determines admitted parameters of pension system model elements. However, stability of pension system has to be provided in conditions of implementation of social policy directed to raising the well-being of the people.

G. M. Ivanova considers social policy as a system of political, economic and financial decisions and measures directed to maintaining social stability, achieving social well-being and raising living standards, as well as corrective actions for specific social problems [15, p. 28]. Efficient social policy has to maintain such type of social dynamics, which, on the

opinion of V. V. Kapytsova, is oriented on progressive transfer of social expectations into status positions [2, p. 106].

At the same time, in conditions of modern stage of social evolution a world community considers formation of the global social policy in two directions. The first one is solution of the problem relating to national social policy, convergence of national welfare practices and working out of global social standards. The second one is building transnational social policy that assumes formation of the mechanism of global social transfer, global social control and global social rights [16, p. 52–53]. National social policy has been formed taking into account world experience and has a complex structure consisting of systems of social guarantees, social insurance and social care, in which case guarantees of implementation of social protection are given by the state. Efficient implementation of social policy is possible only providing social responsibility of the participants of social relations. The system of social responsibility is a unity of elements where both

an individual and environment in any of its forms being collective party in charge of activity and responsibility can be the subject of responsibility: social groups, collective groups, peoples and states [17, p. 77–78]. We should emphasize that the main chain of social responsibility is a man as a bearer of interests, organizer of implementation and a source of criteria of evaluation of social problems. According to A. Kolot, it is appropriate to consider corporate social responsibility as either component of social resources of business organization or component of resource portfolio [18, p. 20]. This quality is of special applicability in conditions of implementation of three-pillar pension schemes where insured person and employer of whom quality of work place, of employees' wage level and the rate of accounting and payment discipline, which provide account of years of work to record of insurance and ultimately of scale of pension (rate of retirement pension) depend, are responsible for the formation of pension assets.

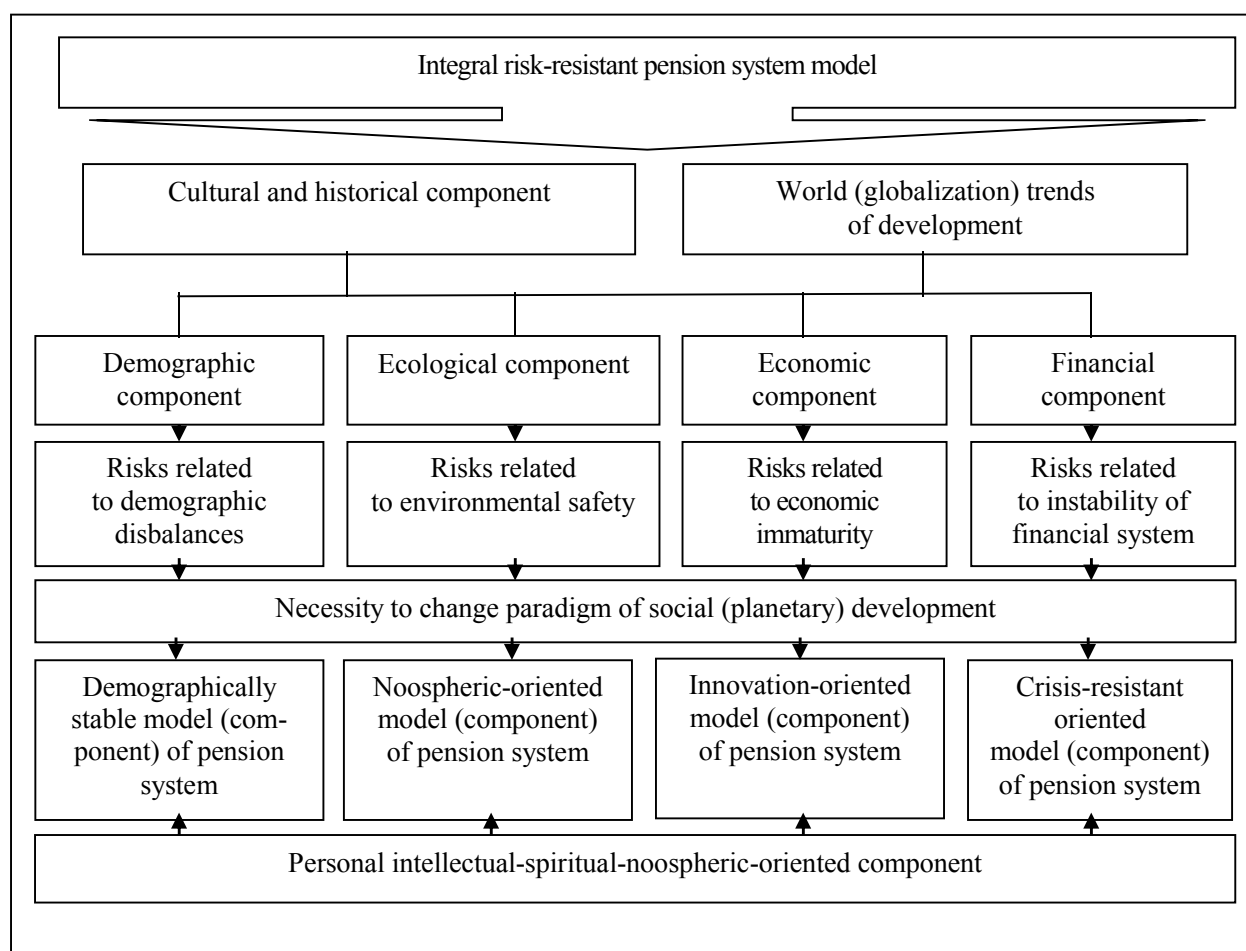


Fig. 2. Integral risk-resistant pension system model

Sources: *The Law of Ukraine "On Compulsory Pension Insurance"*, *the Law of Ukraine "On the Non-State Pension Schemes"*, conclusions of the Author.

N. Yu. Borisenko distinguishes three basic institutions of state pension provision, the coupling of which

allows obtaining different combinations of national pension schemes (pension system models). In pre-

industrial period social care as a form of social protection was one and only help. Nowadays in developed countries this institution plays a role of safety net for persons for whom basic forms of social protection became unobtainable or ineffective for some reasons or others. Compulsory social insurance of all employees and most of self-employed population, which is based on joint income approach of financing, became a frequent practice in industrial and post-industrial societies. Its goal is to maintain social risks of standard of life achieved in employable period with the help of collective (mass) forms of insurance. Welfare services (systems of social security) of all developed countries with socially responsible economy, of Central and East European countries and former USSR were built on principles of solidarity and ongoing funding. Personal (voluntary or compulsory) retirement pension insurance with the help of accumulation of adequate financial assets for whole life annuity in the early-industrial societies played a role of the basic mechanism of self-protection of employees and self-employed entrepreneurs in the period of cancellation of working life. Nowadays it gained momentum as a form of compulsory personal retirement pension insurance within countries of Latin America and in a number of countries with emerging economy [19, p. 107].

However, this classification, on our opinion, requires addition of the element of social provision because it puts specific emphasis not on the accumulation of money (low level of remuneration) but on maximal duration of labour utilization. As distinct from insurance principles, this form is based on length of pensionable service (harmful working conditions) that meets the priorities of public policy at the stage of industrialization of the country. The main task in definition of the concept of reforming financial mechanism of state pension provision is to determine optimal proportions of employment of each of three abovementioned institutions of pension provision and forms of development of each of them [19, p. 107].

We think that the key element for the formation of the concept of modern pension system can be working out of its ideology, in which one should take into account and combine demographic situation (correlation of population in employable and unemployable age, lifetime) and labour market conditions (level of unemployment, the scope of *shadow* sector of economy; long-establishing pattern of social system and achieved ratio of its sociality (rate of GDP directed to pension coverage; scope of constitutional social guarantees); conducted social policy (differentiation ratio of employed population by wage including also differentiation by separate regions of the country; purchasing capacity of pensions and reproduction rate; development of culture and traditions of social insurance that combines principles of personal and joint and several liability of participations of the system).

Important component of pension system is definition of the goals of pension system from the standpoint of its main participants. As it appears from analytical report of the NISS *Risks, threats, priorities and conse-*

quences of reformation of pension system in Ukraine, for purposes of the individual the goals of pension system are levelling of incomes throughout the whole life cycle by means of accumulation and distribution of savings (transfer of part of the assets from the period of economic activity and getting wages to pension period). From the view point of the state, the main goals are poverty reduction in the elderly and redistribution of incomes from rich to poor [20, p. 5]. Government expenditures for these purposes tend to reducing lately. We believe that this contradicts to the basic principles of social welfare state (which main target is high level of welfare and creation of conditions for balanced growth of man) and social insurance (correspondence of rate of retirement pension to wage level (income) and length of pensionable service). Thus, we are of the opinion that this contradiction requires regulatory adjustment in provisions of retirement pension insurance.

Conclusions. In summary it can be said that mechanism of three-pillar pension system model as part of social protection in implementation of social tasks has not yet developed its existing opportunities. Three-pillar pension system model has not gained ground as concerns instruments of retirement pension insurance. When being formed, historical-cultural component and world (global) tendencies of social development were taken into account not to the full. We think that in order to improve the concept of the national pension system it is necessary to:

i) Work out and introduce into practice periodization by ecologic-noospheric criterion: how provision of social relations and human activities correspond to the laws of nature and to what extent they introduce changes into (disturb) ecosystem and indicators of social services.

ii) Introduce integral risk-resistant pension system model in which historical-cultural component and world (global) tendencies of social development will be taken into account.

iii) Work out and make regulative conceptual trend of the main targets of pension system from the view point of the state to provide high level of welfare for all categories of pensioners taking into account provisions of social state and insurance principles.

Implementation of the mentioned proposals will allow making actual functioning of all three pillars of pension system in accordance with historical-cultural features of development of state and world trends of social development and providing rise of social protection of population in the context of social-economic development of Ukraine.

The outlooks of further studies can be solution of problems relating to formation of integral conception of pension system and harmonization of its functioning in transforming social environment.

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Рад Н. С. Еволюція соціального захисту: від умоглядної до концептуальної моделі пенсійної системи

В статті досліджено важливі аспекти розвитку вітчизняної пенсійної системи в контексті соціальної еволюції суспільства. Виявлені та окреслені особливості і проблеми модернізації вітчизняного пенсійного страхування в умовах сучасних ризиків та викликів. Запропоновані напрямки удосконалення концепції пенсійної системи в контексті особливостей національного культурно-історичного розвитку і сучасних тенденцій, ризиків та викликів суспільного розвитку.

Ключові слова: пенсійна система, модернізація, аксіома, ідеологія, проблеми, інтегральна ризикостала модель, розвиток.

Рад Н. С. Эволюция социальной защиты: от умоглядной до концептуальной модели пенсионной системы

В статье исследованы важные аспекты развития отечественной пенсионной системы в контексте социальной эволюции общества. Выявлены и обозначены особенности и проблемы модернизации отечественного пенсионного страхования в условиях современных рисков и вызовов. Предложены направления усовершенствования концепции пенсионной системы в контексте особенностей национального культурно-исторического развития и современных тенденций, рисков и вызовов общественного развития.

Ключевые слова: пенсионная система, модернизация, аксиома, идеология, проблемы, интегральная рискоустойчивая модель, развитие.

Rad N. S. Evolution of Social Protection: from Theoretical to Conceptual Pension System Models

The article analyzes important aspects of development of pension system in Ukraine in the context of social evolution of society. Modernization of pension system provision in conditions of present-day risks and challenges is distinguished and specified. Lines of improving the concept of pension system in the context of peculiarities of cultural-historical development and current trends, risks and challenges of social development are given.

Keywords: pension system, modernization, axiom, ideology, problems, integral risk-resistant model, development.

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