Conclusions

1. Income based policy is a passive one: it supports individuals in distress; however, it is not intended to develop their capabilities. Modern, post-industrial economy needs active social policy, encouraging personal development and providing motivation for development of one's knowledge, skills and abilities.

2. A concept, stressing long-term capabilities, based on certain asset level, is called *asset-based policy*. During the last decade, several countries started focusing the social policy towards a universal, asset-based policy.

3. The first results of asset accumulation programs suggest that this policy increases individual saving rate, financial literacy and may have positive attitudinal, behavioral, and social effects. Even low-income individuals and families are capable to save.

4. To-date, no continental Western European country has carried out asset-based policy experiments; neither did CEE countries.

5. Dynamics of the Gini coefficient and poverty rate in CEE countries in 2005-2010 suggests that the social policy in place didn't bring a break-through in a combat against poverty and inequality.

6. Inefficiency of current social policy, economic crisis and austere fiscal policy are the main assumption to start implementing asset based policy in CEE countries.

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Надійшла до редколегії 05.05.12

JEL classification C61, O33

O. Liashenko, Professor, Doctor,
Taras Shevchenko National University of Kyiv

DYNAMIC MODEL OF MULTISTRUCTURAL ECONOMY

На основі теорії біфуркації (катастроф) запропонована динамічна модель впливу підприємницького потенціалу на процес формування технологічного виробничого укладу. Проаналізовано ефекти, що виникають при заміщені технологічних укладів.

Ключові слова: підприємницький потенціал, технологічний уклад, модель, моделювання, теорія біфуркації, ВНП.

На основе теории бифуркации (катастроф) предложена динамическая модель воздействия предпринимательского потенциала на процесс формирования технологического производственного уклада. Проанализированы эффекты, которые возникают при замене технологических укладов.

Ключевые слова: предпринимательский потенциал, технологический уклад, модель, моделирование, теория бифуркаций, ВНП.

The paper studies the dynamic model of influence of entrepreneur potential on the process of forming of technological production way, based on the theory of bifurcation (catastrophes). The effects, caused by substitution of the technological ways, are being analyzed.

Keywords: entrepreneur potential, technological way, model, modelling, theory of bifurcation, GNP.

Introduction. Investigation of the causes and consequences of cyclic long-term fluctuations in business activity in the economy led to the emergence and development of the concept of technological multistructure production. At present, generally accepted view about the existence of six technological ways, where the notion of technological way refers to a set of technologies and industries of the same level.

Investigations show that in a market economy development and changing technological way manifested in the form of long waves of economic conditions (Kuznets waves). At the same time rate of economic growth and business activity vary depending on the phase of the life cycle of technological way.

Analysis of recent research and publications. The scientific works of scientists J. Schumpeter, R. Foster, J. Martino, G. Dobrov, S. Glazyev, R. Nyzhehorodtsev are devoted to investigation of features of economy technological development. A significant contribution to the development of the same problems did Ukrainian scientists V. Geyets, L.Fedulova, Y. Bazhal and others.

In particular note the contribution of Joseph Schumpeter in the study of economic development. Schumpeter introduced the economic science distinction between economic growth and economic development. ***Economic growth*** – the increase of production and consumption of the same goods and services in length of time. ***Economic development*** – first of all the emergence of something

new, previously unknown, or speaking in modern language, innovations. Schumpeter defined innovation as follows [1]: "This concept includes five cases: (1) The creation of new product, which is noet known for consumers or new quality of product. (2) The creation of a new method of production not tested in a given industry which is not necessarily based on new scientific discovery and may include may include a new form of commercial circulation of goods. (3) Opening of a new market i.e. the market where the industry is not traded in that country whether there was still the market or not. (4) Opening of new sources of inputs whether there was still the source or it was necessary to create new. (5) The creation of new industry, for instance, achieving the monopoly or elimination of monopoly position."

Economic development gives the course of circular flow, brings to life new industries and disband obsolete branches. It just happens in the transition from one technological way to another.

The significant figure in the process of economic development is entrepreneur for Schumpeter. Schumpeter underlines differences between terms "capitalist" and "entrepreneur". The figure of entrepreneur is not characterized by what he owns, but special qualities of character – initiative, authority, gift of foresight, willingness to take risks. Within easy cycling in his opinion there is no entrepreneur. This is the special type of person carrier dynamic processes; he always focused on new, as an engine of technological progress.

That is why the study of transition to a new technological way necessary to consider the impact of entrepreneurs on the processes taking place in public life in general and the economy in particular. Therefore, the study of economic development should be introduced such concept as "entrepreneur potential", which characterizes not only the amount of accumulated professional education, scientific information, practical skills, but also the initiative, the ability to adopt innovative solutions and their implementation.

The aim of this work is to create a dynamic model of accumulation over time of the entrepreneur potential of society and its influence on the formation of technological industrial ways. In this case, we mean the entrepreneur potential of enterprise, industry, region or individual country as the accumulated amount of professional education, experience, creative work, scientific information and knowledge for achieving a certain goal or implementation of a strategy.

Study of the causes of recurrence of long-term fluctuations in business activity in the economy logically leds to the concept of technological multistructure of production. At present the conventional view is the existence of six technological way (Table 1), where the notion of technological way refers to a set of technologies and industries of the same level [2].

Table 1. **Technological way**

№ of structure	Years (approximately)	Kernel of way	Key factor
1	1780-1840	textile industry, pig iron, iron processing, construction of channels	water engine
2	1840-1890	rail and shipping transport, the creation of machines, the coal industry	steam engine
3	1890-1940	electrical engineering, inorganic chemistry, shipbuilding, heavy weapons, steel	electromotor
4	1940-1990	automobiles, motorized weapons, synthetic materials, nonferrous metallurgy, organic chemistry, electronics	internal combustion engine
5	1990-2020	computers, software, telecommunications, robots , optical fiber	gas technologies
6	since 1995	biotechnology, nanotechnology, optoelectronics, aerospace industry	alternative energy sources

Analysis of developed countries shows that the technological way of economy is focused primarily on the use of technology sixth and fifth ways. High-tech multi-product industries provides competitive economy in general and is a source of value added.

Observations indicate that in the market economy development and changing of technological way appears in the form of long waves of economic conditions. Depending on the phase of the life cycle of technological way of changing the rates of economic growth and business activity.

Analysis of the technological level of development in Ukraine shows that existing technology multistructure of production is one of the main structural problems of the Ukrainian economy today. Similarly, as in Russia, heterogeneous technological ways exist and are reproduced in parallel and independently of each other.

Today Ukraine is dominated by the third technological way. The most common is railways, metallurgy, electric power, inorganic chemicals, coal, machinery.

Partially a fourth way used – the development of organic chemistry and polymer materials, nonferrous metallurgy, oil refining, automotive, precision engineering and instrumentation, traditional military-industrial complex, electronic industries, distribution of transport, wide consumption of oil.

As for the fifth technological way, then it accounts for 5.3% in total national economy. This way determine post-industrial type of production (i.e. development of sophisticated computer technology, modern weapons, software, aviation industry, telecommunications, robotics, new materials).

According to the Institute of Economics and Economic Forecasting of NAS of Ukraine, about 58% of industrial output falls on the third technological way and 38% – the fourth way. Output, which falls on the fifth and sixth ways, is about 4%, and the sixth technological way that determines the prospects of high-tech development in the future, in Ukraine almost absent (less than 0.1%).

Modelling of social production under conditions of technological way is characterized by the fact that every time a technology fund built up, the value of which depends the speed of further growth in output. The specified process, according to Nyzhehorodtsev R.M. [3] can be described by a logistic curve, which is given by the differential equation

$$\frac{dy}{dT} = a(y - k_1)(k_2 - y),\ a > 0, \qquad (1)$$

where $y(T)$ – technologically significant result achieved by this technology in the way of total cost T (time spent, costs of human capital, etc.); k_1, k_2 – respectively the minimum and maximum possible technologically significant result of the functioning of the technological way; a - parameter that affects the rate of change $y(T)$. Graphically, dynamic value $y(T)$ in Fig. 1.

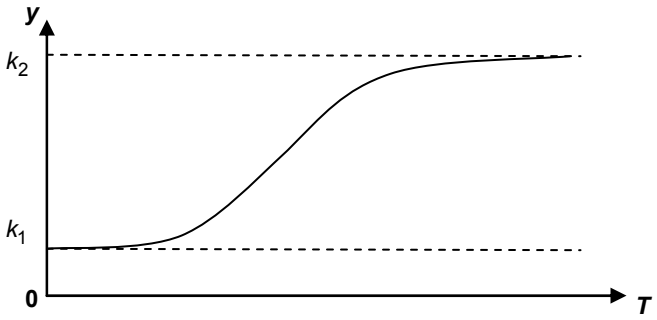

Fig. 1. Dynamics of technologically significant result *y (T)* from cost of resources

Life cycle of technological way ends with a process of substitution, and its length tends to decrease. Graphically process of substitution of one technological way by another over time is established as shown in Fig. 2.

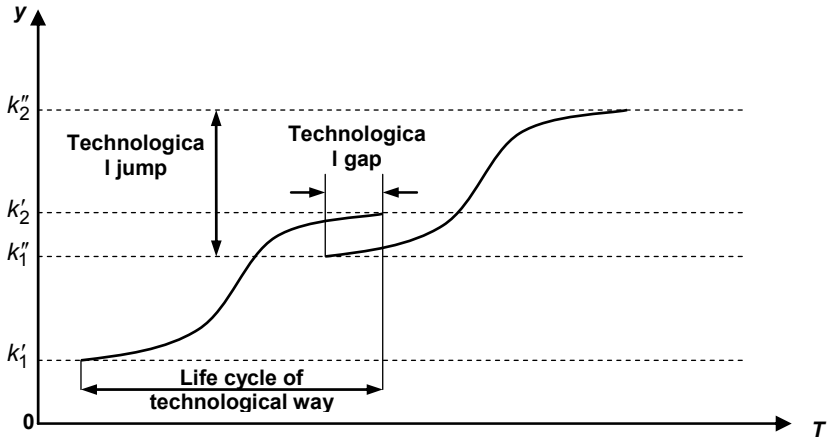

Fig. 2. Substitution of technological way

The process of substitution of technological way can occur more quickly or slowly. In the latter case, while the technological gap is characterized by the absence of the leading technological way in the industry, when technology does not meet the advanced requirements of production (morally obsolete), but the transition to a new way is complicated by lack of development of new technologies.

Long time of life cycle and substitution of technological way leads to uneven economic growth. During the substitution of dominant technology structure the country-leader in level of economic development is faced with moral depreciation of technological capital. At the same time the country-leader get the potential to increase of value added index.

Levels of mastery of technology in areas of material production are determined according to the quantity of added value and thus the total value added, i.e. the gross national product. Distribution of gross domestic product by income and its continued use leads to the realization of the investment policy. Distribution of investments in intensive and extensive, in turn, affects the level of use of technology.

The level of use of functioning technological way by community is a generalizing index, calculated on the basis of existing structure of investments in fixed capital and available labor that can work in new technological environments.

Since the accumulation of knowledge and experience can be evaluated as exponential growth in time with a certain rate, the accumulation of entrepreneur potential can be described by this mathematical model:

$$\frac{dx}{dt} = rx,\ x(t_0) = x_0, \qquad (2)$$

where $x(t)$ – entrepreneur potential, accumulated during t, r – the specified growth rate, in the general case $r = r(t)$.

Thus, the volume of entrepreneur potential with $r > 0$ is a monotonically increasing function of time. Graphically at $r = const > 0$ function $x(t)$ is exponential (Fig. 3).

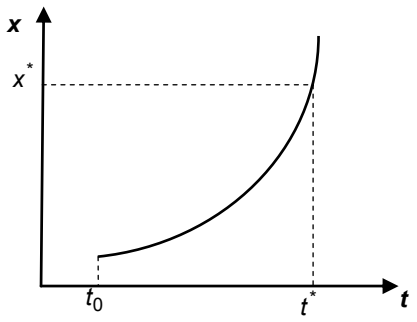

Fig. 3. Dynamics of accumulation of entrepreneur potential

At some time t^* the exponent $x(t)$ reaches a certain threshold x^*, when a new technological way begins to form that may be measured by the volume of gross national product per worker.

Returning to model (1), we determine that it offers two equilibrium states (stationary solutions) k_1 and k_2 ($0 < k_1 < k_2$).

Linearise the differential equation (1) in a neighborhood of equilibrium k_1. Then we have the following linear approximation:

$$\frac{d\bar{y}}{dT} = a(k_2 - k_1)\bar{y}, \quad y = k_1 + \bar{y}.$$

Similarly, in the neighborhood of equilibrium point k_2 we obtain the linear approximation:

$$\frac{d\bar{\bar{y}}}{dT} = -a(k_2 - k_1)\bar{\bar{y}}, \quad y = k_2 + \bar{\bar{y}}.$$

It turns out that at $a < 0$ the point k_1 will be stable, and at $a > 0$ – the point k_2 is stable. Thus, when $a = 0$ there is bifurcation of stability exchange between the two states of equilibrium.

Transition of the parameter value through the value $a = 0$ does not lead to violation of continuity of the differential equation solution (1), but its qualitative behavior is changed because of its asymptotics changing. Speed of solution approximation to stable equilibrium depends on how far the value a deviated from zero.

There is no doubt that the volume of entrepreneur potential x passing through a given threshold x^* includes the internal mechanisms of formation (development) of the next technological industrial way. This entitles you to an appropriate mathematical model based on the theory of bifurcation (catastrophe theory) [4, 5] and use with method of "internal bifurcation" [6]. That suggested a dynamic model:

$$\frac{dx}{dt} = rx, \ r > 0, \tag{3}$$

$$\frac{dy}{dt} = (x - x^*)a(y - k_1)(k_2 - y), \ a > 0.$$

Graphically, the dynamics of development and transition of economy to a new technological way with taking into account the effect of substitution of technology, shown in Fig. 2 may be represented in Fig. 4.

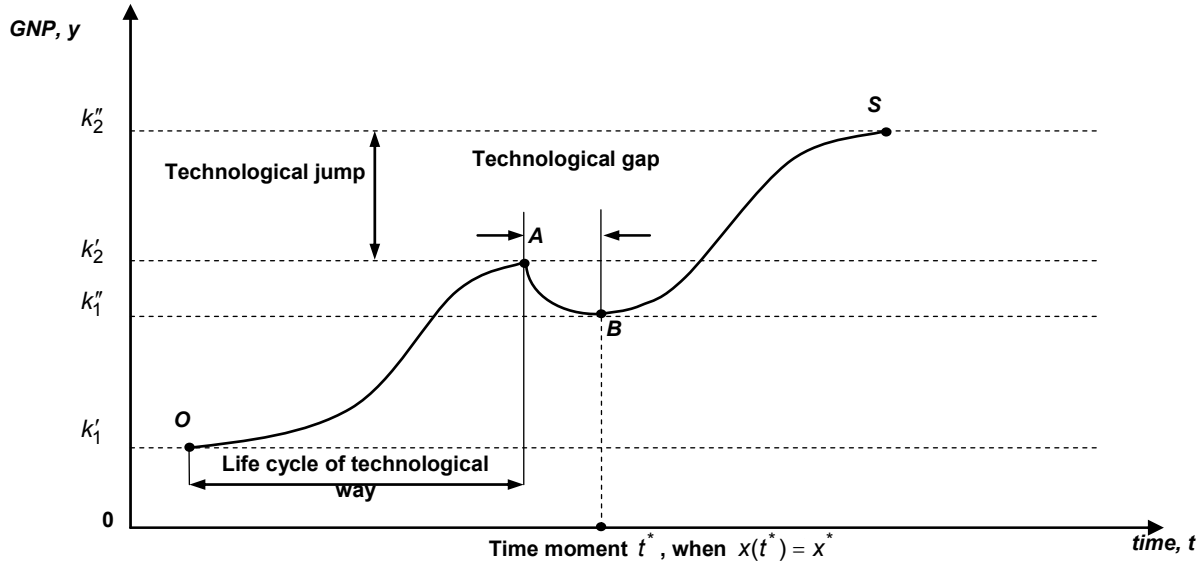

Fig. 4. Dynamics of development and transition of economy to a new technological way

In Fig. 4 point A corresponds to the state where the previous technological way almost exhausted and it was decided to develop the next technological way, although the value of the gross national product per worker $x(t)$ not reached its threshold x^*. Point B corresponds to the state where $x(t)$ reaches its threshold x^*. That is, the curve AB describes forcible state solution of development of the next technological way, although the level of entrepreneur potential has not reached a threshold x^* yet. At that time, GDP per worker decreases, because the existing entrepreneur potential is not able to fully master the new technological way. Curves OA and BS describe the process of operation of the previous and next way.

Note two features of solutions of the dynamic model (3). The first feature – the presence of technological gap AB (Fig. 4), when GDP per worker decreases (transition costs). This feature explains the cyclical process of oscillating increase of economic (technological) progress observed in the world for centuries. Decreasing GDP per worker has a sweeping character, which gradually becomes smooth deceleration, ending its smooth increase in the transition of the entrepreneur potential through threshold x^*. The second feature – the irregularity of the dynamic system (3), which illustrates well the different meaning of parameters x and y. On the one hand, the parameter y can go to two alternative values k_1 and k_2 thus by its values it is easy to estimate the state of the system. On the other hand, the difference in the dynamics of this indicator is secondary because the primary is the transition value x by threshold x^*. Moreover, estimating the similarity of x and x^*, one can estimate the principal possibility of transition to a new state. So generally the first indicator (i.e. x') is most valuable for the identification of the system.

Conclusion. Thus, in this paper it is obtained the new scientific result on the dynamics of GDP per worker associated with the transition of the economic system to the

next technology. It is shown a significant qualitative impact of entrepreneur potential on the dynamics of the respective GDP per worker. The features of the corresponding cyclic development of such systems are analyzed. Simulation results show that between the development of technological way and entrepreneur potential there is a positive relationship, but this relationship is not easy and developed models show that the transition is the technological gap and the gap meaningfully related to the voluntarist decisions and productivity decreasing.

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Надійшла до редколегії 05.05.12

JEL classification F21

J. Mackevičius, habil. Dr., Professor,
E. Ragauskienė, Doctor,
Vilnius University

ECONOMIC ANALYSIS AND MANAGEMENT OF STATE PROPERTY CASE OF LITHUANIA

Державне майно слугує суттєвим забезпеченням для гарантування вдосконалення якості життя суспільства, зростання економічного добробуту, соціального страхування, політичної стабільності та зв'язного розвитку в усіх аспектах життя. Мета статті – дати аналіз вартості державного майна та адміністративної системи.

Ключові слова: державне майно, класифікації майна, оцінка, адміністративна система.

Государственное имущество служит существенным обеспечением для гарантирования усовершенствования качества жизни общества, роста экономического благосостояния, социального страхования, политической стабильности и связного развития во всех аспектах жизни. Цель статьи – дать анализ стоимости государственного имущества и административной системы.

Ключевые слова: государственное имущество, классификации имущества, оценка, административная система.

State property serves as an essential provision for ensuring the improvement of society's quality of life, the growth of economic welfare, social security, political stability and cohesive development in all facets of life. Purpose of the article is to perform an analysis of state property values and their management system.

Keywords: state property, property classifications, valuation, management system.

State property is understood as a particularly important priority in the state's economic policy as it ensures a country's economic prosperity, democracy and the state's obligation to guarantee the wellbeing of its citizens. This is especially relevant in this stage of Lithuania's economic development when factors of the global financial crisis have had a negative impact on the country's social and economic welfare.

The problems of setting the actual value of state property, its effective use and management has been highlighted for many years, yet it remains even today. Property valuation based on market principles is applied only to separate property objects, yet the total value of state-owned property has not been calculated [1]. In this respect this topic is rather complex as it encompasses the variety in property concepts and property classification, methodological aspects of property records and analysis, the property use, disposal and management system, as well as directions in this system's reconstruction.

State property questions have received minor attention in academic literature. A majority of the reviewed literature sources analyze property, or more precisely, its category as a specific academic or field of activity object, and do not cover a category such as state property. In other words, state property and questions surrounding its use and management are hard to allocate to a specific field of economics.

Object of the research – state-owned property.

Purpose of the research – to perform an analysis state property values and the management system.

Research methods – in order to achieve the set purpose and meet the objectives, information source and information collection, grouping, comparison, systemization, detailing and summary methods of academic literature, legal acts and methodological resources were used.

Problems in state property accounting, analysis and value setting

The valuation of property has deep traditions in international practice. National property was calculated for the first time in 1664 in England, later in 1789 in France, in 1805 in the United States, and in 1864 in Russia. The methodological problems of measuring national property have been analyzed in international statistical congresses since 1853. In 1947 the International Association for Research in Income and Wealth was founded [4].

Data about national property was presented for the first time in the 1994–1995 edition of the Statistical Yearbook of Lithuania, giving rather general information which set Lithuania's national property at 129 billion Litas as of January 1, 1996, yet applying the System of National Accounts classification it was valued at over 166 billion Litas. Explored useful mineral resources valued at 47 billion Litas (or 28.3%) dominated in the national property structure, followed by enterprise and company property valued at 39 billion Litas (or 23.5%) [5].

In 1997 and 1998 the Lithuanian Department of Statistics first prepared and published comprehensively detailed bulletins titled "National property of Lithuania", where a new property classification was presented according to the System of National Accounts (henceforth – SNA). In it property was divided into two main components – non-financial and financial.

In the System of National Accounts (SNA) property was calculated, based on international property type classifications and should be valued at market prices that applied at that time. Unfortunately, once statisticians admitted that the property being calculated was not the entire country's national property, and that Lithuanian statistics only covered a part of the country's property (hopefully a larger part), after the mentioned two years of attempts the calculation of Lithuania's national property was aborted. It should be noted that the accounting of all property appeared especially problematic also due to the