



Economic Theory

Valeriy HEYETS

**MODERNIZATION IN THE SYSTEM
«SOCIETY – STATE – ECONOMY»**

Abstract

All common and contradictory in society, state and economy on the way to modernization transformation is analyzed; concerning all mentioned above, the role of personal-human factor in its transformation is defined. The influence of globalization on county development in cooperation with world and national is revealed. The role of state in unity of society and personality, its capacity to organize and implement the process of recourses usage and knowledge accumulation in combination of moral and mind, what can't be avoid without effective state and public control over processes of modernization is grounded. The public mood towards some constituents of social system of Ukraine is analyzed.

Key words:

Modernization transformation, national states, postmodern model, public conciseness, knowledge, mind, moral, human capital, social state, degree of state presence, state and public control.

JEL: A13, P20.

© Valeriy Heyets, 2014.

Heyets Valeriy, Dr. of Economic Sciences, Prof., Member of the Academy of Sciences of Ukraine, Institute for Economics and Forecasting NAS of Ukraine.

(Continued from the previous issue)

Part 2.

The population about the social order and the role of government

However, after the beginning of the market oriented reforms, in order to minimize the transformation costs, it was supposed to create a social state with the developing under market democracy and freedoms civil institutions assuming the responsibility for the observance of social standards allowing to overcome the negative consequences of the upcoming individualization. Because that individualization, even despite the high educational level, often minimizes the moral values in the interaction between people, who, in terms of declarations, adhere to the liberal and democratic foundations of the social order, but, in reality, favor a strong and efficient state with high morale and educatedness, although, in practice, in many case, it is the paternalist states that usually emerge and often even with an oligarchic form of governance.

In the ongoing processes, a state, first of all a social one, ensures the functioning of the economic institutions within institutional framework rather than simply aids the bereaved. Thus, a social state, on the one hand, overcomes, to a certain degree, the inequality between people. Despite everything, with the domination of the neo-classical doctrine, the overall inequality increases because of the prevailing individualized and often immoral behavior. However, the state supports the interaction between different institutions, in whose stability both businessmen and other individuals are interested. Besides, the standards and rules of both businessmen and other individuals are observed within various formal and informal institutions including those reflecting the traditions and foundations of public life.

On that path, besides overcoming the poverty in order to «...reestablish the real wealth, it is necessary to elaborate different assessment criteria, which should be outside the global supermarket. We should remember the real currency of life is life itself»¹. And, as life goes on, in social and economic dimensions, due to the performance of functional duties, the state, in order to implement one or another scenario, should have characteristics of the social order to which the population is oriented, which should define the degree of the state's participation in people's conscious choice of desirable forms of governance.

¹ Above cited work by Vandana Shiva.

Table 1

Characteristic signs of the public order, to which Ukraine's population adhered in 2002–2013

№	Degree of state intervention	2002	2009		2012	2013	
			for	against		for	against
1.	State's intervention in economic management						
	• combining government management and market forces	46,1			42,4		
	• minimizing the government's Intervention	6,5			6,1		
	• return to central planning	29,3			33,4		
2.	I support the followers of						
	• socialism	27,5			22,9		
	• capitalism	12,1			8,9		
	• both without conflict	16,3			19,9		
	• neither	22,4			26,9		
3.	What do people fear most of all						
	• unemployment	73,0			79,4		
	• wage, pension arrears	64,7			65,8		
	• price rise	71,3			80,6		
4.	Public order						
	• insufficient	75,4			73,2		
	• sufficient	4,1			6,2		
5.	Law enforcement						
	• sufficient	70,8			71,8		
	• insufficient	5,2			6,1		
6.	Negative attitude to privatization of						
	• big enterprises	55,1			62,7		
	• small enterprises	21,4			31,1		
	• land privatization	27,0			55,8		
7.	State social guarantees for economically active population including:					77,7	13,6
	• provide jobs for those wishing to work					80,9	10,5
	• provide decent living standards					67,3	21,8

№	Degree of state intervention	2002	2009		2012	2013	
			for	against		for	against
	• provide social privileges, aid, bonuses					80,9	10,5
	• provide proper care for working parents' children					73,2	17,9
	• provide interests of the disabled in social life					86,0	7,2
8.	Equal opportunities for all citizens:						
	• based on legal equality, equal rights					74,0	–
9.	Education:						
	• on paid basis					7,2	78,1
	• available high quality high education for all citizens					77,4	13,7
10.	Full state support of health care					72,1	1,0
11.	Government measures to reduce income difference		88,0	3,8			
12.	Government should provide jobs for all wishing to work		60,5	0,9			
13.	For society to be just, difference in living standards should be insignificant		67,8	7,2			
14.	State should regulate income stratification		56,0	20,4			
15.	State should be more active in taking the excessive wealth from the rich to distribute it among the poor		40,6	31,1			
16.	Ukraine rather lacks a strong hand		59,0%	26,0% (of democracy)			

Sources: Ukrainian society 1992–2012. (Ukrainian) – Kyiv: Institute of Sociology, NAS of Ukraine, Kyiv, 2012. – Pp. 530, 531, 533, 591, 594 (items 1–6); Main supports of social policy in the opinion of Ukraine's population (Ukrainian). Oleksandr Yaremenko. Ukrainian Institute of Sociological Research. 8.VIII.2013. – P. 8 (items 7–8); Website of the Razumkov Center. – <http://razumkov.org.ua/ukr> (item 9); European social investigation (Ukrainian). – <http://lss.nsd.nib.nuo> (<http://www.ess-ru.ru/index.php?id=334>) (items 10–11); Main supports of social policy in the opinion of Ukraine's population (Ukrainian): Oleksandr Yaremenko Ukrainian Institute of Sociological Research. 8.VIII.2013. – P. 5 (items 12–15); Some theses on value references of Ukrainian people. (Ukrainian) Sociological Group. May Rating, 2013 (item 16).

Table 1 shows the change of the choice, by Ukraine's population, of the degree of the state's intervention, which is the result of the reforms that have taken place in this country during more than 20 recent years and that made certain changes, first of all, in social order and economic environment.

To answer the asked question, we gathered some data on the people's assessment of the state's participation in economic management and socially significant processes. If we consider the three components related to economic management, then, 46% respondents in 2002 and 42% in 2012 favored the combination of government intervention and market forces, while only 6% voted for the minimization of government intervention. 33% of respondents were ready to return to central planning in 2012, while, in 2002, the corresponding figure was 29%. Thus, almost 76% favored and continue to favor large scale government participation in economic management, though without excluding certain market mechanisms.

Now about the support of different degrees of government's participation in social life: the share of the supporters of socialism declined from 27% to almost 23%, and those of capitalism declined from 12% to 8,9%; while the share of supporting both but without conflicts grew from 16% to 20%, and those supporting neither – from 22% to 26%. Actually, almost one third of the respondents wish a new model of social order, among whom the supporters of capitalism are very few. And that is clear, because capital often accumulates illegally leading to both moral and legal illegitimacy. That has led to a considerable stratification of the population both in Ukraine and in the whole world. Those supporting the high degree of government participation in social order are over one fourth, which suggests that the state bears responsibility both for the current development and for further changes. Then let us consider what people fear most of all. It is, first of all, unemployment. The share of such people is on the rise (about 80% in 2012). Then follow the wage arrears (almost 66% in the same year); in 2013, that share may be even higher because of the massive wage arrears, which is important for those fearing price rises (whose share is over 80%).

Unemployment is one of the biggest macroeconomic problems, for which the state should be responsible even in a market economy (as pointed out by the respondents in Ukraine). The answers to the other questions on the state's role suggest that people would like the government to control the prices and wage payment. In 2012, almost 73% voted for the government's responsibility for public order, and 76% voted for strict law enforcement, which should be undoubtedly considered a direct state's function.

The state has been implementing and continues to implement privatization, which is negatively evaluated by the population. Thus, 63% of respondents voted against the privatization of big enterprises, 31% against that of small enterprises, and 53% vote against land privatization. According to data of a sociologic monitoring carried out by the Institute of Sociology of NAS of Ukraine, in

2013, 60% favored return of big private enterprises to state property, and 60,8% were in favor of renationalization of private land (those opposing constituted 6,4% and 20.3% respectively)². That means that, in this sphere too, the state has been acting extremely negatively, though it does actively participate in the corresponding processes (by promoting, initiating and implementing the illegitimate process of appropriation and allows legal nihilism as regard direct embezzlement of property and resources). As a consequence, the economic crisis periodically aggravates in Ukraine, and, what is especially important, a deep political crisis is taking place provoking the deepening of the social contradictions and even upheavals. State social guarantees are favored even by those economically active and employed and by those who wish to work: 81% are in favor and 10% are against (the author could not find any data earlier than those of the above mentioned 2013 poll). And such results are registered after more than 20 years of market oriented reforms.

Analyzing the data of Table 1, we can see that people consider that state should be responsible for:

- Acceptable living standards (67%);
- Provision of social privileges, aid, bonuses (81%);
- Proper care of the children of the working parents (73%);
- Interests of the disabled (86%);
- Equal opportunities for all people based on their equality before the law (74%).

The state has initiated the introduction of paid education. As a result, today 78% are against it, while 77% favor the availability of high quality public education. 72% favor completely public health care (only 1% is against).

As regards the degree of state intervention in the income distribution, 88% favor the government's measures against income differentiation.

The state's duty to provide jobs for all wishing it is supported by 61% with 0,9% against. 68% of respondents consider that, in order for the society to be just, the differentiation of living standards should be insignificant. 56% favor the government's regulation of income differentiation (with 20% against), and 40% favor such regulation by means of depriving the rich with part of their incomes for the benefit of the poor.

And, finally, 59% consider that Ukraine lacks a strong hand, and only 26% consider that the country lacks democracy.

² Ukrainian Society 1992–2013. Condition and Dynamics of Change: Sociological Monitoring; Institute of Sociology (Ukrainian), NAS of Ukraine. – Kyiv, 2013. – P. 454.

Let us quote the results of other research, but in somewhat different aspect. If we consider the process of necessary transformation of the state and socio-economic order, then we deal with the modernization of the state. Also needed are the modernization of the economy and social sphere, because otherwise one can expect chaos (probably with violence) in economic and social life. Because the extremely high people's demands from the state and its institutions, on the one hand, and, on the other hand, the low level of trust on the part of the same society are confirmed with the results of a sociological monitoring carried out by the Institute of Sociology of NAS of Ukraine: in 2013, the level of trust to the President of Ukraine declined to 10,9%, with the level of distrust at 66,9%, the trust to the Verkhovna Rada to 4,6% with distrust at 76,6%, and trust to the Government of Ukraine to 8,1% with mistrust at 72%³. As regards the courts, according to the results of the same monitoring, only 4% of respondents consider that they serve for Ukraine's citizens, and 55,5% suppose they serve to anybody who pays⁴. The above stated clearly calls for change in the model of state organization by way of its modernization.

As regards modernization, let us dwell upon the works by Chinese social scientists, in particular, those investigating the processes of modernization, including state modernization, which have taken place in many countries during the recent two hundred years.

Much in the state modernization is determined by economic reforms, which is quite understandable. Here the primary modernization is related to industrialization (see Table 2).

There exist a few characteristic indicators and criteria used by the authors as signal indicators, among them is the ratio of agricultural value added to gross domestic product. In the industrial countries, it is greater or equal to 5% and less or equal to 11%. In this relation, Ukraine's indicators are characteristic for the industrial countries in prosperity phase, although it is clearly not the case with the modern Ukraine. At the same time, in 2006, the above mentioned ratio amounted to 8,6%, and in 2011 to 9,5%, which, to a certain degree, testifies about the presence of de-industrialization instead of re-industrialization, the demand for which, in the world is growing even among the developed countries, and such countries as USA and Great Britain, as well as other EU countries have already begun its implementation. The developments in Ukraine are the result of the transformation processes whose initiator was the Ukrainian state. People's attitude to those processes is negative. According to the polls, the developments in Ukraine are going in the wrong direction, and the Ukrainian society is rather characterized by disorder (49,6% of respondents), poverty (35,7%), devastation

³ Ukrainian Society 1992–2013. Condition and Dynamics of Change: Sociological Monitoring; Institute of Sociology (Ukrainian), NAS of Ukraine. – Kyiv, 2013. – P. 481–482.

⁴ Ibid. – P. 454.

(32,8%), opposition (25,0%), and deadlock (22,9%), than by upturn (only 2,6%), accomplishment (2,3%), wealth (5,2%), cohesion (3,8%), and freedom (5,7%)⁵.

Table 2

Relationship of classification standards and values of the signal indicators of primary modernization in Ukraine and in the industrial countries with 200-year economic history of modernization, %

Indicator	Ratio of agricultural value added to GDP		
	Industrial Countries	Ukraine	
		2006	2011
Prosperity phase	$\geq 5, \leq 11$	8,7	9,5
	Ratio of agricultural employment to total		
Development phase	≥ 15	17,5	16,7*
	≥ 30		

*Less additional agricultural employment involving about 1,4 workers.

Source: Data about classification standards and values of the signal indicators of primary modernization in the industrial countries are given according to: «Overview report about modernization in the world and in China (2001–2010) edited by He Chuantsi Peking University PRESS, 2010. – P. 61.

The ratio of employed in agriculture to total in the development phase, in the industrial countries, amounts to over 15% and less than 30%, while in Ukraine it was 17,5% in 2006, and 16,7% in 2011. But those figures do not include additional agrarian employment whose expert estimate is 1,4 mln workers. Additional agrarian employment is part time agrarian employment. With the later component, the above mentioned ratio is over 17%. That means that, despite some signs of industrial transformations, Ukraine's village is, according to V. Vasiutinskyi, a cell of poverty culture, because it is characterized by very sad phenomena, which are not so economic as psychological: the rural youth do not see any bright future, they cannot obtain profession, do not care about their own health, spend the bulk of their efforts on survival, escape from the uninteresting reality to alcohol and drug addiction, and almost nobody hopes for the creation of favorable conditions for them to earn decent wages, and the state does not en-

⁵ Ukrainian Society 1992–2013. Condition and Dynamics of Change: Sociological Monitoring; Institute of Sociology (Ukrainian), NAS of Ukraine. – Kyiv, 2013. – P. 527.

sure any economic and political conditions for the development of small and medium business.

As regards the qualitative indicators of the modernization of Ukraine's economy, the available data testify that the share of gross value added has declined from 27,7% to 21,8%, which, against the background of the growth of the share of agrarian value added, gives grounds for a negative conclusion about a certain comeback to agrarian activities, which inevitably hinders the post-industrial modernization.

Besides, according to the poll conducted in 2013, the system of values implemented in Ukraine during the years of independence (consisting of such values as private property, enrichment, individualism and aspiration to personal success) is rejected by 48,0% of respondents and supported by only 26,0%. At the same time, 76,8% of respondents consider that such values as social equality, collectivism, mutual aid, and state support are no longer actual, and 73,1% consider that the modern Ukrainian society is unfair, and the opinion that Ukraine never became a social state is shared by 60,4% of respondents, although, in the beginning of the reforms, it was exactly that guideline that was proclaimed⁶. In sum, we can argue that, due to the changes in the Ukrainian society and economy, an abandonment of the Soviet system of economic organization and corresponding values has taken place without any massive reception of the new values in the social life against the background of the degradation of the industrial level of development (while the world is moving towards the post-modern changes in the society and economy).

As regards the so called secondary or post-industrial modernization, here in Ukraine a few negative tendencies are observed. The share of expenditures on R&D in total GDP has fallen almost by 19% and now constitutes only 21% of the globally accepted level (3,5%), i.e. 0,76% of GDP. During that period, the share of scientists and engineers engaged in R&D per 10000 people declined to 10%. The number of patent applications per 1 million people declined almost by 24%. The signs of secondary modernization are taken as an indicator from the investigations by Chinese scientists. The above mentioned figures apply to the accumulation of knowledge, while, as regards the promotion of knowledge (making it everyday knowledge), the situation has somewhat improved. The share of the population receiving high education in the age of 22–24 years has grown by 6,8%, and the share of those receiving secondary education in the age of 10–14 years grew by 4%. In the age group of 15–16 years, the share of those receiving secondary education remains unchanged. The number of internet users per 100 people has grown 7,7 fold. Besides, such an indicator as average life expectancy from birth has grown by 4,5%, child mortality has reduced by 23%, number of doctors per 10000 people has declined by 1%, and the rate of growth of the

⁶ Ukrainian Society 1992–2013. Condition and Dynamics of Change: Sociological Monitoring; Institute of Sociology (Ukrainian), NAS of Ukraine. – Kyiv, 2013. – P. 529–532.

urban population has increased by 1,2%. As we can see, the overall situation is quite contradictory, which makes us think about the following: in terms of the accumulation of new knowledge and expenditures on its propagation, we are at an extremely low level, while, in terms of knowledge transfer and borrowing, there is a seemingly positive process of secondary modernization, though based on the policy of borrowing. In this relation, one should answer the question how, based on J. Mill's postulate, the state should behave in case of a proposal of the change of its model. The answer is that it should be moral, which to a great degree is identical to its high sociality (that we have not attained) and enlighten and capable to independently (without borrowing) solve the tasks of modernization in social and economic dimensions.

The state, in the process of self-abnegation of capital and its conversion in social human capital (which was discussed above), socializes together with the capital performing and expanding its function of the creation of common interest as a contradiction (and addition) to the private interest represented by capital. Without that basic process, the state's «educatedness» becomes abstract.

State is an institutional incarnation of will, and intelligence and educatedness are institutionalized in universities and academies etc. Union of will, educatedness and intelligence is the problem of the interaction in the triangle: market (capital) institutions – educational and research centers – state institutions. Here, the state should perform its specific function of the supply of common interest consisting in the creation of institutional conditions for harnessing the synergic potential of education and capital. Also, it can act as an agent responsible for the supply of knowledge as a public good, although knowledge itself is more common (individual, collective and public) good. In certain institutional conditions, education may be predominantly private and function efficiently and ensure the development of individuals and society. The definition of such conditions depends on the concrete mechanisms of the interaction between the elements of the above mentioned triangle, but the responsibility for the support of such a mechanism lies, first of all, on the state, which institutionally conditions the interaction between the elements and, in so doing, participates in the process of the accumulation of knowledge and conversion of its creativeness into an everyday boon of all the members of the society.

Ukraine's economy belongs to the group of the so called transition economies or emerging markets. That is a result of the change in the approaches to social order as an object of so called space expansion of the capitalism, which is a result of social developments based on the capitalist relations.

In the basis of the spacious expansion of capitalism, if it has a sound origin, as F. Fukuyama argues, there should be enough social capital whose accumulation was discussed above. Besides, in order to carry out the corresponding social acts, one should eventually have a ready social technology, which, in accordance with I. Kosavin's definition, represents certain activities of organization-

and-managerial and socio-project character based on scientific knowledge with whose help it is possible to ensure necessary transformations.

As a result, the conscious social action as a social technology consciously offered by the state should rely on people's creative work oriented to societal development. However, the attempts to introduce, on the part of the state, social technologies in order to change Ukraine's social and political order, appeared to be, as we already mentioned, such that led to a real change of certain characteristic features of social life while failed to change others. As suggested by the results of the sociological poll shown in Table 1, people's demand for Ukraine's social order is very specific and has a clear tendency to a considerable increase in the state's role in many spheres. That means that this country lacks social capital to ensure a rational organizational activities of the business toward, on the one hand, minimization of corruption and peculation, and on the other hand, revival of people's individual activities with a simultaneous increase in the responsibility for obtained results. Without that, as data show, there appear to be very few chances for positive and stable development. In social technology, as I. Kosavin further suggests, a principal place is occupied by scientific knowledge, and namely the humanitarian scientific knowledge, which is instrumental in the creation of moral foundations of a single person, society and state. In our opinion, endogenous scientific achievements appeared to be few, and those exogenous were not welcome and were mostly implemented in a distorted way, which led to the emergence of the oligarchy with all ensuing consequences.

On the whole, the above mentioned means that, for success and stability of the modern capital and its socialization, it is necessary to build, in its model, a possibility of the creation of a new social reality oriented to the increase in the production's value added with the use innovative technologies and socialized results of labor based on moral foundations and on knowledge accumulation (because knowledge as a whole and humanitarian knowledge and social technologies all raise the productive force of labor). Thanks to the corresponding social technologies based, first of all, on humanitarian scientific knowledge, the interaction between man and production raises social (human) capital able to successfully capitalize people's creative activities. Without that, it is useless to dream of a sound capitalist expansion whose necessity is pointed out by F. Fukuyama.

The debate what the creative power of human mind can and cannot realize in the sphere of innovations, which are used in human activities, as a rule, is reduced to the argument that intellectual activities are limited to the possibilities of reproduction, and the rest is product of the market, hence intellectual activities, as having a creative component, should produce something new, which is not known so far.⁷ As it turned out, without intellectual creative activities, a market

⁷ Nogaev I. Economic Pragmatism Disproves F. Hayek's Conception of «Dispersed Knowledge» (Russian) // SShA. Kanada. Ekonomika. Politika. Kultura. – 2013. – No 9. – P. 38–50.

implemented on the basis of the borrowing technologies reproduces its properties in the worst way, which is illustrated by the fact that the endogenous creative abilities in individual countries were clearly insufficient and had no chance to become everyday boons, i. e. such that people would massively use them.

Theoretical analysis and long practical experience has proved the correctness of the attitude that human mind's activities make it possible to create additional productive force of the labor, while the possibilities of market itself are quite limited, especially during crises that have an immanent property to periodically emerge. In the context of the above mentioned discussion, let us pay attention to the fact that an important detail is usually missed. As D. Hume argues, «moral rules are not a consequence of our mind»⁸. The key point in that statement are the words «are not a consequence of our mind» eventually suggesting that the human inventions belong to the manifestations of the «creative origins» of the competing market forces.

But let us leave for a while that part of D. Hume's statement and dwell upon its other part, in particular, the «moral rules». Moral rules are far from being a sensation i.e. a product of the corresponding human sensation organs, because they can and should be treated in the context of the so called doubled character of social life, in which, according to M. Crozier's interpretation⁹, social regulation, i.e. moral rules expressing the society's thought, are only represented through the fulfilment of the requirements established by written, unwritten or habitual rules and individualized elements of free enterprise, which are realized based on deregulation. The latter, according to Kohlberg's hypothesis, which is used in psychology, makes it possible for an adult man to base his moral standards on the principles that he himself considers and adopts as directly (independently of the society's opinion) significant. In M. Crozier's opinion, social and individual elements complement each other and have different relative significance at different stages of development¹⁰.

Based on such an interpretation of social and individual elements, «moral rules» simultaneously have internal individual measurement and external (relative to the individual) public (social) one, which, however, is an internal one relative to the society as a whole, where moral rules are defined not only based on the sensations received by man from his sensation organs, but also based on social rules and traditions, which are the result of the accumulated knowledge.

On the whole, it is arguable that, thanks to independent perception of moral standards and rules based on the available knowledge, the principles of its consideration and perception and certain abilities realized in virtue of mind's creative capacities, every man creates standards and rules, which are not gen-

⁸ Hume D. Works in 2 Volumes (Russian). – Vol. 1. – Moscow : Mysl, 1965. – P. 604.

⁹ Crozier M. Modern State is A Modest State. Another Strategy of Measurement (Russian) // Svobodnaya Mysl. – 1993. – No11. – P. 35-43.

¹⁰ BRITANIKA. Table Encyclopedia (Russian). – Vol. 2. – Moscow : ACT, 2006. – P. 1236.

eral and averaged, but individual and special, thanks to which man is a personality having the ability to carry out activities resulting in the accumulation of new knowledge.

Based on the fact that man's conscious activities in the society relies, on the one hand, on the laws of biological interaction with the environment, and, on the other hand, on moral and ethical standards of social life (which is a result of the action of corresponding laws created by man's intelligence in the course of the organization of people's co-existence), in not so remote future, it will become real to shape self-developing and self-shaping individuals able to new «productive» life independently of the existing laws of human life. Thus it will become possible to obtain a new quality in post-human society meaning that, in the course of modernization, the society may produce a brand new organization of its activities. In case of an uncontrolled transformation of the existing society, mankind is exposed to withering away of the past communities and emergence of new ones having unusual capacities, which threatens man and his genetic code.

The modern science has attained the limit values opening the possibilities to change the existing biological borders and open and define new ones, which could lead to «...incredible socially significant ruptures».¹¹ All that is going on against the background of the well-known attitudes that science, generating the knowledge about nature and society, allegedly develops out of any regulation and does not need any external intervention, because its progress is determined by certain ethical standards of the scientists» behavior based on self-control and fight against pseudoscience and refusal from the use of scientific results beyond the humanistic ideas of the conservation and development of society and individual. The history of the generation of new knowledge and possible consequences of its use knows a lot of such refusals from certain researches for the sake of humanist ideas, conservation of man and his environment. At the same time, the great scale of the impact of fundamental discoveries has very often caused government's and society's control over research activities. That is even more urgent now, when science has deeply penetrated in the understanding of the world making it possible to change man by altering his psychological «ego». The threat of chemical, biological and radiological weapons and terrorism, have made individual countries introduce corresponding behavior codes (for example, USA in 2010). There are many other similar initiatives around the world. However, the problems of control over scientific projects of double destination despite the common recognition of the global importance of the corresponding threats, remain unsolved, and the investigations have reached the level allowing to create new forms of life producing species able to self-reproduction. That is why here it is impossible to do without efficient government and public control. That is another argument in favor of efficient state participation in possible post-industrial

¹¹ Ronald Nobull. How to Keep Science in Firm Hands (Russian) // Rossiya v global'noy politike. – 2013. – Vol. 11. – No 6. – P.160. (reprinted from journal Foreign Affairs, No 6, 2013).

transformation of economy and society based on new scientific discoveries. In the process, the state itself should undergo modernization under the influence of those very innovative industrial and social technologies, which have been developed in the course of endogenously organized scientific activities, and which are able not only to reproduce other people's experience, but also to create new knowledge.

The article was received on May 27, 2014.