Эта задача была решена в работе [5]. Был получен темп роста λ = 1,011, то есть, такой же, как в данной работе, полученный другим способом из финансового баланса. Это подтверждает правильность расчётов, а также ещё раз наглядно показывает двойственный характер ЛТМ.

Также в работе [5] был рассчитан вектор интенсивности для 2007 года, который позволил бы модели развиваться по магистрали. Для 2012 года, с учётом прогнозной численности трудовых ресурсов 21,930 млн. чел. (прогноз автора по данным [4]), такой вектор будет выглядеть так:

$$\hat{\mathbf{y}}(2012) = (1{,}322;\ 0{,}011;\ 1{,}054;\ 5{,}448;\ 0{,}832;\ 1{,}026;\ 2{,}853;\ 0{,}200;\ 2{,}033;\ 1{,}186;\ 1{,}826;\ 0{,}948;\ 0{,}944;\ 0{,}645;\ 0{,}391;\ 1{,}210)$$

Этот вектор показывает структуру занятости по различным процессам, которая обеспечивает пропорциональное использование и производство продуктов с учётом межотраслевых связей. Поддержание такой структуры производственной системы может обеспечить равновесный экономический рост, что является одной из основных целей экономической политики.

В данной работе исследовано такое свойство ЛТМ, как двойственная устойчивость, на примере украинской экономики. В результате выявлено, что система цен модели является устойчивой, а система интенсивностей – нет. Было рекомендовано стабилизировать неустойчивый элемент, приближая масштабы производства предприятий различных сфер деятельности к рассчитанным идеальным интенсивностям.

Однако на практике это не всегда возможно. Во-первых, из-за ограниченных возможностей экономической политики. Во-вторых, из-за неучтённых ограничений (природные и трудовые ресурсы, международные отношения и т.д.). Ещё одним недостатком модели является предположение об отсутствии технологических изменений (коэффициенты технологических матриц считаются постоянными).

Многие из этих ограничений можно учесть в модели, расширяя её дополнительными продуктами и процессами, например, как это описано в работе [6].

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THE INNOVATION POLICY AND POST-CRISIS ECONOMIC DEVELOPMENT

Introduction. In the situation more complex business environment, initiated by the manifestations of the global economic crisis, increasing the relevance of rational choice mechanisms and the modernization of economic policies that will ensure national business development firm inner foundation. Position of domestic business is determined by standing national economy – whether it is strong, so strong will and position of domestic companies. Conversely, the stability of industry and services in a rapidly changing market place ensures a stable positive macroeconomic indicators, and in the first place - economic growth. In a weak economy, the crisis can not be expected for a strong national business sector and of enhancing the living standards. Therefore, to strengthen the positions of Russia's business in the domestic and global markets is necessary to create conditions for the dynamic development of the country's economy, its modernization.

In general terms, modernization of the investment operations related to the improvement of active fixed production assets, bringing them into compliance with the state of modern techno-economic level. It is aimed at overcoming or preventing the degradation of the material and technical base of the economy, its hardware. Thus, the modernization of the economic system is inseparable from its efficiency, since a morally deficient and physically

worn-out element-based production of competitive products is difficult. To overcome the negative trends is possible by structural adjustment, better organization of innovation and other agents of development and impact of the state of economic dynamics, providing a new high technology and social quality of economic development, more resilient to external economic fluctuations.

1. Structural aspects of global crisis

The current crisis is structural in nature, that is, involves a major change in the proportions of industry of the world economy and upgrade its technological base. Consequences unfolding before our eyes of the world crisis, in addition to general adverse effects, and have regional specificity. Thus, in the case of the domestic economy, they add to the traditional, historically formed structural imbalances.

The global economic crisis, affecting the interests of all countries, largely initiated by the biggest economic challenges of the modern world - the U.S. It is therefore possible that the global economic recovery, its expansion into new trajectories of development will occur as a result of the transformation of the North American economic system, it gained a "new face". In this connection, the specificity of structural imbalances in the U.S. economy. Background current recession the U.S. economy developed over the last thirty years. The mechanism of the structural crises include, mainly, the elements of the financial system and the scope of monetary and credit relations. Eloquent example of the impact of deferred instruments of financial policy on the situation in the real sector and the state of socio-economic relations is the trend in the refinancing rate of the Federal Reserve System. Interest rates are systematically and purposefully declined since 1981, when they were 18%, until the autumn of 2008, came close to the zero level. The same pace to reduce the cost of consumer and mortgage loans. Thus, for nearly three decades, the American borrower was possible to repay earlier loans new (abnormal available) loans.

By early 2009 the possibility of "lending" through "easy money" have been exhausted, and the aggregate demand of the U.S. economy was equal to real incomes of the population, down from $ 3 trillion to $ 0.5 trillion. Crisis compensating the loss of demand and economic recovery the U.S. government has chosen a large-scale emission. Its size for the period autumn 2008 – spring 2009. amounted to more than $ 2 trillion. The main disadvantages of this policy:

1) the inflationary pressures on the national economy;

2) the instability of the global financial system, because the dollar – the main reserve and settlement currency.

This circumstance makes the impact in many risky monetary policy the U.S. administration is not so tangible for the domestic market.

Innovation on a global scale today is determined by financial and economic difficulties of the leading countries and regions. Deep and prolonged recession could delay the commercial exploitation of scientific discoveries. At the same time, it stimulates the processes of competition and restructuring of companies and industries, making a priority search of effective technological solutions to significantly reduce labor, material and financial costs, is pushing businesses to the courageous decisions that had been postponed for various reasons. In addition, the current anti-crisis solutions and long-term fiscal program, announced in the U.S., EU, China, indicate a high priority science and innovation, an understanding of their importance in the post-crisis structure of the world economy.

Crises "cured" of innovation and there is no compelling reason to believe that Russia's economy there can be no exception. Otherwise, escalate the problem of technological backwardness and obsolescence of material and technical base. Important indicators that demonstrate the real attitude of the state to the problems of technological development, advocate spending on innovation in both absolute and relative (usually a percentage of gross domestic product) terms. Table 1 shows the cost of financing innovation in the global economy and for individual States, significant in terms of their contribution to innovation development and scientific and technological progress.

Table 1

International comparisons on the financing of innovation (FI) in the period 2007–2009

Region	2007			2008			2009		
	GDP, trln.$	FI, trln.$	FI level, % GDP	GDP, trln.$	FI, trln.$	FI level, % GDP	GDP, trln.$	FI, trln.$	FI level, % GDP
1	2	3	4	5	6	7	8	9	10
Eurozone	15,851	0,27	1,73	14,960	0,28	1,87	14,62	0,28	1,92
USA	13,844	0,36	2,62	14,580	0,38	2,61	14,22	0,38	2,67
China	6,991	0,10	1,43	7,800	0,12	1,54	8,46	0,14	1,65
Japan	4,290	0,14	3,33	4,487	0,14	3,12	4,31	0,15	3,48
India	2,989	0,02	0,69	3,319	0,022	0,66	3,50	0,024	0,69
Others	20,720	0,21	1,0	25,504	0,168	0,66	26,32	0,166	0,63
World economy	64,685	1,1	1,7	70,650	1,11	1,57	71,43	1,14	1,59

Table 1 bases on author investigations results and data of www. rdmag. com

The data of Table 1 clearly demonstrate that the claim in the 21 century on the innovative leadership of the country not only reduces the cost of financing innovation, but also enhanced them, despite the obviousness of their rapid return of crisis conditions. Purpose here is different - to create a reserve in the scientific and technological development. This "safety margin" in the form of inventions, know-how and other objects of industrial property will dictate its terms to the markets of new technologies and products. Countries that neglect the financing of science, in the long run, doomed to a humiliating role of the peripheral elements of the global circuits of reproduction.

2. Some types of innovative strategy on anti-crisis context

In determining the innovation strategy as a model of the company making a competitive bid for innovation, there are a number of management approaches. In the most general form can be allocated three of them.

First, the offensive strategy. It is typical for companies, aimed at strengthening the market position, increasing its market share. Prerequisite for its implementation are: the existence of its own scientific research base, or close cooperation with specialized organizations in this field. As part of an offensive innovation strategy have identified a number of varieties:

a) strategy to achieve a cost advantage due to cheaper manufacturing operations as a consequence of new technological methods;

b) strategy for creating new markets for the development and production of fundamentally new types of commodity products;

c) strategy for targeting a specific market segment for the fullest satisfaction of certain group of consumers.

All three species in more or less correspond to the classic strategic approaches to achieving the company a competitive advantage, widely known from the theory of management.

Second, the defensive strategy. It is typical for companies in general, satisfied with their position in the market and is aimed at keeping him. The parameters of the products periodically to improve, but not drastically. Such enterprises are by and large not interested in further innovative development of the industry, as well as plans to continue to benefit from his leadership, including through the establishment of restrictive entry barriers, using the administrative resource.

Thirdly, the simulation strategy. It is typical for companies, non-innovative industry leaders, but with sufficient capacity to respond rapidly and successfully copied the basic consumer properties of products of advanced competitors.

Correlation of innovative enterprise strategy to the classical standard policies shows that the highest correlation is observed:

1) with the product development strategy (from the group strategy of concentrated growth). In this case the branch company persists.

2) the strategy of diversification. This branch extends toward a new, more promising and potentially more profitable activity.

The market success, both businesses and national economies is largely determined by the level of competitiveness, that is, the performance characteristics of products (works performed, services rendered) consumer expectations. In this context, innovation activity is an important means of ensuring the proper level of competitiveness of enterprises in modern conditions.

On the choice of the applicable enterprise innovation strategy influence the parameters of its innovative capacity. Under the economic potential is traditionally understood as the ability of the entity most effectively achieves their goals with maximum use of available resources. Accordingly, the innovative potential of a possible venture to the commercialization of scientific knowledge on the effective integration of new technologies into the economy. For such features include, as a rule, the following set of resources required for innovation:

a) intellectual resources in the form of technical solutions, technical documentation, inventions, patents, licenses, utility models, industrial designs;

b) material resources in the form of hardware innovation, research, experimental and laboratory equipment;

c) financial resources in the form of cash (both own and borrowed, and partly - the budget) allocated for the creation of innovative product or advanced technology;

d) human resources in the form of skilled and creative-oriented staff, a leader - innovator, defining the vector of research and development work, experts in marketing, market forecasting, consumer behavior;

e) infrastructure resources in the form of a rational management structure of the enterprise, encouraging innovative search: the availability of its innovative units, technology, design department, quality control laboratories, patent-licensing services, etc.

They also have the value and additional sources of increasing the effectiveness of innovation activities (e.g., partnerships with research organizations, a resource of free space as a passive part of the core of innovation, functionality to support business activities, the experience of top managers in project management, strategic management).

3. Up-to-date choice innovative development issue

In modern conditions the choice of strategy formulation and creation of new technologies and innovative products is not enough to consider and evaluate only the factors of innovation sphere, as part of the environment a particular company, industry or region. Such a restrictive approach is currently demonstrating its methodological

narrowness. The reason is a dramatic shortening of the presence of a single innovation in the market. The intensity of the emergence of new types of goods and services from year to year increases. Almost daily updates assortment series on commodity markets (in the first place - the consumer) leads to new items that quickly become obsolete. They were replaced by new ones come, more advanced models and types of products. In the industrial sphere in these conditions, the notion of "novelty of the technology is also changing its semantic content. It begins with denote more involvement in the company to a group of technology leaders of their industry, not a monopoly on technological development. Innovation rents also distributed among the group most active and successful in the scientific search for market participants, but because - quickly averaged. This is, in principle, not bad, because the producers an additional need for the improvement of commodity supply due to increasing the competitiveness of industry standards. The consumer ultimately wins the competition and thus the driving force of economic development.

Diffusion of innovations, being the process of accelerating growth in the number of imitators (followers), involves the introduction of innovations followed innovator other market participants in anticipation of higher profits. Moreover, its characteristics may be modified, refined for each market segment. Diffusion of Innovations completes a full cycle of the innovation process, transforming and transforming it.

The mechanism of diffusion of the innovation process is as follows. At the stage of commercialization of the innovation process is changing its configuration, is evolving. He ceases to be an internal affair of innovation activity of enterprises, created and first applied innovation. The trajectory of the innovation process is not deterministic. The traditional model of "science - production - consumer" is complicated, its complement new members. Innovative process turns into a socio-economic phenomenon, becomes a factor of social significance. As a result, innovation begins an independent life in the market, often regardless of the plans of its creator. The essence of diffusive processes at different levels of innovation environment is determined by the equilibrium distribution of innovations in the business cycles of scientific, technical, industrial and organizational-economic activities, including the scope and delivery of related (e.g., engineering) services. Ultimately, diffuse processes provide an opportunity to dominate the new technological structure of social production.

Thus there is a restructuring of the economy, when most of the technological chain of production and services is updated. Prospects for the diffusion of innovation are defined by their ability to keep the resulting characteristics (in particular – the technical, operational parameters of a new product) in relation to changes in the external environment. Invariance of innovation accelerates inter-sectoral mobility of capital and a finite result – upgrading the technological structure.

Conclusion

Implement programs to modernize Russian enterprises and the realization of the idea of quality and sustainable economic growth based on innovative achievements, and creates favorable conditions for the structural changes in the commercialization of scientific knowledge. Current situation of acute competition in world commodity markets requires close integration products and advanced scientific thought. The result of such a union advocate a fundamentally new product samples with higher customer value. This significantly increases the costs to develop new products and shortens the duration of its life cycle. But at the same time, the technical complexity of making them for a certain period of time, protected from competition from less innovative active or not so fortunate in the scientific search for the competitors.

The result of the implementation of the modernization measures might not be fast but safe passage of the national economy on an innovative path of development that will contribute to the saturation of domestic demand and higher quality of life, for innovation - it's not so much the “right ideas on paper”, how many good domestic goods in the shops.

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