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Doctor of Economics, Professor (Economy Institute of Russian Academy of  
Sciences, Moscow)

## SECTORAL SHIFTS IN RUSSIA AND FINANCIAL AND TECHNICAL SYSTEMS OF ECONOMY DEVELOPMENT: ANALYSIS OF THE EVOLUTIONARY THEORY.

**Summary:** The article deals with the problem of theoretical and practical explanation of sectoral shifts and financial and economic crisis in Russia from the point of view of evolutionary analysis of economy financial and technical systems interaction. The author arrives to some rather interesting conclusions concerning the fact that the absence of appreciable structural shifts in Russian economy in 1996-2008 has actually defined inefficiency of financial and technical systems interaction with arising of structural disproportion between these sectors, which is expressed in a difference between profitability and risk in each of subsystems. Generally, contraction of industrial sector and its technological backwardness and besides rapid development of finance and information sectors have determined the given disproportions. Originated sectoral "disbalance" when production becomes highly risky and yielding low revenue, and finance and raw materials sectors are low risky and yield relatively high income, requires absolutely different approaches to macroeconomic policy realization. In particular, the author offers to use the tool of "an interest-bearing portfolio» in monetary policy and a principle of "bad balance» for bank system stimulation. The basic idea is that under conditions of demand decrease, prices reduction, high capital depreciation, the interest rates usually go down, but in Russia they go up. The article also shows the management possibilities of economy public sector development on the Russian statistical material; the example of timber industry sector evolution in Russia is given as an analogy of solving the problem of raw materials dependence overcoming for Russia (model of government tools differentiation).

**Keywords:** sectoral shifts, macroeconomic policy, evolutionary theory, financial and technical systems, «an interest-bearing portfolio», profitability of industrial sectors.

### **1. Is macroeconomics powerless? How can evolutionary economics help in explaining the nature and consequences of financial economic crises?**

Rigidly criticizing the «mainstream » in the name of the Chicago school in his book «The Return of Great Depression» published in 2008, Paul Krugman<sup>1</sup> asserts that economic science has gone astray, as the beauty coated with convincingly looking mathematical calculations is taken for the truth. Modern

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<sup>1</sup> Krugman P. The Return of Depression Economics and the Crisis of 2008. – W.W. Norton AND Company, 2008.

mathematical models, including financial mathematics, were usually created without taking into account the irrationality of agents' behavior and institutional changes and dysfunction (inefficiencies) of institutions. Besides the factor "management" and market and state failures were not considered. Unfortunately, financial markets do not see and do not understand base indicators of economy.

The prosperity appeared in an economic science in 1990s, and in the beginning of 2000s it was destroyed by the financial crisis of 2008-2009. P.Lukas's statements that economics primary goal reduced to the explanation of depression is solved and that it is necessary to concentrate on long-term economic growth problems, or O.Blanshar's statement that "The Golden Age" of an economic science has come and macroeconomy is in good condition, presented in 2008 stopped to be actual and became ridiculous.

The theory of effective market according to which the markets truly evaluate assets according to their real cost, and the share price reflects the company's price, model development CAPM – long-term assets valuation, have shown themselves invalid, and «the great moderateness» and economic policy improvement according to Ben Bernanke, have appeared froth. Ex facto everything is quite so. However, I would like to notice, that the problem is not so simple and does not concern only fiscal neokeynesian formula of economy stimulation in depression that Paul Krugman offers<sup>2</sup>. Actual problem content is not simply in taking into account the effects of irrational agents behaviour in the market, their herd behaviour, panic and trust, and besides the optimistic expectations provoking the effect of squandering, which then is accompanied by liquidity exhaustion, that is, it is not only in immanent instability of financial markets and in the necessity to include financial sector in macroeconomic models, but in understanding development efficiency of various economy sectors, ratio of their development tempo and their interaction. The problem is in the lead and in the lack of convincing theoretical explanations and sequential practical recommendations on "ruptures» elimination of intersector economic development.

For justice' sake, we shall notice, that French regulationists used structural analysis method for studying crisis problem of capitalist system. And G. Minsky, for example, picked out five phases of financial economic crisis, thus placing special emphasis on the choice between industrial and financial investments. These phases included: Profitable innovation; Boom (investments expansion); Euphoria (investments expansion, growth of demand for money and interest growth); Profit Extraction (risks growth); Panic (Minsky moment).

J.M. Keynes's key idea concerning the fact that full development of financial systems makes self-regulation of market economies even less probable; on the one hand, it allows to fairly doubt neoclassical recipes of overcoming the crisis, but on the other hand, all the same it does not allow to get the exact answer about the reasons, forecasts and scale of arising financial and economic shocks. We may ask a question: Should economics answer such questions in principle?

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<sup>2</sup> Krugman P. How Did Economists Get It So Wrong?//The New York Times, September 2, 2009, pp. 3-8.

I believe, that the answer should be affirmative as otherwise it is difficult to justify the existence of a large number of researchers creating certain cumulative intellectual product, which cannot reduce or eliminate destabilizers of economy, social consequences of crisis. Economics should not only help reveal any regularities in various agents and economy subsystems behaviour, but also help prove and make necessary decisions, anyway, it should promote occurrence of clearer picture in the field of management.

Financial crisis in Russia is especially interesting because it is caused not simply by financial system destabilization as, say, in the USA as a consequence of share and mortgage "bubbles" formation. But it was strengthened by weakness of financial-banking system and institutes, technological and structural backwardness, low efficiency of structural dynamics and absence of flexibility and necessary adaptable qualities of economic system. In respect to Russia, and it will be shown further, it is possible to single out the following major factors having provoked financial and economic crisis:

- Rupture in development and efficiency between financial, industrial and public sector of economy;

- Growth of debt economy and uncontrollability of financial sector and financial streams;

- System deformations of Russian economy, emergence and growth of banking and financial sector with degradation of industrial sector;

- Inefficient financial and monetary policy generates "skewed" structure in Russia: high interest with low profitability of economic activities.

Thereby, the financial system reveals the effect of "apparent" evolution when new schemes, tools, kinds of assets (growth) can produce the effect of "collapse" to liquidity (pyramidal structure – holding and trust companies plus the effect of financial leverage in 1929), that stops or brakes the development of technical systems and economy in whole.

Financial tools are temporal, hence, self-sufficiency level of a financial system and its connectedness with technological systems become the important factors.

A moment of time when it is necessary to introduce new financial instruments and when to ban them (Glass-Stigol law of 1933) becomes limiting in the development. Should financial progress depend on progress in technical systems? We shall try to answer these questions in the following paragraphs.

For a long time evolutionary economists have been taking interest in not only problems of emergence and development of crises, but they try to understand the reasons underlying the crisis capitalist nature of a society. In particular, there are works of leading economists in this area, devoted to the analysis of technologies and institutes interactions (H. Hanusch, J. Cantner, P. Saviotti, A. Puk, G. Dosi, J.Hodgeson, etc.), and to influences of innovations on economic dynamics (J. Shumpeter, H. Hanusch, K. Freeman, R. Nelson, K. Perez, etc.), to researches of industrial and financial investments interrelation and interaction (G.Minski). At the same time, the problem of financial and industrial sectors co-evolution is still open for research and understanding though it was described as

far back as by K. Marx and many times after him. In particular, an outstanding institutionalist T. Veblen was seriously interested in this problem.

The evolutionary economy and the analysis that it gives us, will allow to understand better how financial, raw materials, industrial and public sectors of economy co-operate, what institutes and properties define such interaction and what may cause destabilization of such intersector dynamics. It is necessary to speak about the structural analysis of economy development, definition of base proportions and relations between the enumerated sectors, the aggregated indicators describing development of these sectors representing itself the main macroeconomic indicators. Having received knowledge concerning specificity of innovations in each of the sectors, conditions of their emergence, duplicating and interaction, and having estimated the directions of structural shifts and their reasons, it will be possible to speak about the contribution of an evolutionary science to crisis problem solution.

## **2. The intersector shifts analysis in Russian economy in 1990-2000s**

Russian industrial and financial sectors evolution in 1990s and in early 2000s revealed asynchronism of their dynamics. Bank sector, stock markets not only passed a formation stage, but also essentially increased assets, achieved stability, provided rather high rate of capital turnover. Simultaneously real sector degraded both because of lack of circulating assets, proper crediting and backwardness of necessary organizational interaction forms with bank sector. Thus, there was an obvious structural warp in the development of Russian economy, caused by the fact that productive activity became more risky being rather lowly profitable and transactional activity provided more income and less risks. Bank sector and financial markets provided service to themselves and raw materials export. They have got considerable weight in economy, and industrial sectors were seriously reduced. Such structural distortion of Russian economy has led to strengthening of mercantile-raw materials and financial kinds of activity. At the same time, there was a necessity of correction of the arisen structural warp, and unreasonable eminence of one sectors over others. The specified necessity is caused by the fact that Russia needs to restore competitiveness both on domestic and foreign markets in the sphere of technics and technologies.

Emerged in the autumn of 2008 the world financial crisis, being inherently an economic crisis, just became the reflection of the mentioned structural warp, only in world economic system scale. Needs in purchase of goods have not disappeared, the problems in energy sector, instrument making, medicine, mechanical engineering remain actual and require solution. There was a "collapse" effect of liquidity in the world owing to the fact that there was a fundamental warp in the development of financial (banking) and real sectors. This effect appeared owing to a separation of financial sector from real one and affected provision of real sectors with money. Cash provision reduction results in output reduction and unemployment growth. Thereby, there was a sharp problem of finance "renewal" or, to be more precise, a problem of adequate correspondence of the money supply

turn-over and liquid assets to goods and services production in economy. To solve this problem appeared to be not simple with such intersector difference in the development and the existing system of financial institutions and rules of banks operation. Interaction dynamics of indicated sectors shows the “non-renewal” (or "disappearance") effect of finance at which requirements have not disappeared anywhere, but there is no financing of these requirements, as if the finance have somewhere disappeared.

The policy of inflation curb «has justified itself» - unemployment has raised, high technology manufacture has been curtailed. Thus, the product earned by the Russian economy, was deduced to other economic systems, and was actually withdrawn from domestic economy in the form of the increased money supply (stabilization fund). This money is created by the Russian economy and its citizens. It is the citizens of the country who should decide, how much to save up, to postpone for the future generations and whether to postpone in principle? Moreover, savings can and should be used for solving internal economic problems, in particular, for building of roads, bridges, airports, power stations, nuclear stations, photoelectronics development, etc. The last project can be state, long-term project and it is possible to invest money of Russian stabilization fund as the long-term state credit, which will necessarily give return and will fill up treasury of the future generations. Thereby the state would provide creation of future new technological possibilities, development of a new kind of energy with the broadest technological prospects of development and working out of new kinds of technics and technologies. Is such decision economically worse than an investment in foreign securities of doubtful profitability and prospect?

Diagrams presented lower (see Drawings 1-5) and their data makes it possible to formulate some conclusions:

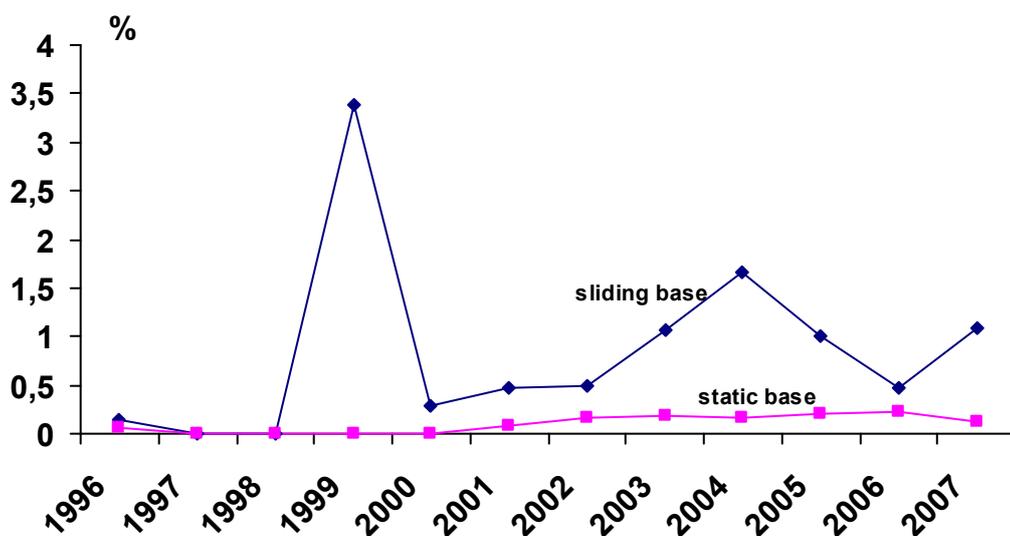
1. Sectoral shifts took place spontaneously, uncontrollably, an important circumstance being the fact that these changes damaged the structure of industrial production and benefited strengthening of financial sector positions in economy.
2. The total index of sectoral shift regarding economy sectors in gross national product on a product clearly reflects the absence of notable shifts in intersector structure during 1996-2008
3. The mass of sectoral shift for financial sector at static base since 2001 is always positive and is constantly growing for 8 years. Industry was developed on the model of «dashing aside», and the mass of sectoral shift reflects this both at static and at sliding base. The mass of sectoral shift in financial sector and extracting sectors surpasses in value the mass of sectoral shift weight in industry (static base) and shows growth in whole. As for agriculture, there is complete degradation of this sector in the total economic structure.
4. Financial and raw materials sectors show financial result balanced on accounts with the big lead from "real" sectors of economy. They also demonstrate the greatest efficiency and tempo of structural dynamics in gross national product, obviously occupying the leading position.
5. The index of sectoral shift according to the assets indicate that there were no any serious structural changes, certainly, processing businesses possessing more assets

than, say, financial and even extracting sector. The efficiency index of sectoral shift was the highest for financial and extracting sectors, and for industry, it was low enough at about zero.

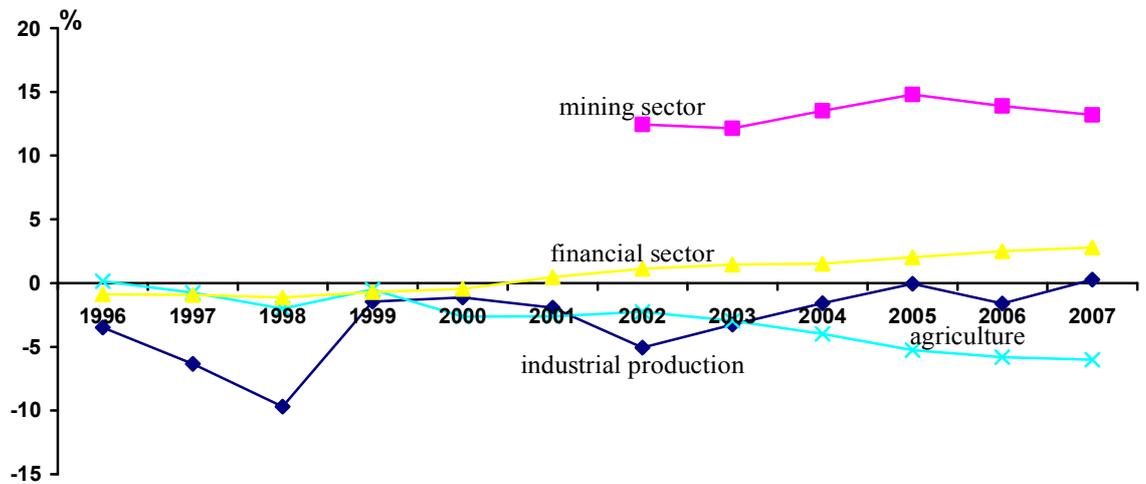
6. In estimation of sectoral shifts in industrial sectors according to employment, there also exists an interesting consolidation regularity of raw materials and backward structure in relations to production. In particular, the mass of sectoral shift is positive in mining sector, and in the sector of devices and equipment manufacture it is negative. Shifts efficiency in industrial sectors is either about zero or negative.

7. Specific weight of people employed in industry and agriculture was steadily reducing, and was increasing in financial sphere, and the share of people employed, for example, in agriculture and finance was approximately identical, at absolutely different efficiency, speed, and mass of sectoral shift not in favour of agriculture. It is especially necessary to note that the interest rate in Russia steadily surpassed manufacture profitability (sometimes by 1, 5-2 and more times), the same refers to profitability of bank sector on capital which surpassed profitability of manufacture and R&D by 2-3 times. Besides interest in Russia in 2000-2008 remained 3-5 times more than the interest established by Federal Reserve System in the USA and the European Bank. It promoted growth of private external debt of corporate and bank sector of Russia which was an additional burden for industrial systems functioning.

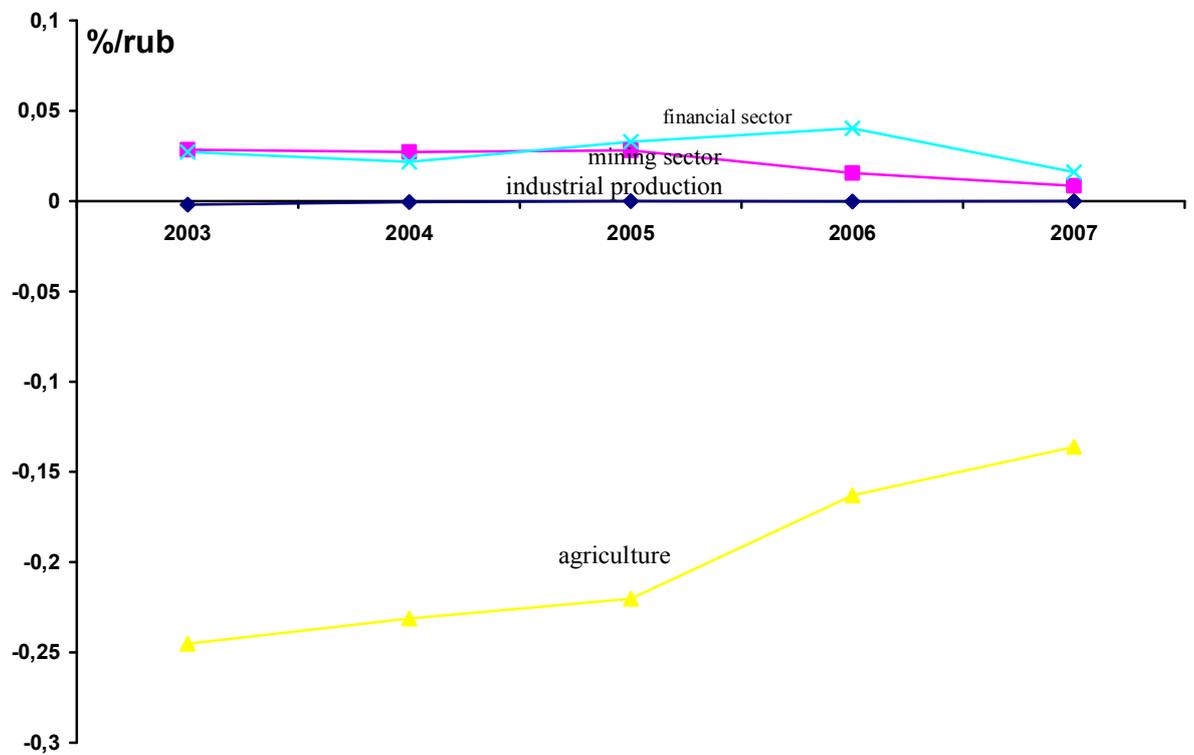
Thus, it is possible to assert with confidence that the problem of designing and management of economic structure was not being solved and estimating calculations confirm it, as well as the analysis of the received data does. System of economy has been broken and economic proportions were formed under stochastic factors including the external ones, the developed structure meaning domination of financial-transactional and raw materials sectors over industrial sector and agriculture.



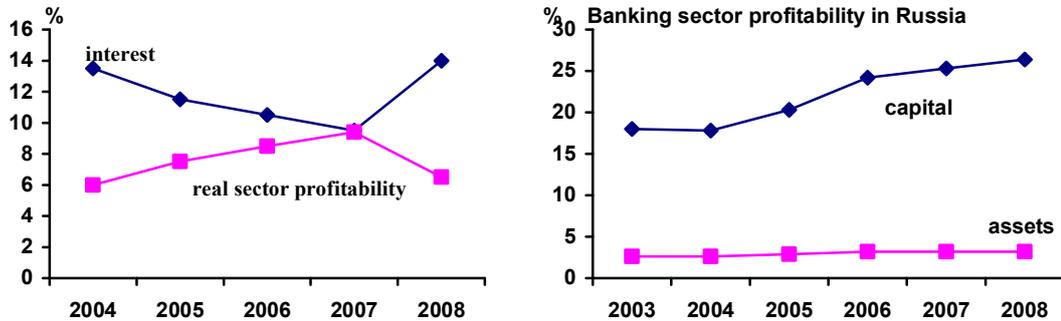
Drawing 1. Sectoral shift index according to the product share in economic sectors in GDP of Russia.



Drawing 2. Sectoral shift mass according to the product share in economic sectors in GDP (static base) of Russia.



Drawing 3. Sectoral shift efficiency according to the product share in economic sectors in GDP (static base)



Drawing 4 Interest and real sector profitability

Drawing 5. Banking sector profitability in Russia

### 3. Interaction problems of economy financial and technical systems

Interconnected elements of financial relations aggregate by means of which distribution, formation and use of money resources are carried out, are usually called financial system. State and municipal finance, the finance of the organizations (enterprises), households, insurance system and credit-bank system are referred to financial system. A basic problem of a financial system is servicing money circulation and regulating financial activity of managing subjects and the organizations.

Technical system can be regarded as a set of technical devices elements, technologies, ways of products manufacture), design and scientific-engineering provision of productive activity ensuring interrelation and interaction of science and technology. The major feature of a technical system is the circumstance, that it is created by a man and it does not possess complexity, sufficient enough to reproduce itself or to copy the elements (parts) without man's participation. The technical system provides interrelation of devices, technological processes, complexes and the components whose main task is to perform useful functions, that is, to increase social system processibility. And technical and financial systems are a part of social system. Properties of technical system are not only the properties of its components. Technical systems can perform useful functions without a man but requires management. We shall take socio-technical structure for technical system, that is, technological sectors, the industrial enterprises etc. in its economic value.

In particular the major technical system and innovative cluster in Russia are microelectronics, electronic engineering (means of production creation), and besides shipbuilding, aircraft engineering, engineering (automobile, railway transportation), instrument making, radio electronics, construction and industry of

new materials creation, etc. These are components of so-called real sector of economy which presents the most complicated technical system experiencing the most considerable difficulties in their development.

Development estimation of technical systems assumes the use of not only basic financial and economic indicators, but also the indicators of technical-technological level. In particular, with reference to microelectronics the indicator of topological norms is used, that is, the dimensional characteristic of planar "know-how" (number of transistors on a unit of measure and the minimum width of a conductor, semiconductor and dielectric line). The less the topological norm, the more elements per unit of area and the larger a carrier memory capacity. The Soviet microelectronics steadily reduced the lead from the leading western countries according to this basic indicator for all the period of its development up to 1990s. (see Table 1)

Table 1 –Characteristic of technical system development

(Topological norm in microelectronics. Russia and the West 1980-2008, micron)

	1980-1990	1990-2000	2000-2008
Russia	4-2	1-0,8	0,7-0,18
The western countries	2-1	0,7-0,35	0,1-0,03

By the beginning of 1990s the backlog in microelectronics was reduced up to 2-3 years though in the beginning of the given technical system development it was about 15-20 years in the middle of 1960s and even in 1970s. For the last years of Russian economy growth technological backlog in microelectronics increased up to 6-7 times on an average (see Table 1).

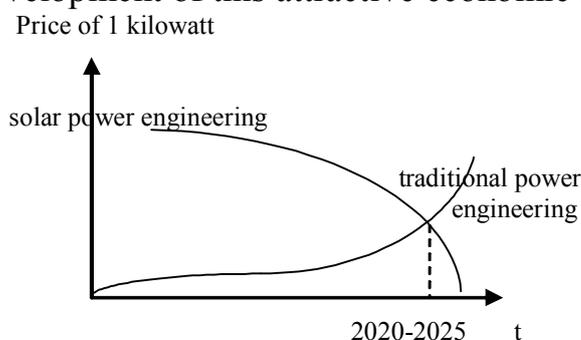
Errors of complex technical systems management have led to the situation when the level of Russian microelectronics in general has been fixed on topological norm 1- 0, 8 microns, and if the equipment was domestically produced in the middle of 1980s, clean rooms were bought abroad and, vice versa, if clean rooms were a domestic production, the equipment was bought from the western firms (ASM). As a result, technical system not only worked with undue capacity, but also did not often work in general. Similar errors of designing and management of technical systems provoke degradation and technological backlog of perspective economic sectors. In the end of 1990s and in the beginning of 2000s separate microelectronic manufactures working for defense, producing microchip for "Topol-M (Poplar-M)", in particular, and other military systems have only remained.

At the same time, it is necessary to ascertain, that electronic industry is not only capable to provide new results of informational economy. An "alternative" power engineering – re-energetics appeared on its basis. In other words, electronics creates means of production of a new kind of energy, namely a solar one. The embodiment of neoindustrialization idea of Russian economy based on vertical integration is possible through activization of intersector interactions on absolutely new basis of technology and energy development.

Today in the world economy scale there is a list of the enterprises which produce 5-megawatt solar elements. There are only four of them but there are no Russian enterprises in this list. German, Japanese, Australian and the USA firms are the first in the list because Programs of solar power development are accepted in these countries at the state level.

The share re-energetics (wind, solar, tidal, biofuel) in the world gradually reaches 4 % while the atomic engineering share is about 15-20 %. And the use scale of re-energetics will only extend with high enough rate, meeting the requirement in new technologies, means of production, results of microelectronics and radio-electronic industry. Russian backlog in this new field of activity is already notable. For the last three years China, for example, has put into operation 4 new plants producing pure silicon and photoelectric converters with increased efficiency. As a result, the main problem of re-structuring was in the fact that it appeared impossible to define the moment of switching of Russian electronic enterprises on re-energetics. Only electronic enterprises can be the base of such development. Thus, it is necessary to develop re-energetics practically from the very beginning because of closing down microelectronic enterprises throughout 1992-2008s

Today a watt of the energy produced by re-energetics costs more than 1 kilowatt of traditional energy. However, the efficiency of re-energetics grows and already exceeds the given indicator of traditional power. This is expressed by systematic reduction of 1-kilowatt price (see Drawing 6). At the same time, either financial-investment institutes in Russia, or the structural policy, do not stimulate the development of this attractive economic segment.



Drawing 6 – Expenses on traditional power engineering and re-energetics

The most important regularity of technical systems development is that it is impossible to "jump" from the first stage of engineering development, passing one-two-three following stages, to the fourth or the fifth. Each transition from stage to stage is characterized by the change of technologies, infrastructures, the equipment, knowledge accumulation, necessity of personnel training, etc. (thus at topological norm of less than 0, 1 microns, the personnel passes not one, but two hermetic zones). With reference to microelectronics, it is necessary to have clean premises, filters, clean reagent, constructional materials, etc. Everything should be prepared according to the requirement and problems being solved.

Production provision in corresponding volumes and at all consecutive technological stages guarantees a continuity of technical system functioning— from raw materials to a finished product. However, because of irregular investment streams to different links of chain, the development rates of each of repartitions are not adequate, and result in its lead. In the given context, existing market mechanisms cannot (by their nature to achieve maximum profit) regulate synchronous work of all the chain. Nobody simply occupies its separate niches which are notable for rather high expenses (low profitability). Regarding high development rates of highly profitable repartitions and output, this leads to the rupture of a production technological chain and to dysfunction of technical system.

Russian Federation's development of new innovative product, power supply systems of alternative "solar" power based on silicon photo-electric converters, can be a striking example.

Financial regulation and purposeful conditions differentiation of financing productions different in the level of profitability should become powerful synchronization factor of links development rates regulating the given process. However, the financial system is not ready yet. Its cardinal amendments and perfection, and matching with developing technical systems are necessary.

For creation, equipping, and infrastructure it is necessary to carry out research and development, R&D, in which now neither the state (government), nor the private proprietor are not interested as the latter does not orientate on the works with higher risk, and the government has certain budgetary restrictions.

Financial-bank institutes in Russia are not going to stimulate crediting R&D in high technology sectors and in strategically important segments. At the best leasing credits are provided under equipment purchase but not under design and development work and working out of this equipment. Risk of design and development work makes approximately 30-40 %. Banks do not take such hazards. Therefore, the equipment is bought abroad. The general result is the absence of critical mass of innovators who would have the accessible credit.

How can we change and estimate financial system development in contrast to technical systems? If with reference to technical systems the criteria of their evolution estimation is more or less clear, for example, for electronic industry it is topological norm, for mechanical engineering it is engine efficiency, types of automatic machines, speed, for space-rocket branch it is weight of injection to an orbit, without saying about special economic indicators estimating efficiency and scale of each sector (volume of the market and sales, a share of expenses for research and development etc.). As for financial system, there are practically no such exact quality indicators. However, it is possible to suggest such indicators for a financial system, for example, interest rate and volume of money supply in this system, and besides volume of the money supply per head of each employed in the system, as it is rather significant indicator for technical systems.

Then how to estimate financial system evolution and in what direction it goes on, if for today there are no exact criteria of an original efficiency estimation of a financial system. The use of numerous estimation indexes of the share market dynamics, of financial organizations, and, as well, classical estimation indicators of

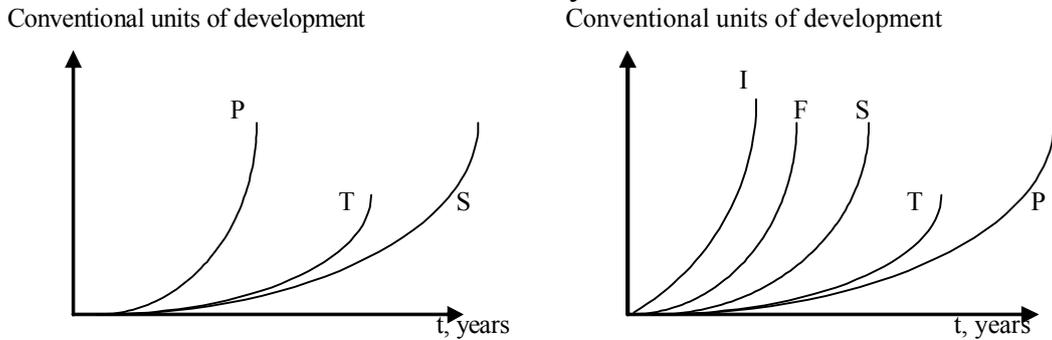
assets and the capital efficiency (profitability, etc.) do not provide efficiency estimation of financial and technical system interrelation. They do not allow to judge whether the evolutionary trajectory is khreod (non-optimal because of occasional reasons) or not? In other words, how to estimate financial system "improvement" in contrast to the technical one? Particularly, with regard to currency system, which is the major element of financial system, improvement occurred as a result of the original answer to currency crises. In engineering, such examples are scant in comparison with a financial system.

In orthodox economic science rather dangerous stereotype emerged, that unprofitability of the agent, its insolvency, financial performance worsening and, finally, bankruptcy is a reflexion of a low production efficiency, or low effective behaviour model of the agent in the market and a natural result of competitive process. Both private and state investments, as a rule, are not directed to such agents. However, the financial logic can hardly be applied to industrial-technological systems, as it is impossible to provide their suddenly high efficiency. Each system has certain development laws, its life cycle and it is impossible to raise its efficiency without expenses. In other words, investments and financial injections should be spent both for creation of the specific welfare and useful effect achievement, satisfaction of needs, and for efficiency increase of these blessings creation process, including management and the organization. The two latter components are not usually connected in any way with financial logic and making financial-investment decisions. According to the theory of the classical market if efficiency goes down, money leaves this agent. This process operates cumulatively towards its further fall and results in bankruptcy of the given agent. But how is it possible to make the system effective without any financial injections? How is it possible to raise its profitability, not investing the system, but only taking money out of it? And it is not important whether this conclusion is made under the influence of the share market and creation of a "share" bubble, that is, fictitious assets growth owing to speculative tendencies in the market and control absence of this process or owing to any other circumstances.

In 1990-2000s many projects of real sector of economy in Russia have not been finished owing to underfinancing. However, agents announced the projects, co-ordinating application with the state or corresponding banks, confirming calculations with accounts, and declared, as a rule, obviously effective projects, profitable, with a good payback period. Thus, projects and programs (federal and regional) were underfunded (or the financing succession has been broken, that is, constant delays in the first and in the second quarter) both under conditions of budget surplus, and under budgeted deficit, both under recession and under economy growth. Then is it possible to consider the financial-bank system functioning in the country to be effective, if there is a reduction of manufactures, unemployment growth and even defense projects are underfunded? It is difficult to answer this question in the affirmative.

Economic system can be subdivided into five subsystems: information, finance, science, technology, and manufacture. As for services, they can be referred to each of these five subsystems depending on specialization and

«transactional» roles which they execute, or on their infrastructural purpose. Then, it is possible to analyze and to characterize the development of social and economic systems depending on dynamics correlation of the named large-scale sectors of this system. Designated the development rate of science, technology, manufacture (product), information sector and finance by S, T, P, I, F accordingly, it is possible to write down and show graphically (Drawing 7) the correlation of dynamics rate in various sectors of economy.



Drawing 7. – Development rate of economy sectors at various stages of historical trend

Drawing 7 on the left shows the situation development characteristic of XIXth century when change of a product and manufacture dynamics was advance in relation to the change of a science and technology rate. Then at different periods of the XXth century this correlation varied. Mathematically it is appropriate to write it down in the following way:  $\frac{\partial P}{\partial t} > \frac{\partial T}{\partial t} > \frac{\partial S}{\partial t}$  and at different stages of the XXth century this correlation takes on the form:  $\frac{\partial T}{\partial t} > \frac{\partial P}{\partial t} > \frac{\partial S}{\partial t}$ , that is, technical changes (technical development at the expense of improving innovations) outstripped the development rate of a product and science, or  $\frac{\partial T}{\partial t} > \frac{\partial S}{\partial t} > \frac{\partial P}{\partial t}$  when technical changes outstripped science and product development (means of production perfection). However, in the second half of XXth century there were conditions at which rate of science development became advance and it became the basic force of productive forces development that can be presented in a form:  $\frac{\partial S}{\partial t} > \frac{\partial T}{\partial t} > \frac{\partial P}{\partial t}$ . Last 1, 5 - 2 decades of the XXth century and the first decade of the XXIst century are stipulated by advance development of information sector and finance. Such situation is reflected in Drawing 7 on the right. Thus, it is possible to write down:  $\frac{\partial I}{\partial t} \geq \frac{\partial F}{\partial t} > \frac{\partial S}{\partial t} > \frac{\partial T}{\partial t} > \frac{\partial P}{\partial t}$  whence follows, that the development rate of information-financial sphere defines the corresponding level of science development, technology and a product. And it is important to notice, that information and finance act as an original limiting resource, the science result acts as an intermediate product, so the given inequality actually shows that the product cannot develop (change with higher speed) faster than a resource. The specified

fundamental correlation causes profitabilities gap between the named sectors and creates conditions for domination and for speculative development of financial and information sectors.

Table 2 –Economic efficiency estimation of economic systems

The system name	Indicator of the system development efficiency (profitability)	Calculation parametres
Informational	$R_I = V_I / Z$	$V_I$ – speed of information processing; $Z$ – expenses for maintenance of the given technological parametre of the system
Financial	$R_F = \Delta F / F$	$\Delta F$ – accession of finance, monetary capital; $F$ – absolute value (volume) of finance, monetary capital
Science	$R_S = E_S / Z$	$E_S$ –economic effect, $Z$ – costs, causing the given effect
Technology	$R_T = KP_T / Z \theta \lambda \theta P / Z$	$KP_T$ – coefficient of efficiency or $P$ – productivity of equipment $Z$ – costs of this effect or of productivity
Production	$R_P = Pr / Z$	$Pr$ – profit, $Z$ – production costs

If we imagine the effectiveness of each of the presented subsystems (see Table 2), then an interesting question arises: how should this effectiveness correlate and will this correlation be the same with the development velocities correlation of these subsystems? In other words, is the development tempo of certain economic structures connected with their profitability and how will the latter index describing the system efficiency change? Will the effectiveness grow when the system grows or will it be constant or reduce and how is it connected with the development tempo of the given system and adjacent systems? Economics does not have exact answers to these questions either in the long-run or in the short-run of economic history. Application of linear logic allows to assume that effectiveness ratio will be the following  $R_I > R_F > R_S > R_T > R_P$ , that is, it will be distributed in exact accord with the predominance in development tempo of the sectors. But in fact, in respect to Russian economy of the beginning of XXI century there is absolutely different ratio:  $R_F > R_I > R_P > R_T > R_S$ . Production profitability is higher than the profitability of science and technology but much lower (in times) than the finance and information sector. If the country's production degrades

because of stagnation development of science and technology sector, then finally it is replaced by raw material complex if it exists in a given system. Then presented inequality is conditionally divided into two parts: the right part is low profitability of scientific technological field and the left one is high profitability of financial informational and raw material sectors. In this case the tempo ratio of these sectors development should also change. The question about defining the given ratio for every economic system is still open. It is important to notice that the task of system projecting, that is, defining the proportion between the development tempo parameters and the sector effectiveness also requires its solution. Why not to take the ratio  $R_P > R_I > R_F > R_T > R_S$ , or:  $R_P > R_T > R_S > R_I > R_F$ . Really why should profitability of financial system or informational one be more than profitability of science, technology and production? If we take into account infrastructural principles of these subsystems which perform the function of intermediate production then profitability of these activities cannot be more than the main production, otherwise the latter is impossible.

Summing intermediate total of our discussion it is worth to suppose that it is the breach of the appointed ratio, the reason of which are in institutional field, that mainly provokes modern financial crisis, allows "stock bubbles" and financial pyramids formation.

Financial economic crisis may have different reasons (for example, Great Depression 1929-1933 and crisis of 2008-2009), but very similar manifestation (stagnation or production reduction, unemployment growth and destabilization of financial investment institution)<sup>3</sup> but ways and toolkit which are applied by the government practically do not change. Destruction of conditions for innovations emergence and duplication becomes the most interesting effect of financial crisis. Emergence of financial problems automatically affects innovative activity, switching "innovative" strategy on "conservative" model of agents' behaviour.

In 1966 R. Vernon investigating «Leontjev paradox» has concluded, that the main stimulus of innovations and innovative activity is national income level and dearness of labour, the extent of risk accompanying innovations being compensated by market range, as it gives an opportunity to firms to expect reasonable rates of return. Then goods standardization makes the problem of low production costs actual at its duplicating. That is why production is located in places of cheap labour and mass demand. Thus highly technological productions keep some parts of the product niches, retaining leadership and a priority in the field of technologies, improving them and introducing new goods on their own markets. By the way, «Leontjev paradox» is known to be an original defect in the factors of production allocation theory, explaining the international exchange, in which the centre is Heksher-Olin-Samuelson theorem. In general outline this

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<sup>3</sup> It is necessary to notice, that Great Depression and crises in first half of XXth century were accompanied by a deflation, and as to crisis of 2008-2009 inflation rate, even at production slippage was not essentially slowed down; anyway, there were no notable deflationary tendencies. It is necessary to specify, however, that at a point of writing the present paper the crisis cannot be considered to be finished or reached its lowest points. However there are indications that the crisis of 2008-2009 is very similar, for example, to the 1847 crisis in Great Britain when the reason was in sharp growth of railway shares sales like a subprime-mortgage in 2008-2009 that has led to "a share bubble» formation.

theorem sounds as follows: at factors of production uniformity, technics identity, pure competition and absolute mobility of factors the international exchange has the property of prices adjustment of factors of production between the countries. In other words, each country specializes in the world scale division of labour on those goods for production of which it has a favorable factors combination. If the country has intellectual resources, it will sell high tech and corresponding products; if it has oil and gas, then these resources or their processing products appear in the world markets. Certainly, the production status and technologies can be such, that the country cannot process those initial raw materials it possesses. It depends more on internal development potential and economic policy, than on factors themselves, but it is also defined by institutes, including international ones. In reality factors are non-mobile, competition is not perfect, the technics is not identical and factors themselves are non-uniform, as well as physical and human capital is non-uniform. Therefore observance conditions of the theorem in many respects "lifeless", artificial. «Leontjev paradox» confirms it, as marks the sale tendency of labour-consuming production in the country possessing the surplus capital. The reason is in high labour quality. This quality is maintained by high income, wages and living standard. That is why one of the recipes of raw materials dependence overcoming is to increase dearness of labour. The second recipe is normalization of basic institutes and creation of conditions for innovations perception by all the elements of the system. The third recipe is in the mechanism of personnel overflow from transactional sectors to high technology with the latter's orientation on both satisfaction of home market demand for equipment, devices, consumer welfare, and export. These three directions should be the core of Russian non-raw materials development model and started system of macroeconomic regulation. All the institutes, structures, budgetary tasks should be subordinated to the given logic to achieve integrated result and to carry out the designated structural changes.

#### **4. Basic distinctions principles in financial and technical systems evolution of economy**

Further we will show, what fundamental distinctions in functioning and development principles of financial and technical system can provide crisis emergence manifested in the effect of finance "disappearance", industrial sectors paralysis, unemployment growth and decrease in the incomes of the population.

Table 3. Functioning characteristic of financial and technical systems on groups of parametres, expressing their disfunctionality

№ п/п	System Parametres of disfunctionality	The technical system	The financial system
1.	The existence purpose	Needs satisfaction; life quality growth (+)	Volumes and movement of financial resources guarantee

			in all systems of economy (-)
2.	Area of loading	Change of technological possibilities, share reduction of a physical work, raw materials and power expenses (+)	All operating sectors of economy (+)
3.	The functional filling	Continuity (indissolubility) of technological chains - from raw materials to a finished product (-)	Measurement, redistribution, crediting, exchange – etc. in financial sphere. (-)
4.	Period of time before changes	The life cycle periods of the basic technical achievements created on the basis of discoveries and inventions (+)	The periods of time before the next reaction to pent-up demand any of economic systems in finance (-)
5.	Functioning costs	Ecological factor and other global changes in the nature (climate, negative influence on environment), harmful working conditions – etc. (-)	High interest and functioning costs (-)
6.	Degree of divestiture or acceptance of introduced norm	It is characterised in the Russian Federation by transition from resource to processing economy of innovative type (-)	New standards (securities, derivatives, etc.) – are superfluous or have reached high degree of divestiture (-)
7.	Mutation stability (a measure of system stability to its transformation in any other form)	It is steady (+) owing to the stability of technical achievements	It is not steady (-)

As we see from Table 3, financial system of Russia shows much bigger disfunctionality (larger number of minuses) than technical systems; however technical systems become the hostage of financial systems development. Factors aggravating dysfunction are as follows: uncontrollability of institutional changes, or controllability and reasoning (planning) illusion, rivalry between various institutes or institutes and agents, high speed of institutional changes, establishment of new institutes without granting of a necessary adaptable lag for agents.

In connection with the above mentioned facts, we may assert, that the development trajectory of technics and technical systems is less khreed, than that of financial system as there are no exact proofs, that system improvement in response to its crisis is genuine and necessary "improvement", and not hastily action which will recreate stability up to the next crisis. Hence there appears the first basic development principle of technical and financial systems of economy.

**Principle №1.** Obvious technics improvement (technical systems) and "unevident" financial system improvement.

Technics and technical sectors development demands concentration of special knowledge. Here the dialectic principle of development when the quantity

develops into quality is realized. Technics is developed on the basis of physical, chemical, mathematical, engineering knowledge and open regularities. Such development is permanent. In contrast, financial system and the institutes responsible for its functioning do not demand adequate concentration of knowledge and do not show development consistency. The financial system is a serving logistic system. That is why finance is often "blindly" adjusted to technical systems development or it cannot do so, has no time to be adjusted, are not organized in compliance with the technics and technical components progress. Thus the next basic principle appears.

**Principle №2.** Logical perfection of technical systems and reactive perfection of financial system. There is a development vector, technics perfection, but there is no adequate vector of financial system development.

Development efficiency of technical systems, technics cannot be forged, and in relation to financial system "false" development is probable, that is, falsification (financial pyramids, share market) takes place. Rocket flight, speed of the car cannot be falsified, though situations of ostensibly perpetuum mobile designing are possible, or qwerty-effects which have other more social-psychological basis, than the basis connected with laws of technics and physics development. Therefore the third basic principle can be formulated as follows.

**Principle №3.** The verity and falsity of technical and financial systems development. The level of technical systems natural development is higher than the one of financial systems.

The next principle is **principle №4**, principle of explicit and implicit solution. In the technics a "corrective" decision is feasible and valid. In financial system such decisions are often absent, and the validity level cannot be called strict. The mass of used financial tools results in high systems diversification and causes the effect of financial tools and institutes «incoordination».

It is rather difficult to define what utility re-established financial institutions have, both for financial system, and for economy as a whole. The emergence reasons are always available, as there are visible benefits of such tools and institutes creation for separate groups and interested agents.

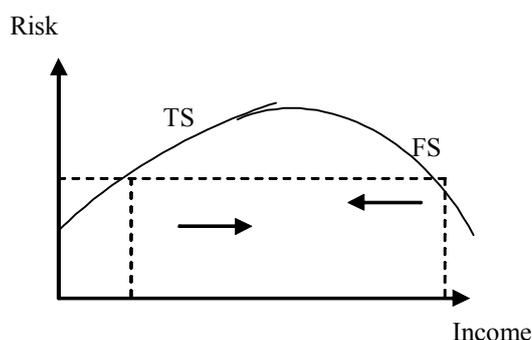
Technical and financial systems are developed simultaneously, co-operating with each other. But they have different speeds. As a result, there are mismatch points, and the time of coordinated development cannot be long enough, if there are basic principles in question. Owing to a mismatch there appears modern crisis of economic system generated by the basic imbalances of financial and technical systems development.

Financial institutions "are formed" in agreement with current necessity for the solution of short-term problems of finance improvement by the "thumb" rule, but not based on problems of economy structure and technical systems development.

In the area of mismatch developments, at crisis, for example, liquidities and the financial system influences the development of technical systems greatly, and in essence, does not allow these systems to develop. In turn, during the pre-crisis period, the financial system cannot give the direction of technical systems

development (it is purely an autonomous problem), but can give the chance to financial realization of this or that technical trajectory. At the same time, technical systems do not influence the emergence of new financial tools directly. Financial system institutes are subordinated to the ensuring logic of system balance in the short-term period, or the balance scheme. And it just does not coincide with the laws and principles of technical systems development.

**Principle №5.** Mismatch development with different speeds of financial and technical systems of economy.

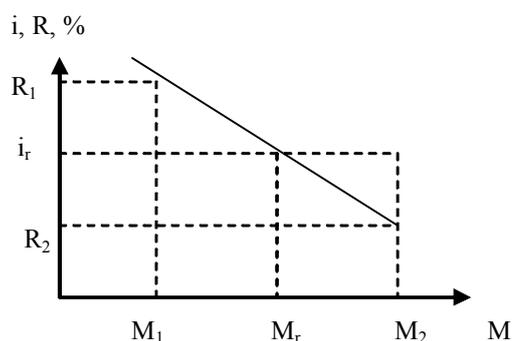


Drawing 8. Functioning of financial (FS) and technical systems (TS) in Russia in 1990-2000s

And the development mismatch is also expressed in that the financial system directs the agent and really allows to get larger income, and technical system gets essentially smaller income at the same risk of economic activities. Therefore overcoming of such mismatch development is seen in the change of these sectors structural ratio (Drawing 8) to equalize profitabilities at the same risk, or to create such regulating institutes which would allow to get larger income with bigger risk, and smaller income with smaller risk; in other words, they would reduce financial system profitability and increase technical system profitability, raising risks in the former and reducing them in the latter. Development strategy of vertically integrated systems in economy should fit in with the designated development vision of economic structure. For the solution of the specified problem it is possible to use a method which should be called as « interest portfolio».

If the interest in the country essentially exceeds profitability of real sectors, effective development is impossible under such condition. The given sectors cannot receive money supply necessary for development in a unit of time, that is, the amount of credit allocated at a given period of time. Different sectors of economy have different scale in economy, have unequal share which is defined by resource basis, including factors of production possessed by the country. At the same time, it is possible to say, that these sectors require different sum of money in a certain initial moment of time  $T_0$ . Those sectors, having a monopoly position and the investment income with the high profitability, have their own means for development and the amount of money  $M_1$  is sufficient for them, and sectors with relatively low profitability require the amount  $M_2$  (see Drawing 9). Then the first group of sectors will quite sustain interest rate  $R_1$ , and at the rate  $i_r$  will receive

larger a share of money supply than it is necessary for them, and sectors with the low profitability, oriented on  $M_2$  at the given interest rate lose the necessary amount of money and will not develop at a required level.



Drawing 9. – Money supply for sectors with different profitability and money requirements

Fall of the refinancing interest rate which is necessary under conditions of finance "disappearance", nevertheless, is required to carry out systematically, accompanying this change by controllable resources overflow from financial and raw sectors to productive sectors of economy. Such should be the deblocking strategy of already created raw materials orientation and dependence of Russian economy. Application of «interest portfolio» method should be the following: in agreement with the average profitability of various economy sectors it is necessary to establish interest portfolio, that is, interest rates on credit for each sector selectively but not more than this average rate, and banks, in turn, providing the completeness of such portfolio, that is, supplying credits to sectors whose development is necessary to stimulate, will receive preferences at refinancing interest or other institutional-organizational possibilities. Specification of such policy requires financiers, bankers, representatives of the Central bank of Russia participation. Such method can become one of the main tools of "a structural warp» of Russian economy development liquidation and with further elaboration, modelling, calculations, it may help to reduce a mismatch in financial and technical systems development, both in Russia, and in the world, creating a stronger basis for the future economic development. This tool at its designing and use in economy will allow to unite financial system development and technical system of economy. In this case, finance will be provided with real creation processes of welfare and services, and self-increase of financial sector which is self-sufficient in modern economy and periodically causes its destruction, will be blocked; at least, the separation scale can be reduced, and the probability and destructiveness degree of "disappearance" crisis of finance are cut.

Stimulation of banks to work in the priority branches whose functioning is characterized by low profitability and high risk should be the purpose of a macroeconomic policy. There is a list of such sectors in Russia according to the list of critical and macro technologies confirmed by the government.

It is required to provide R&D with the credit first and then, serially introduce their results. It is possible to recommend the application of «bad balance» principle as a tool of such macroeconomic policy. What does it mean?

As a matter of fact it is possible to present bank credit portfolio having four blocks: financial-bank operations, raw materials sector, commercial-trading operations and real sector. Portfolio balance is bad when the fourth component is insignificant, and the first three, especially the second and the third dominate in their share.

To correct «bad balance» is possible, having established an original scale of rates on credit to raw materials sectors, say,  $b\%$  if their share in a credit portfolio of the given bank exceeds  $x\%$ , and for real sectors -  $a\%$ . And, if a share of operations with real sector is above recommended or legislatively established in a bank credit portfolio, then it is possible, for example, to admit a notable decrease in the rate of refinancing for the given bank. Thus, bank liabilities should be differentiated according to the sectors in a credit portfolio and the norm of obligatory reservation should be appointed according to each liability type to correct structural "warp", to equalize intersector profitability and to provide industrial chains with credit. But the interest should not exceed profitability of sectors.

## **5. Development problems of public sector: from present to future**

Emergence of new combinations in economy and stimulation of this process based on inclusion of necessary macroeconomic factors, requires correct statement of a management problem by economic structure. Designing of proportions between sectors, kinds of activity, available industrial-technology factors and resources is, in essence, a way of conditions creation for appearance and duplicating of new combinations – innovations.

Let's pay attention to the fact, that if we compare a machine-building and timber processing complex, on the one hand, they are interconnected as without mechanical engineering development, it is hardly probable to provide effective processing of wood into finished product. However, on the other hand, there is an important difference of fundamental character, resulting from specific character of these two economy sectors. Mechanical engineering usually has a resource (metal, raw materials, energy etc.) as an input. And as an output, in terms of sale and market behaviour, there is always finished good, whether in the form of a finished article or in the form of component parts. In timber processing complex the situation is different: either raw wood or finished wooden articles can be sold. Thus, the problem in respect to mechanical engineering is in providing domestic manufacture of final qualitative products satisfying the demand for them, and deliveries of export to foreign markets. For timber processing complex the problem of development management should come not only to the complete satisfaction of needs for final products and wood on domestic market, but also to define a proportion between the volume of finished articles and the volume of sold wood, both on domestic market, and for export. It is clear, that complex raw materials

orientation means low level of innovations in this economy sector as they can concern only tree felling, logging and transportation, but not methods and technologies of its processing into finished goods of high quality. Even the problem of reforestation can be of minor importance at such level of development. This situation is observed, for example, in modern Russia.

Let's introduce the following parameters for a certain sector:  $e_1$  and  $e_2$  – correspondingly the volume of the "processed" and "raw materials" export;  $P$  – the number of employed,  $Y$  – output (created income). It is possible to present a product consisting of two components: domestic consumption (processing and raw materials –  $vp_1$  and  $vp_2$ ) and export (processing and raw materials –  $e_1$ ,  $e_2$ ) or  $Y = vp_1 + vp_2 + e_1 + e_2$ . Then as an indicator of structural independence of sector it is possible to introduce  $K = e_1 / e_2$ . It is clear, that, pursuing the aim of economy switching from raw materials orientation to innovative-technological, the process of such switching should consist of, and to be more precise, to express an increase of factor  $K$ . In other words, it is possible to set the task of manufacture structure optimization so:  $K = e_1 / e_2 \rightarrow \max$ . Let's introduce the index of economic sector (system) closure  $Z = Y / (e_1 + e_2)$ , the volume of output (product level per head employed)  $y = Y / P$ , and volume of "processed" and "raw materials" export per head employed correspondingly  $i_1 = e_1 / P$  and  $i_2 = e_2 / P$  (characterizes the degree of raw materials orientation, dependence). Then it is possible to obtain, that  $y = Z (i_1 + i_2)$  and  $K = i_1 P / (i_2 P) = i_1 / i_2 = (y - Z i_2) / (Z i_2) = y / (Z i_2) - 1 \rightarrow \max$ . Analysis of function  $K(t)$  on an extremum, taking into consideration, that  $y = y(t)$ ,  $Z = Z(t)$  and  $i_2 = i_2(t)$ , gives:

$$\frac{\partial y}{\partial t} = y \left[ \frac{1}{Z} \frac{\partial Z}{\partial t} + \frac{1}{i_2} \frac{\partial i_2}{\partial t} \right]; \quad \frac{1}{y} \frac{\partial y}{\partial t} = \frac{1}{Z} \frac{\partial Z}{\partial t} + \frac{1}{i_2} \frac{\partial i_2}{\partial t},$$

Having got the given correlation, let's formulate the optimum structure designing theorem of economic sector:

The optimum structure of economic resource-intensive sector manufacture (Certainly at:  $\frac{\partial K}{\partial t} > 0, t < t_0$  –  $\frac{\partial K}{\partial t} < 0, t > t_0$  - we have the optimum structure of "non-raw materials" development, and at,  $\frac{\partial K}{\partial t} < 0, t < t_0$  -  $\frac{\partial K}{\partial t} > 0, t > t_0$  we have steady structure of the "raw materials" development, full structural, resource dependence) is achieved under the condition, when product change per one head employed in this sector (output) is proportional to the output with the proportionality factor, equal to the sum of relative index increments of an openness/closure of the sector and its raw materials dependence index ( $i_2$ ).

In a more convenient variant this condition can sound so: the optimum structure of manufacture in resource-intensive sector, under condition of scenario realization of "non-raw materials" development of economy, is achieved, when a relative output increment is equal to the sum of relative increments of closure index and raw materials dependence indicator of economy sector.  $\left( \frac{\Delta y}{y} = \frac{\Delta Z}{Z} + \frac{\Delta i_2}{i_2} \right)$

The same is true for economic system as a whole – either resource-intensive or national economy dependent on certain raw materials.

With reference to mechanical engineering which does not export a resource, it is possible to take volume of technologies, cars and the equipment import as parameter  $i_2$  while calculating index of structural independence  $K(t)$ , that is,  $i_2$  is a parameter of import dependence. Then the relative output increment should be equal to the sum of relative increments of indexes of closure and import dependence. The optimum structure of manufacture will correspond to growth  $K(t)$  at observing the named correlation.

It is important to notice, that in agreement with relative increments estimation of the model specified parameters, it is possible to differentiate actions of the state industrial policy concerning the given sector of economy on effecting factor  $Z$  and  $i_2$  to provide the best correlation on factor  $K$ . Undoubtedly, it is necessary to take into consideration other development aspects of the given elementary model, in particular, the purposes – import substitution, counteractions to import growth of finished production of a timber processing complex and expansion of necessary manufactures satisfying the needs of domestic market and export based on domestic forest resources.

As we see, ensurance of co-ordinated financial and technical systems development should become a state policy prerogative. For that purpose it is required to form not only a vector of structural economy modernization and management, but also to select a corresponding coordination toolkit of various economic system sectors.

To achieve this purpose it is necessary to raise management efficiency of the state property under crisis conditions. Making the maximum profit from this property is possible by means of its use for the organization of new manufactures mainly in hi-tech sector and with reference to mass productions creating necessary product mass on domestic market. In other words, it is necessary to direct all the state resources for creation of state corporations of transnational level functioning on the basis of vertical integration principle. It is also required to use lease, and for separate kinds of property with the possibility of its buying-out, say, in 15, 25 or 50 years. It is necessary to stop, at last, the privatization process wasting the state assets. The major trend of government work should be exact estimation of state property and creation of intellectual property accounting system of Russian state enterprises, list creation and monitoring this type of property in order to use the most profitable intellectual resource in future while establishing new production, products and technologies in public sector and on domestic and foreign markets.

As for the state support system of small and medium-sized businesses about which the first officials of the Russian state are speaking, it is not a simple problem. Here one or two instruments or a certain professional opinion are not enough as much depends on, whether the help will be apprehended as the help to a small-scale business, whether it is effective and adequate and in what volume.

Today legislation revision concerning small and medium-sized business is actual. The main tasks are:

- Simplifications of starting a business,
- Minimum registration and control; up to elementary indicators, for example, it is necessary to exclude tax stratifications,

- Incomes legalization. For what it is required to simplify taxation, for example, having imposed only one income tax and/or sale tax (property tax is also possible for the medium-sized enterprises - but its rates should not be exorbitant)

And the scale of sales tax should function incentively towards small-scale business development so that small firms are interested in developing properly. In other words it is necessary to levy taxes on total revenue instead of profit. Sales tax is possible to bring the scale of intermediary and trading small and medium-sized business down, encouraging productive business.

The development of small and medium-sized business, how surprising it can be, will require strengthening of vertically integrated large Russian corporations; without them small and average business in Russia will not sustain a competition from the western firms. One more major direction is professionally oriented preparation and upbringing of people's propensity for business. No taxes, no stimulating institutional norms will force people to conduct independent entrepreneurial activity if there is no propensity, desire and even ability.

Systems support will include the working out of sectoral programs with share and role estimation of small and medium-sized enterprises, the main thing being creations of conditions of credit receipt for various kinds of activity.

It is necessary to make small and medium-sized business independent, that is, to tear them off legislatively from the large industrial enterprises degrading and supplying these small and medium-sized enterprises with resources and exclude the possibilities of their functioning at the expense of the large industrial enterprises. It is necessary to make the basic stress on the development of small and medium-sized business in food-processing industry, in trade of products and clothes, services – hairdressing salons, beauty salons, fitness centers, clubs, rest zones, sports etc. It is necessary to create simple conditions of rent, leasing, provision of information infrastructure. The state policy main objective concerning the development of small and medium-sized business is to provide competition and low prices. In other words, under the influence of small and medium-sized business the original deflationary vector in economic system should be formed. These sectors can act as original opponents of inflation and pressure towards prices increase.

The systems approach and its application are the most important things and they should use a zero point principle. Let us consider that there are no necessary institutes and no mechanisms operate. Then it is necessary to pose a design problem, spreading small-scale business development among economy sectors, revealing its specific character in each sector and to create stimulation methods of its development and competition, and they should be simple in content and implementation and they should be clear for small-scale business agents. Unfortunately, nobody has ever done so in Russia, but it is necessary to act in such a way.

The government of Russia did not have considered policy for a long time concerning public enterprises. Sell-out and large-scale privatization have not raised competitiveness of Russian economy, strengthened either industry or country's technological basis and created an effective owner. To create the owner is

necessary, showing own efficiency, that is, not to reject unprofitable objects because of their financing reduction, but to manage the development of these objects, systematically raising their efficiency.

In my opinion, the property, funds of separate state enterprises should be consolidated and are thus used by the state in large transnational companies with production of finished products (shipbuilding, aircraft, electrical engineering, radio electronics, microelectronics, electronic engineering, instrument making, the equipment, and various mechanical engineering sectors, including military ones).

Structure optimization of public sector is necessary, with ultimate suppression of state property sell-out having obscure or inadequate financial purposes.

The state qualifies to replace management at its enterprises, to pose and finance problems, which are necessary for the solution of state problems at these enterprises. All the designated possibilities of the state should be used for organization of domestic products manufacture with domestic technologies and the state is obliged to finance all this process and to carry out necessary organizational changes in this sphere. If federal programs are not financed, it is out of place to speak about effective financial system in the country. The state problem is to ensure budgetary law execution, defense function, federal programs and projects management and the main function of a financial system – financings of technical systems and wider – financing vital activity, excluding, whenever it is possible, "structural warps» which were discussed in present article.

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