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FINANCIAL AND ECONOMIC CRISIS AS A STARTING POINT FOR THE RENEWAL OF FINANCIAL AND ECONOMIC ARCHITECTONICS

У статті розкрито архітектонічну природу поточної фінансової та економічної кризи, а також сформульовано основні протиріччя, які лежать в його основі. Розглядаються механізми виникнення диспропорцій в економіці та подаються методологічні підходи для ліквідації невідповідностей між теорією та практикою економічного розвитку, а також пропонуються шляхи подолання поточної кризи.

В статье раскрыта архитектурная природа текущего финансового и экономического кризиса, а также сформулированы основные противоречия, которые лежат в его основе. В статье рассматриваются механизмы возникновения диспропорций в экономике и представляются методологические изыскания для ликвидации несоответствий между теорией и практикой экономического развития, а также предлагаются пути преодоления текущего кризиса.

The author shows the architectonic nature of the current financial and economic crisis and formulates the main contradiction which is its underlying source. He also reveals the mechanism of the accumulation of disproportions in the economy and provides methodological foundations to bridge the gap between the theory and economic development and to look for ways to overcome the current crisis.

architectonic, financial and economic crisis, accumulation of disproportions, methodological foundation

The current crisis is not only financial but also economic. It is not a local crisis affecting individual markets and regions, but a global one covering all the components of the complex global socio-economic organism. The crisis also has cyclical character, but actually it goes beyond all the above mentioned characteristics. It sharply «criticizes» not only activities of individual governments and economic communities but also the whole financial and economic order of the world. The current crisis demonstrates the lack of correspondence of the existing concepts of modern economy, regulatory institutions and methods to maintain financial and economic stability to the new realities and calls for search of adequate responses. But crisis does not only mean decline of economies and markets, but also a way to their renewal.

Analysis of the current crisis in the context of the need of essential changes in the order of the global economy arrives at the category of financial and economic architectonics, which is a component of the emerging branch of knowledge, whose name is **architectonics** [4]. Architectonics (from Greek *architektonike* – the art of building) is a capacious and polysemantic notion. It is used in architecture for artistic expression of the building's regularities characteristic for its design; in literature it means the main principle of a literary work as a single whole, and integral interaction between its main parts or composition; in geology it means the overall picture of geological composition,

and peculiarities of the occurrence or location of rock in particular locality [6, p. 118]. There also exist more general definitions of architectonics as the main principle of construction, relationship and mutual conditionality of the elements of a whole [7, p. 70], which unites architectonics with the notion of structure.

Emphasizing the specific character of architectonics, one should point out that *firstly*, it means the structure of an integral system, and not any system, *secondly*, it corresponds to the most fundamental ties, *and thirdly*, architectonics is a structure, which reflects the system's essence and hence it is constructed in accordance with the laws of beauty and aesthetics (which is reflected in one of its meanings as the art of building). From the above it's possible to insist upon the subject of architectonics' being the general regularities of the construction of integrated systems. Those systems may be natural, biological or social, but their common feature is integrity. Integrity is a generalized characteristic of objects with inherent complex internal structure. It expresses integrity, self-sufficiency and autonomy of those objects, as well as their contraposition to their environment related to their internal activity and characterizes their qualitative originality resulting from certain implicit regularities of their functioning and development [10, p. 763].

From the above spoken about, ***financial and economic architectonics may be defined as such steady interconnection between economic and financial elements of the system, which is adequate to the system's essence, imparts it certain integrity and correspondingly, constructs it in accordance with the laws of beauty and aesthetics.*** The term's duality (financial and economic) reflects, on the one hand, a relative independence, and, on the other hand, mutual penetration and mutual dependence between the financial and economic components of the integral system.

Global crisis affects the bearing structures of the financial and economic system, jeopardizes its integrity, creates risks of its deformations and destruction and thus is of architectonic nature. That is why the adequate response to the crisis' challenge should also be of architectonic nature, i.e. it should suggest the changes in the structure of the financial and economic system corresponding to the present realities and restoring its integrity and development balance. Hence, the financial and economic crisis acts as a bench mark of a new financial and economic architectonics formation.

Undoubtedly, if architectonics exists as a branch of knowledge, so do its main laws. They should characterize the most common and essential ties between the elements of an integral system, which are constantly reproduced and determine its development. Three such laws can be mentioned: ***the law of equilibrium, the law of averaging, or golden mean, and the law of hierarchic structuring or golden section.***

The essence of the law of equilibrium is based on the fact that all elements of an integral system move towards rest relative to other elements or stay in that state. The law of equilibrium acts in all integral natural, biological and social systems. In physics, it can be illustrated, for example, with the Newton laws as well as with other laws. In economics, the laws of value, supply and demand, money circulation and others are, as a matter of fact, equilibrium laws. The very mathematical expression of the laws in the form of equation illustrates the balanced state of the system.

The law of averaging is a more concrete form of the law of equilibrium. It provides special and quantitative characteristic of the interaction between homogeneous elements of an integral system, which are in permanent movement. While equilibrium in itself does not contain special characteristics and only fixes the equality of values, but not the values themselves, then averaging in its essence is a spatial and quantitative notion. The middle is in a certain space and has a certain (average) value. That value expresses the system's integrity in relation to other systems. It integrates the action of all elements into one characteristic. For example, average temperature is a law of the fluctuations of different temperature values around a certain average value. In accordance with the labour theory of value, the law of value regulates prices, which

are determined by the socially necessary (average) labour time spent on the production of the corresponding goods. Average income, average expenses, and average profit are generalized characteristics of income, expenses and profit as a whole relative to another whole. The incidence of the law of averaging is narrower than that of the law of equilibrium because equilibrium is possible not only on the principle of averaging. For example, the law of diminishing utility can be also considered among the laws of reaching the equilibrium. In the end, marginal utility satisfies a need of a person bringing to the state of equilibrium. Marginal income equalizes income with expenses etc. But that law cannot be considered as an averaging law.

The third law of architectonics – the law of golden section – characterizes the interconnection between the elements, which have internal factors of development and are able to unite in certain integral structures within a wider integrity. In accordance with this law, the whole is divided in parts in such a proportion that the ratio between the whole and the larger part is the same as the ratio between the larger one and the smaller. This law relies on the action of the two previous ones, because structuring in accordance with the law of golden section takes place, *firstly*, based on the elements' movement towards the state of equilibrium, *secondly*, the state of equilibrium is attained at the point of averaging, and it is the averaged values expressing an internally complex element as an integrity, that are structured in accordance with the law of golden section. The law of the golden section is the most complex one, because it acts in those integral systems, whose internal elements form integrity themselves. That is the internal elements of an integral sub-system (an element of a wider integrity) reflexively correlate not only with the elements of their own integrity (sub-system), but also with elements of a wider integrity.

The significance of the law of equilibrium has been recognized by the scientists of all branches of knowledge. Functioning of the space system, chemical state of different substances and chemical reactions, biological life of the organisms, development of social institutions etc all is described by the laws reflecting the movement towards the state of equilibrium. In a sense, the whole history of economic thought is the search of the laws of the equilibrium of economic system. All classical approaches are based exactly on the regularities of the equilibrium. The action of the law of golden mean has been also revealed as to different areas of reality and the law's universal and specific features have been displayed [12]. The action of the law of golden section in economy was scientifically proved by I. Kryuchkova [5] on an extensive statistical material. Here it is advisable only to illustrate the interconnection between the three main laws of architectonics on an economic example. Let us do it on the example of value as one of the most important economic categories.

Interaction between supply and demand leads to establishing equilibrium between them. That is a concrete manifestation of the action of the law of equilibrium. All analysis of value and capital was carried out by K. Marx on the assumption of the equilibrium between supply and demand. Under such conditions, price is determined by value formed by socially necessary (average) time spent on manufacturing particular item. Prices fluctuate around value as their law, which expresses their average magnitude. Thus the law of averaging is realized, which is a more concrete form of the action of the law of equilibrium. Finally, if we consider value as integrity with all its attributes (value carrier, its material embodiment in the means of production, process of its creation, goods etc) then we will arrive at the notion of enterprise as a certain integrity functioning within the market economy as a wider integrity. The enterprises' ability to develop, their competition, mergers and concentration of production lead to value structuring (the enterprise size in value terms) which takes place, as shown by I. Kryuchkova, in accordance with the law of golden section. Such structuring does not cancel the laws of equilibrium and averaging, but is realized on their basis. Hence the law of golden section is the most concrete and integral form of action of the laws

of equilibrium and averaging. The above mentioned main laws of architectonics act in all integral systems including the financial and economic ones. In the latter case the matter concerns financial and economic architectonics. The laws of architectonics should be taken into account in theory and practice of overcoming the present crisis and renewing the society's financial and economic structure.

To solve this task, one should first of all reveal the main contradiction whose development gives rise to other derivative contradictions and economic disproportions and eventually leads to the crisis.

The main contradiction of the modern financial and economic system is the contradiction between the generation of real value and the movement of its monetary and financial forms. A direct demonstration of that contradiction is the discrepancy between the development of the real and financial sectors, which becomes apparent as excessive increase of circulating securities and their derivatives, the multiplication of fictitious capital, in sharp decrease in the value of securities during crises, which is incomparable with the output decline in the real sector etc. Thus the ratio of the derivatives to global GDP amounts to 964%, that of the securitized debt – 138%, broad money – 122%, and monetary base – 9% [8, p. 21]. During 2001–2007, the volume of the derivatives market increased more than fivefold [3, p. 5], which is incomparable with the growth rate of real economy. It is quite clear that such a contradiction between the rates of the real and fictitious value is to be burst in a crisis.

Movement, aggravation and resolution of the contradiction between the real value and the movement of its token representatives (money and securities) on the financial market are related to fundamental mechanisms of capital circulation. The movement of real value and that of the value represented by modern (rather token than real) money and securities diverge in the starting point and acquire an interrelated character, but exist separately. And the more becomes the separateness, the more complex, tangled and weaker is the interconnection in the modern financial relations and the greater becomes its discrepancy with the fundamental interdependence. In this movement, part of value represented by money and securities becomes fictitious. In its consequent movement, it enters the turnover as real one, because it is exchanged for its real equivalent. Having entered the real turnover fictitious value becomes real-and-unreal or virtual value.

Fictitious value may be both positive and negative. For example, part of the realty value, which, because of changed conditions can not be sold on the market for its real value becomes fictitious value, which falling out of the market turnover.

Movement and accumulation of virtual value are prerequisites of financial crises, which cut off fictitious value and bring the price proportions in correspondence with the real ones. That is why the modern financial crises are nothing but a form the law of value realization under the conditions of increased role of financial markets. The above statement can be confirmed by the fact that quite often, despite the turmoil on the financial markets resulting in hundred billion losses for the agents of those markets, the real reproduction process remains basically unchanged.

The core and main channel of the disproportions accumulation and value virtualization is the mechanism of capitalization. If any economic sector is rapidly developing, it has high profits and correspondingly increased capitalization, higher possibilities to attract new resources and raise the volume of credits etc. But the companies' value determined by their shares' quotation and their real value embodied in their productive potential, means of production and labour are two different variables. The value determined by capitalization includes a fictitious part, which begins to circulate, to change for real value and becomes virtual. And against that fictitious value credits are granted and derivative securities are issued making the whole process increasingly divergent from its real basis. In the end, all the above mentioned developments lead to a financial crisis.

Another channel of the accumulation of disproportions in the world economy is reflectiveness¹ of value, money and price, which are reflected in each other and penetrate in each other. Increased price as the money expression of value simultaneously means increased amounts of money and value necessary for its realization, and increased amount of money in circulation raises the prices and, correspondingly, the value. The same applies to value. However, in the above mentioned reflective interactions, the parties are not equal in rights. Value forms the real basis of reflectiveness. It is the source of the real growth; it emits the real not reflected light. That point is principal both for theory and practice of the regulation of money circulation and credit and financial relations.

Reflectiveness also occurs in relation to price, supply and demand. That is expressed in the fact that prices depend on supply and demand while supply and demand depend on prices. If the economy is well balanced and stable, then the reflectiveness of the relationship between prices, supply and demand does not become apparent. Its components are divided into relatively independent ties isolated in space and separated in time. Demand is the first to react, then follows the response of prices and supply, or vice versa. But if a considerable imbalance appears, and emission mechanisms are not adequately connected to the movement of real value, then prices and supply begin to reinforce each other and the inflationary spiral begins. What can serve as a stabilizing anchor in this case? Undoubtedly, it is money. It embodies price and it represents market demand. That is why, if money is issued in accordance with the increase in real value, then stability is not broken and vice versa.

However, the modern mechanism of the emission of world money which is now represented, first of all, by the US dollar, is not directly connected to the creation of real value. It is rather related to demand for money, which represents both real and fictitious value. That is why ***there exists a mechanism of accumulation of «excessive» money in the economy.*** The modern system of money circulation, emission and accumulation is organized in such a way that excessive money emission does not immediately lead to a corresponding growth of consumer prices. In the industrialized countries, the households' additional incomes do not «splash out» to the consumer market, because the basic consumer needs are satisfied.

And there are other «reservoirs» that are the first to absorb the resulting «excess». It is the financial market, realty prices, and monopolistic goods. So the money «excess» in the economy does not raise consumer prices, but increases capitalization, realty prices, and credit volumes (because against more expensive realty and securities one can receive greater credits etc). Filling up those «reservoirs» postpones the appearance of the disproportions and leads to their accumulation. The inevitable consequence becomes reaching a point where crisis begins, and consequently take place the changes bringing the price structure into accordance with the real value-based proportions.

The above mechanism helps understand how it may happen, that prices, for example, oil prices may increase several times without any considerable change in production costs and then considerably decline. In the first case, the reflective interaction between price and supply begins to act supported by inadequate to the increase in real value mechanisms of money emission. In the second case the price proportions are brought back to the real value-based relationships.

The mechanism of emission of the dollar as the world currency fails to maintain long-term stability, but it makes it possible to solve the problems of the US economy at the expense of other countries. Such a situation reflects another fundamental disproportion of the modern economic world and the inevitability of the correction of that mechanism.

The current crisis phenomena in the economy and in the financial sphere demonstrates the inability of the dominant theoretical concepts to answer the new demands of life. The

¹The notion of «reflectiveness» in a somewhat different interpretation is given much attention by G. Soros in his analysis of the functioning of financial markets [9].

unpredictability of the very financial crises, price changes (for example, changes in oil prices), the inability to find ways to solve the global problems that mankind is facing (for example, that of bridging the gap between the levels of development and the rich and poor countries) and many other unsolved problems all are graphic evidences of the existing gap between theory and practice.

Knowledge becomes increasingly network-based, lacking a single principle, subordination, consistency, a single criterion etc. Contradicting opinions may easily «get along» with each other and co-exist, while the researchers feel no inconvenience from their inconsistency, they do not even notice it. Theory evolves superficially, developing its functional approaches, but at the same time forgetting about issues of essentiality and manifestation forms, in particular, those concerning the integrity of the financial and economic systems.

But the modern economy cannot develop solely on the basis of self-regulation. And it requires rigorous solution of the complex issues of economic regulation. For example, in conducting monetary policy, money emission, inflation targeting etc. one cannot obtain positive results without rigorous approaches and calculations involving the use of complex economic and mathematical models. One can plough and sow even holding to the concept that the Sun rotates around the Earth. But with such ideas it is impossible to launch a satellite. The same applies to economy. Stability of golden money can be maintained on self-regulation basis, but stability of token and ideal money can be maintained only based on a rigorous approach to the regulation of money circulation. This suggests that the outcome from the current architectonic financial and economic crisis involves a considerable renewal of theoretical concepts and practical tools.

Such a requirement also follows from the appearance of principally new economic regularities related to the formation of the «new economy» and the network information society. Thus the utility of network goods, unlike that of ordinary ones, may increase with their number. For example, the more mobile phones, the more connections may be established so the greater is the phone's utility. That is, with the increase in the number of mobile phones their utility increases too. Correspondingly grows the demand for them. That is why the demand curve of network goods looks quite differently from that of ordinary goods. The more is network participants number, the bigger is the demand [10, p. 166].

Also quite different is the situation with the costs of the production of the network goods. While ordinary goods are governed by the law of diminishing returns, the profitability of network goods grows during a quite long period as a result of considerable decrease in costs. «For example, during the formation of the modern technological structure in 1960–1985, the cost of a calculating operation reduced 10000 times. During this order's intensive development in 1974–1992, the value of a unit of the useful effect of computer facilities decreases 20 times, which was followed by the expansion of demand for it and corresponding increase in supply» [1, p. 34].

In such a situation, supply and demand curves grow by different trajectories, crossing each other in a certain point. But it is even more correct to say that supply and demand curves cease to adequately reflect the real situation and become just a short-term characteristic of the market of one or another item. A paradoxical situation appears: «if a good increases in value as its amount grows while its price decreases as its worth for the consumer grows, then we arrive at the following conclusion: under the conditions of the new economy, the greatest worth corresponds to the good that is provided free [10, p. 166].

If we now build the aggregate demand curve combining the curves of demand for ordinary and network goods with opposing slopes, then the resulting curve will not be a usual aggregate demand curve. The same applies to supply. That is the usual theoretical models with whose help it was possible to understand and explain pricing, no longer apply. A different macroeconomics appears based on different laws as compared to the

macroeconomics of ordinary goods. In this new macroeconomics, the curves of supply and demand become subordinate to other and wider regularities, and various kind of synergic effects appear with non-linear relationships and no causal links.

On what principles should one conduct monetary policy under such conditions? What reference points should be used? Because the main reference points that were used formerly are lost. We are gradually approaching a point where our usual ways of thinking, elaborating theoretical concepts and practical measures and political instruments will become hardly adequate to the new economic realities.

This will be followed by financial instability, and search for ways to overcome the crisis and new regulation techniques. Unfortunately, such cause of things is inevitable. But if we timely realize the problem and start corresponding scientific research to learn the new regularities and find ways to adapt to the new realities, then the losses from such transformations will be lower.

The key point to bridge the gap between theory and practice is returning, on the new basis, to understanding value as an independent reality different from its particular manifestations in the form of money, prices etc. This will make it possible to couple the real process of value creation with its representatives on the financial markets. As methodological foundations to comprehend the principally new phenomena and find ways to overcome the crisis and create a new financial and economic architectonics may serve the socio-temporal theory of value [2, p. 87–133], the representative theory of money [2, p. 135–151] and the reflective theory of price. Those three basic concepts allow explaining both past economic realities and the new processes which are in many aspects unusual.

The socio-temporal theory of value considers social time and space as the mutually penetrating characteristics of the single economic reality. It integrates the methodological approaches of the labour theory of value and marginalism and interprets value as spatially localized socially necessary time of the reproduction of those goods whose *utility exceeds marginal utility*. It differs from the labour theory in that it couples value not with labour inputs, but directly with the time of reproduction of a good, which, in the process of historical development, progressively less characterizes labour inputs, separates from them and acquires an independent form of existence. The theory considers marginalism as an individual case of finding the foundation of subjective choice of a good, when this choice is not yet burdened by the need to lose an already possessed alternative good. In everyday life, it corresponds to the situation when one chooses from the possible goods before looking at the price list. The socio-temporal theory of value also couples free, necessary and surplus time in a single reality developing over time and changing the forms of its unity, which allows to better understand and assess the sense of both their past and future mutual conversions.

In a broader sense, *value may be defined as the foundation of the choice of a good, whose marginal utility is equal to the utility of free time that is to be sacrificed converting it into socially necessary time materialized and spatially localized in goods, and then, in its movement as a special form of unity between economic space and time, separated from material goods and labour inputs and turned, in the form of money, into goods reproduction time equivalent.*

The representative theory of money is based on the socio-temporal theory of value being its natural continuation and form of development. It interprets money as a representative of value equivalent in the process of exchange. As a representative may serve real good, or token, or ideal money.

The theories of money too develop in correspondence with the real development of the concept of value in exchange. That is why the representative theory allows considering other existing in history concepts of money as historically conditioned attempts to express the essence of money through their most important and urgent, for the corresponding time, functional forms.

The reflective theory of price reflects the unity of value and money, as well as their mutual glare and penetration. In price, value, by means of money, perceives itself

and returns to itself being measured and represented by a certain amount of money. In this way, value removes its own transcendental and appears as a quite usual and practical thing. And this fact plays a very misleading role in the human history. On the one hand, it makes people cherish the illusion that price determination is the direct determination of value, and analysis of the money flows allows to fully reflect its movement, and, on the other hand, it created preconditions for practical disregard of the decoupling of the movement of value *represented* on the financial markets from its real value based foundation.

The correspondence between the value represented on the market and real value is the basis for confidence. If it is infringed, appears a confidence crisis with all ensuing economic consequences.

From the above one can conclude that *overcoming the current financial and economic crisis will be in the long run associated with establishing, on a renewed theoretical basis including the socio-temporal theory of value, the representative theory of money and the reflective theory of price and with regard to the laws of architectonics (those of equilibrium, averaging and structuring of the value aggregates in accordance with the proportions of golden section) adequate ties between the financial markets, the multiplication of money, credit and capitals with the real process of value growth. It will also be associated with the emergence of regional currencies each assuming part of the global functions, with a tendency to consequent integration; with the restriction of the international standards; with the globalization of the system of the financial markets regulation; and with due regard for the changing contents of the macroeconomic dependences in the economic policy under the development of the information network society.*

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