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THE INVESTMENT ATTRACTIVENESS INCREASING OF BLACK SEA POSTSOCIALISTS COUNTRIES: SYNERGETIC APPROACH

Introduction

For present situation taking place a global economy and in the economy of the Black sea postsocialists countries particular accurate and clear priorities in the socioeconomic development in the cities of this region, their self-determination among the objects of internal and external environment on regional and international markets which will enable to build up relations with investors and financial organizations effectively, to reaction adequately on strategic challenges of global economic system.

The methodological should be research determined of global and regional integration of economic systems was initially done in the works of Z. Amin, I. Wallerstein, T. Levitt, A. Marshall, D. Meadowz, R. Merrit, G. Modelski, G. Myrdal, J. Randers, J. Stiglitz, A. Frank, S. Huntington, R. Schoenberg, J. Schumpeter and others.

The most significant works concerning this problem belong to such Ukrainian and Russian scientists as O. Bilous, I. Blank, V. Budkin, U. Kozak, V. Collontay, E. Kochetov, D. Lukianenko, U. Makogon, V. Novitskiy, U. Pachomov, E. Saveliev, B. Smitienko, V. Chugikov, I. Shkola, O. Shnirkov.

Despite of the considerable number of works of foreign and domestic scientists concerning countries' investment attractiveness of the countries, regions and certain branches of economy, there are should be system approach to investigation of the investment development process of cities of the Black sea countries in the context of integration processes intensification within the boundaries of The Black sea Economic Cooperation Organization.

The aim of this article is to define approaches of investment attractiveness growth of the cities of The Black sea region on the examples of the methods used for creating of Donetsk Investment Development Program.

Research results

The invention of computers and the development of computer technology have had a significant impact on the methodology of scientists, researchers and economists. Until recently, actually, a «life» experience served to economists as the analogue of experiment, which they have scooped from publications in scientific

journals, monographs, etc. As a further improvement of methods for the study of socio-economic systems may be the development of toolkit, which makes it possible to carry out experiments with the model, but not with the system itself. Methodological basis for modeling and studying the economy as a complex nonlinear system can be Synergetics or Selforganization theory. At present, it is actively developing the study of socioeconomic systems from the standpoint of new scientific directions of Synergetics — Catastrophe theory, Chaos theory, bifurcation, attractors, entropy, extra capacity and so on.

In spite of increased interest in Synergetics in recent years (Yankovskiy et al., 2010), a lack of works in the field of mathematical modeling of socio-economic systems and insufficient number of teams working at a modern level are observed.

Synergetic ideas began to penetrate into the socio-economic sciences from the late 80-ies. Basically, with few exceptions, the authors of the first works in the field of economic synergetics were physicists and mathematicians. Results have been obtained by means of synergetics specific toolkit — identification of order parameters, design of nonlinear mathematical models, carrying out of computer experiment —, which should be comprehended by economists, and they, in some sense, can change the methodology of economic researches.

Why do economists deal with Synergetics? Synergetics, first of all, is of great importance as a view on events that take place in the world, differing from the traditional deterministic aspect, which has been dominating over science since Newton's times. In other words, Synergetics is useful as means of scientific data interpretation in a new way. It allows you to observe and assess what, probably, remain outside the traditional review. Thus, the initial terms of orthodox economics are the following:

- people tend to the goal: consumers — to get the maximum benefit, producers — the maximum profit;
- movement to the goal is a predefined process, clearly predicted and universal (i.e. identical in all countries). The result of the processequilibrium market — is also unambiguous;

— movement to the equilibrium market occurs spontaneously and state control for this purpose is not needed, moreover, it is not desirable.

Synergetic approach, on the contrary, bases its conclusions on the following:

— economy is a developing system and should take into account the theory of developing systems;

— when moving to the goal, due to nonlinear feedback there can be unstable and chaotic stages. This, in its turn, may lead to the different final states of market equilibrium. Modern science can estimate the probability of different options, but cannot give a definite answer which of them will take place. Therefore, modern science does not accept the unambiguous prediction of the future and thus it differs from the orthodox economics;

— when there are several equilibrium states, the problem of choice is aggravated. This problem should be resolved by State taking into account the peculiarities and national interests of the country.

Synergetics let us see the world from «another system of coordinates». Synergetic scientist's conclusions are often unexpected and contrary to accepted truths. However, it is such a view allows us to find out what is lost in the traditional perspective, and to warn of the serious dangers that may arise during the development of society, if the critical, evolutionarily proved decisions will not be taken at the bifurcation moment of choice. Possibility of scientific study of crises and catastrophes has long been questioned because of originality and uniqueness of these phenomena. Later, however, much common was found in development of crises and catastrophes of various natures.

According to Synergetics (Yankovskiy et al., 2010), two models describe the society development as a nonlinear system: evolutionary and bifurcation. Distinctive feature of the evolutionary development is the constancy of the system quality. This is a period with well-predicted linear changes. However, it is here the growth of internal disequilibrium occurs, a growing crisis. The destruction, destabilization of each system has its own way. The system structure has its weak points, which can have the greatest impact. Therefore, destabilization depends primarily not on the specifics of external influence, but on the system structure.

The essence of the investment climate should be considered at macro- and microeconomic levels. At the macro level it includes factors that characterize political and economic situation in a host country, and the socio-psychological condition of the population. In the first case the main role is devoted to such parameters as state policy concerning foreign investments, the tradition of observance of international agreements, the propensity to nationalization of foreign property, the solidity of state institutions, the level of state interference in the economy

etc. According to conditions the political factor is dominating while evaluating the investment climate in our country by a potential investor.

In terms of economic parameters of the investment climate the prior ones are indexes that characterize the overall macroeconomic dynamics, the currency status, financial and credit system of the country, customs regime and the regime of the work force employment.

The micro level the investment climate reveals itself through bilateral relations between an investor and the certain government bodies, economic entities — suppliers, buyers, banks, trade unions and working teams of a host company while both levels are closely interrelated. The investment climate is formed under the influence of the management activity of the public authorities. The latter can be consciously directed to the establishment of the particular investment environment in the country and it can be built without taking into account the possible consequences for the foreign enterprise, but with the influence on it. Thus every country opened to the import of capital has at her disposal a specific system of capital adopting that represents a set of the elements of the regulatory and legal base and institutions which carry out state policy with regard to foreign capital investments. Generally capital acceptance system reflects the intention of the host country to find the optimal variant to include foreign investments into the solution of foreground tasks of national development.

To implement these objectives defined in Donetsk socioeconomic development Strategy until 2020, it was provided the elaboration of Donetsk Investment Development Program until 2020, the main aim of which was to attract maximum investments from the all sources and an increase of efficiency of their usage by concentrating on the prior directions of the socioeconomic and social development of the city. The result of this program realization should be:

— the improvement of living standards and the population welfare in accordance with defined in the strategy natural and monetary indexes of the socioeconomic growth of the city and the standard of living in Donetsk;

— the guaranteeing of constant socioeconomic development of the city on the basis of the prior activities determination and economic policy directions;

— Donetsk integration into the system of national and international flow of financial resources;

— the formation of partnership between city's executive authorities, representatives of business and general public;

— the creation of an effective control system of the city in order to solve the problems connected to the socioeconomic development.

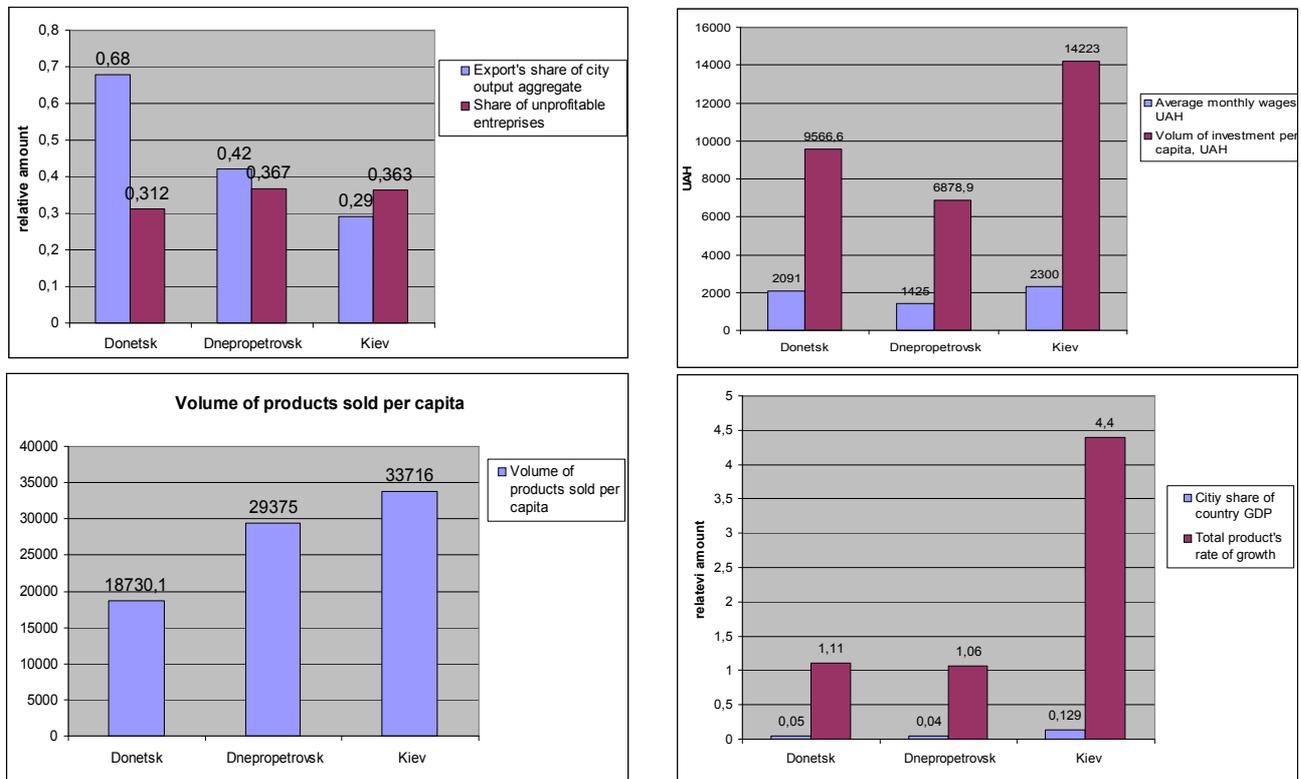


Fig. 1. System of analytical indexes, which characterize the level of economic development in Donetsk, Dnepropetrovsk, Kiev

Source: Statistic department of Kiev, Donetsk and Dnepropetrovsk

In order to achieve this goal in the process of the work done by the executive team the chief of the work team who is the author of this article has set and solved such tasks:

- an assessment of investment attractiveness and Donetsk potential has been made;
- the directions of investment attractiveness increase and realization of Donetsk investment potential have been elaborated in order to solve socioeconomic development tasks;
- the long-term and short-term program of measures and actions has been elaborated to mobilize investment resources from budget and off-budget funds, private domestic and foreign sources and also to use them effectively for the constant innovative development of the city;
- the system of encouraging companies which are busy with the construction of buildings of paramount importance for the city, has been formed;
- the methodical security of the assessment of economic and social effect has been developed taking into account investment projects which can be implemented with use of state measures of stimulation;
- the information support system of the city's investment development has been formed;

- the directions of constant monitoring system of the Donetsk investment climate have been determined.

The integrated index of cities' investment attractiveness according to the author's methods (Orekhova, 2009) was suggested to calculate as an average quantity of five synthetic indexes which are average quantity of the system of standard analytical indexes:

$$G = 0,25ED + 0,2II + 0,2SDCh + 0.15MRD + 0,20IP,$$

Where ED —the level of city's economic development;

II—the development of commercial and investment infrastructure;

SDCh —sociodemographic characteristic of the city;

MRD —the development of market relations;

IP —innovation potential of the city.

The assessment of Donetsk investment attractiveness potential was made firstly on the principals of -SWOT analysis, secondly —comparative analysis of the similar indexes in Kiev and Dnipropetrovsk cities which leaders to attract the direct foreign investments to Ukraine.

The comparative analysis of the indexes that characterize the level of economic growth in Kiev, Dnepropetrovsk and Donetsk gave a possibility to make

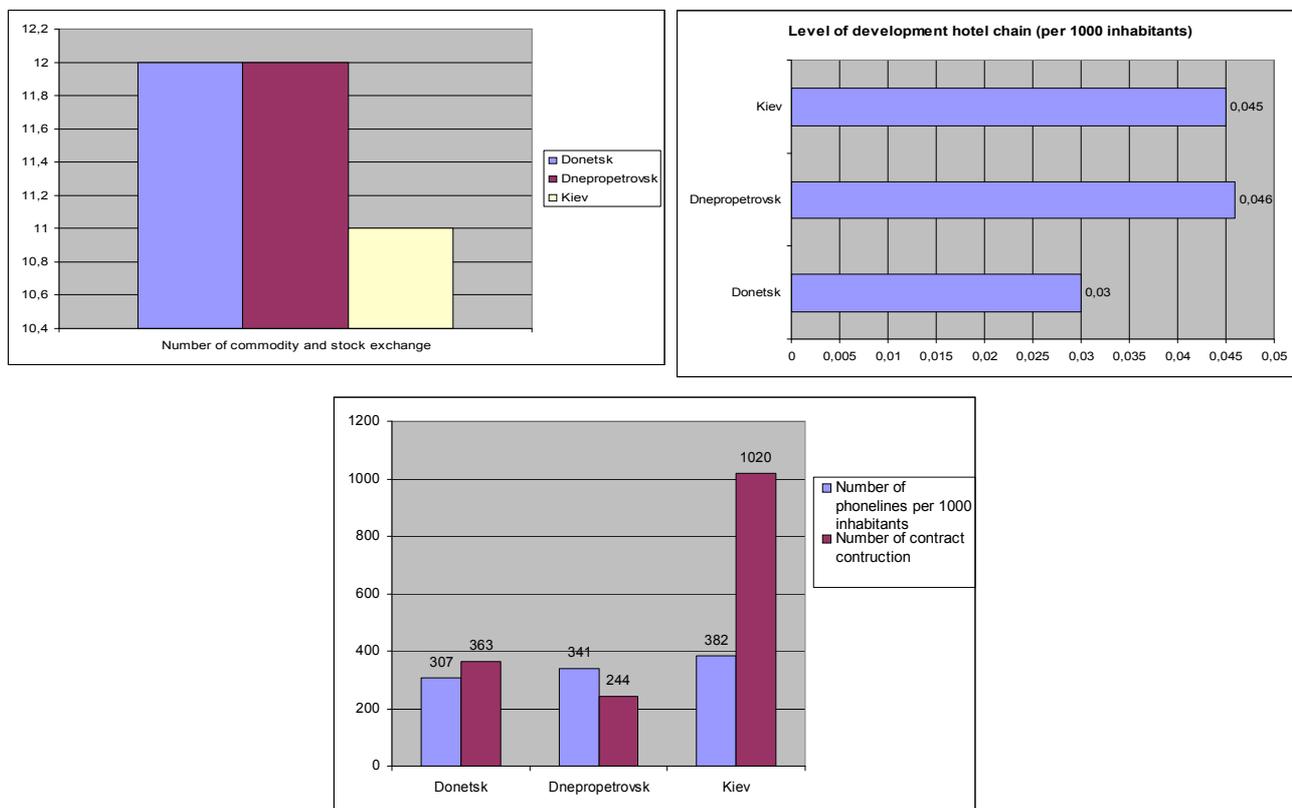


Fig. 2. Indexes, which characterize the level of development commercial and investment infrastructure

Source: Statistic department of Kiev, Donetsk and Dnepropetrovsk

a conclusion that in Donetsk a number of the unprofitable businesses are lower by 15% than a similar index in Dnepropetrovsk, and by 14.01 % in Kiev. The share of export in an output aggregate of the city exceeds the similar index by 2.1 in Kiev and by 1.46 times in Dnipropetrovsk.

At the same time the volume of the sold products per capita in Donetsk is lower than similar indexes in Dnepropetrovsk and Kiev (more than by 1.57 and 1.8 times respectively). Besides Donetsk is behind the above mentioned cities in terms of the output aggregate increase (in comparison with Kiev — almost by 4 times), and in terms of the city’s specific gravity index in the gross product of Ukraine Donetsk 2.58 times behind Kiev. Although the Donetsk average wage rate is 1.5 higher than the index in Dnepropetrovsk, but is 1.1 times lower than the wage rate in Kiev.

The level of capital investments per capita in Donetsk is higher than the similar index in Dnepropetrovsk, but 4656,4 UAH (by 1.5 times) lower than in Kiev.

The comparative analysis of the commercial and investment infrastructure development that has been carried out, has shown that the number of stock and commodity exchanges in Donetsk the same as in Dnepropetrovsk and 1.1 times higher than in Kiev (fig. 2).

At the same time Donetsk is 2.8 times lower than in Kiev as for number of construction companies, in terms of hotel business development is by 1.5 times lower than in Kiev and by 1.53 times than in Dnepropetrovsk and as for number of telephone lines per thousand inhabitants — Donetsk is lower than than Kiev by 1.24, Dnepropetrovsk by 1.11 times.

According to comparative analysis of the main demographic characteristics Donetsk is behind Dnepropetrovsk as for the number of students of University from the total population of the city and it is 2 times behind Kiev. In terms of the average monthly wage Donetsk is ahead of Dnepropetrovsk and behind Kiev (fig. 3).

The comparative analysis of the level of market relations development in the above cities has shown that Donetsk is a leader in terms of the index of a joint stock companies share in the total number of economic entities (by 6.3 times higher than in Dnepropetrovsk and by 1.73 times — than in Kiev (fig. 4). At the same time we can see the Donetsk weak position in terms of the number of enterprises with foreign investments (by 3.7 and 6.5 times respectively) (fig. 4).

The comparative analysis of indexes that characterize the level of innovation potential development reveals that Donetsk is behind in terms of the number of

“SRACD” executives compared with Dnepropetrovsk by 1.98 times, with Kiev — by 7.28 times; in terms of share of the enterprises that introduce innovations it is 3.6 lower than Kiev; in terms of the volume of the “SRACD ” implemented — by 1.6 times than in Dnepropetrovsk and by 6.7 times than Kiev (fig. 5).

So, the comparative analysis conducted on the basis of author’s program of the investment attractiveness potential of Donetsk, Kiev and Dnepropetrovsk has shown that Donetsk is 1.5 lower than Kiev in terms of integrated index of investment attractiveness potential, but it is ahead of Dnepropetrovsk- by 1.2 times that is confirmed by data about actual attracted foreign investments in the economies of these cities (fig. 6).

Thus, strengths of investment potential of Donetsk are advantages of economic and geographic location, high industrial potential and good supply materials, presence of large internal investors, developed system of interindustrial links, presence of vertically-integrated business, high personal income in comparison with average income in Ukraine, presence of high scientific and skilled potential, high level of education.

Business infrastructure is a resource which makes Donetsk attractive for investors (transport, road and rail network, hotel chain, telecommunication service, housing and community amenities, informative services).

Dynamic of investments from all sources of financing, development of market relations, part of low-technology branches of industrial production, enterprises innovative activity also play their role in this city attractive.

The long-term and short-term programs of the city investment development need mobilization of investments in a short-term period (before 2012) for the real sector of economy — 6645682.2 thd UAH, in the services and infrastructure sector — 12014656.1 thd UAH, in the social sector — 572950 thd UAH, in the innovation and energy conservation sector — 586120,015 thousand UAH, in the ecology and environment protection sector — 989134 thd UAH; in a long-term period (before 2020): in the real economy sector — 3232189 thd UAH, in the services and infrastructure sector — 194191117.6 thd UAH, in the social sector — 255805 thd UAH, in the innovation and energy-saving sector — 4944369.55 thd UAH, in the ecology and environment protection sector — 60126 thd UAH .

The total sum invested in perspective projects which were in Donetsk Investment Development Program before 2020 was 7652964.9 thd UAH, the total demand for investments for these projects is 241811379.6 thd UAH. The general systematization of financial sources of Donetsk Investment Program realization before 2020 is done on fig. 7.

The traditional financial sources of the investments projects on industrial projects and in services are private

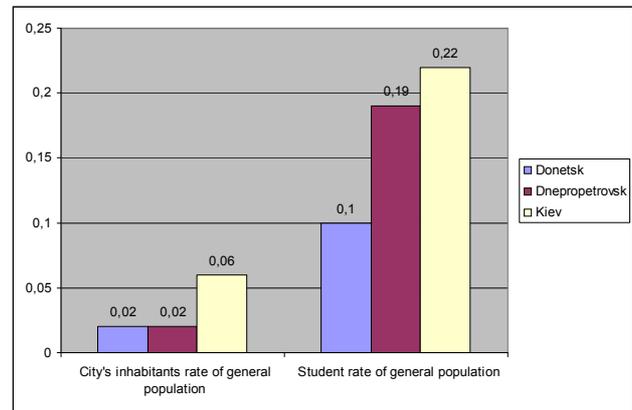


Fig. 3. City’s social-demographic indexes

Source: Statistic department of Kiev, Donetsk and Dnepropetrovsk

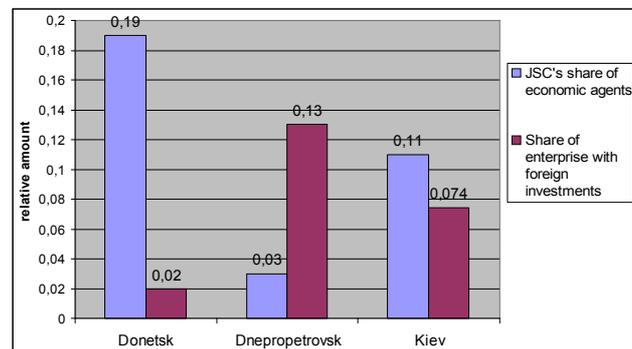


Fig. 4. Status of development market relations indexes

Source: Statistic department of Kiev, Donetsk and Dnepropetrovsk

capital both from private investors funds and credit funds except the state owned objects.

From the above said the directions of investment attractiveness increase and realization of Donetsk investment potential should be :

— **the intensification of investment attractiveness** aimed at infrastructure development and precisely transport infrastructure development with regard to socioeconomic needs of city’s development; high speed rates of communication infrastructure development, the increase of investment attractiveness of IT spheres; a substantial improvement of national telecommunication network; the construction of the shopping malls, offices, cultural and sport centers; the development of the hotel business, reconstruction of old construction of the new accommodation, reconstruction of engineering networks and equipping of house and municipal services in order to provide citizens with living conditions that are up to the level of up-to-date quality standards; replacement of industrial sites beyond the central part of the city;

— **the improvement of the normative legal**

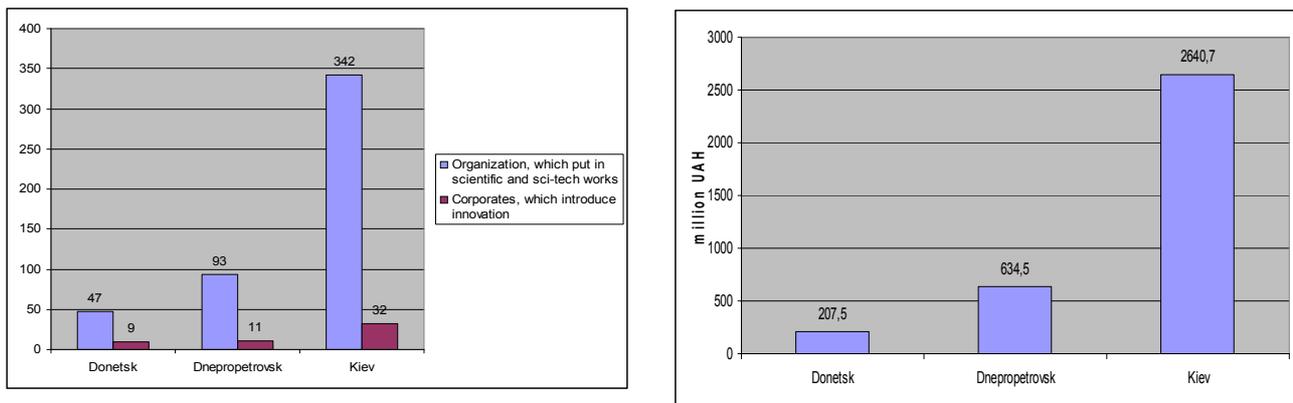


Fig. 5. The level of development of innovative potential in cities
 Source: Statistic department of Kiev, Donetsk and Dnepropetrovsk

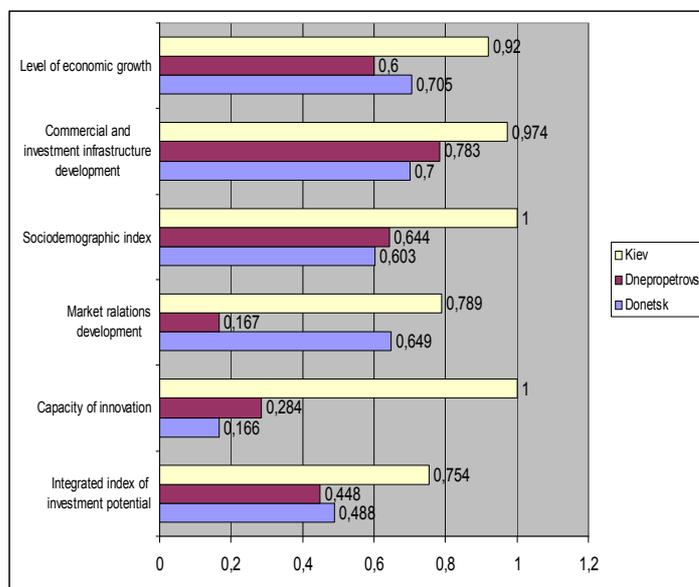


Fig. 6. The accounting result of integrated indexes of investment potential in Donetsk, Dnepropetrovsk and Kiev.
 Source: Statistic department of Kiev, Donetsk and Dnepropetrovsk

regulation of the entrepreneurship: the improvement of the procedure of passing and obtaining permissive documents; the development of the new redaction of Donetsk building Rules in accordance with the General plan of the city; the confirmation of the normative estimated money value of Donetsk nonagricultural lands;

— **the investment potential development** with the aim of successive transition to international standards of industrial goods production; economic stimulation of resource- and energy saving, implementation of environmentally friendly equipment and technology, extension of the technologies in which innovative resources are used; the formation of ecological works and services, market the supply of environment protection devices, the means of automation and equipment;

— **the development of social sphere** of the city in

particular :development and implementation of special programs of municipal housing construction, the formation of social housing funds; stimulation of entrepreneurship development, the creation of conditions for stable performance and increase of operating efficiency of small businesses and entrepreneurs; modernization of existing workplaces, the upgrading of their technology level, improvement of working conditions on workplaces; extra workplaces; increase high-technology and innovative workplaces share; increase in the number of working places for noncompetitive workforce (disabled, women with small children) on the labour market; increase of capital investments in nonproduction and humanitarian sphere at the expense of local budget; increase of investments in the fixed capital for environment protection and rational use of natural resources;

— *the development of transport system* which should include updating of the park all kinds of transport in the park, optimization of its structure and network; research of sources for covering expenses and for modernization of city passenger transport; reconstruction and extension of streets; improvement of transport network planning, organization of highway exits from the city; continuation of the construction of underground passages; adjusting control systems on the major cross-roads to the real intensity of transport and guarantee its realization using technical methods of regulation; substantiation of directions for the development of networks for trams and trolley busses and usage of methods for upgrading its work ;

— *the informational support* of the city Investment Development Program realization in particular: preparation and distribution of presentation materials about Donetsk and its Investment Development Program; creation of “Investment activity” section on the site of the city mayor and council; participation of municipality in exhibition activities (investment forums, international summits ,exhibitions etc); assistance in the development of the international exhibition activity in the city by informing and inviting businesses and organizations from near- and far-abroad countries to the exhibition campaigns of Donetsk; presentation of enterprises’ investment projects which are important for the city during international business meetings, exhibitions, forums; arrangement of the contest of investment projects “Invest in Donbass — invest in future”; arrangement of the International economic Forum “Open Donbass”; development of cooperation with the main investment funds, companies and banks (EBRD, the World Bank and others) in order to submit an application for obtaining credits, grants for the development of communal system and transport infrastructure of the city; assistance in setting up the representation offices, Honourable and General consulates of the foreign countries in Donetsk ; cooperation with near- and far-abroad countries concerning the establishment of partnership and twin-city relations; organization of cooperation with international organizations that encourage the development of local self-administration in Ukraine; provision of informational support of investment projects;

— *scientific and consulting activity*: the provision of consulting services to the owners of projects and programs (communal and commercial enterprises, representatives of small and medium-sized business ; the participation in seminars, conferences, forums and other activities concerning the attraction of foreign investments and development of international relations; the improvement of the foreign language skills of city council specialists with a help of language courses;

— *environmental improvement in cities by means of* mining and using coalmine methane as energy vector; planting sanitary-protection zone around industrial enterprises and creation of special areas for utilization of waste to avoid air-spraying gassy toxins for a considerable distance; utilization of mine waters; increasing, facilities for recycling and cascade round of water utilization in the industry; concentration of beneficiation rocks and extraction of components of technologic minefields; conversion of metallurgical production wastes, with graphite; using attle for concreting exhausted mines; coffin and mining sites restoration; forestry-based, sanitary and hygienic, recreational, building, hydroeconomic; liquidation of manufacturing, domestic and building dumps; creation of so-called “waste yard”; organization of separate domestic rubbish collecting and providing of differentiate payment for heaped and sorted waster collecting removal and charging extra payment for unsorted waster; setting up new factories based on current disposal plants.

Conclusion

To raise funds for local budget as means of financial security of investment project implementation in social sphere, they should create land market.

In addition, real property taxes, corporate profit taxes, environmental payments are substantial stakes in the reserves of increasing both private and fixed Donetsk budget source of financing

Provided private investments for implementing certain projects will be paid back, for these investments may be used method of mutual funds, which widespread in Europe, when central authorities, which are interested in project implementation, and local authorities solve a problem by means of mutual funds. The possible source of finance funds in ecology investment are grants from International ecology organizations, government investments.

It is useful also to develop new for city ways of accumulation extra-budgetary funds, that is accelerate development of borrowed financing investments hierarchy to city projects by internal municipal bonds, such as governmentally guaranteed loans and setting up borrowed banking public institute.

The primary element of system approach to creating prosperous investment climate in city is setting up institute for its regular monitoring, in which it should be to included: organizing the work of municipal investment and innovative commission; setting up the independent investment monitoring agency in Donetsk and attract officials from local government bodies, academes and business to the agency. The goal of establishing this Agency should be formation of social partnership between all mentioned above bodies in order

to settle these issues of social-economy city development, determine the priority investment's monitoring climate indexes in Donetsk, proceeding from mentioned in "Financing sources of investment development program in Donetsk by 2020 year" tasks, the solution of which should be directed to increase of its investment attractiveness and investment potential implementation; an analysis of integrative index dynamics of city investment attractiveness by proposed methods; periodical informing of public and local government bodies about results of investment climate in Donetsk, adjustment of long-term tasks in project "Financing sources of investment development program in Donetsk by 2020 year", based on its results.

Provided method of appraisal investment potential of city and mentioned determined ways of increasing their investment attractiveness are common for majority post-socialist countries of Black Sea region, taking into account relatively similar conditions of external and internal environment of their development.

Synergetics and such its direction, as catastrophe theory, chaos theory, bifurcations, attractors, entropy, extra capacity and so on combined with the now classic and long-known theories of cyclical development of the economy are able to more accurately predict the development processes of complex economic systems. Knowledge and ability to use the laws of Synergetics provide a more properly decision-making and efficient detection of global trends.

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Makogon Yu. V., Orekhova T. V. The Investment Attractiveness Increasing Of Black Sea Postsocialists Countries: Synergetic Approach

This article is devoted to the directions of investment attractiveness increasing of Black Sea postsocialists countries which are formed on the base of Donetsk

Investment Development Program with the usage of synergetic forming approaches.

The offered approach of an estimation of investment potential of cities and the specified directions of increase of their investment appeal have universal character for the majority of the postsocialist countries of Black Sea Coast, considering rather similar characteristics of conditions internal and external environments of their development.

Key words: Synergetic, investment climate, investment attractiveness, investment potential, Black Sea postsocialists countries, Donetsk investment development program

Макогон Ю. В., Орехова Т. В. Зростання інвестиційної привабливості постсоціалістичних причорноморських країн

Стаття присвячена напрямкам збільшення інвестиційної привабливості постсоціалістичних причорноморських країн, що сформовані на основі Програми інвестиційного розвитку міста Донецька з використанням синергетичних підходів.

Пропонований підхід оцінювання інвестиційного потенціалу міст та зазначених напрямків збільшення їхньої інвестиційної привабливості має універсальний характер для більшості постсоціалістичних країн Причорномор'я.

Ключові слова: синергетичний, інвестиційний клімат, інвестиційна привабливість, інвестиційний потенціал, постсоціалістичні країни Причорномор'я, Програма інвестиційного розвитку міста Донецька.

Макогон Ю. В., Орехова Т. В. Рост инвестиционной привлекательности постсоциалистических причерноморских стран

Статья посвящена направлениям увеличения инвестиционной привлекательности постсоциалистических Черноморских стран, которые сформированы на основе Программы инвестиционного развития города Донецка с использованием синергетических подходов.

Предлагаемый подход оценки инвестиционного потенциала городов и указанных направлений увеличения их инвестиционной привлекательности имеет универсальный характер для большинства постсоциалистических стран Причерноморья.

Ключевые слова: синергетический, инвестиционный климат, инвестиционная привлекательность, инвестиционный потенциал, постсоциалистические страны Причерноморья, Программа инвестиционного развития города Донецка.

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