УДК 339.9

FOREIGN DIRECT INVESTMENT ATTRACTIVENESS IN TERMS OF CREATING PRECONDITIONS FOR EFFECTIVE COOPERATION BETWEEN BORDER REGIONS

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Attractiveness of foreign direct investment (FDI) for effective cooperation between border regions is connected with checking hypothesis of mutual attraction of FDI in decision making process. It is t correlated with the mutual social, economic and environmental problems of the border regions. The paper proposes to determine FDI structure of funding sources by using the utility model.

Keywords: cross-border regions, foreign direct investment, utility model.

A research task consists of verification of hypothesis of mutual attractiveness of foreign direct investment (FDI) in the decision making process of border regions economic and ecological problems. The study aims to explain the reasons of mutual ecological — economic activity of border regions within the mutual investment activity via FDI attracting.

A border regions collaboration is an important part of Russia's regional cooperation with Commonwealth Independent States (CIS) countries. The experience of the Belgorod and Kharkov areas testifies on the initiative of leaders that the Council of heads of border regions of Russia and Ukraine is organized [1, 2,and 4]. Within this Council a constantly operating executive committee is created. The basic directions of its work are legislative and other acts harmonization, directed on adjusting of economic relations between the border regions, complex program, reflecting a structure development, change in the economy of border-line areas, investment policy with the use of facilities of local budgets, perfection of tax policy, mutual payments, establishing of common agrarian market.

In Concept of border regions cooperation in Russian Federation there are fourteen tasks are formulated which include: "joint decision of economic, ecological, socially — demographic, and other problems of border-line territories" [1].

A.M. Kiryukhin jointly with A.V. Voronin has developed the universal approach describing an evolution of international transborder territories in their transition to state of transborder functional regions, allowing to design the dynamics of the different stages of integration processes [3]. He allows investigating the transborder regions of different dimensions: from the large natural habitats of transborder projects of territorial cooperation (ecological pool and educational programs) to the European regions and their separate parts. Speaking about interdependence of economic development of border-line regions, L. B. Vardomskiy asserts that the high share of neighboring countries is typical foreign trade of border regions [16]. Thus most in relief it is traced at the Russian regions. The share of Ukraine made up $2.3 billion from general external commodity turnover of the Belgorod region, which was $4.3 billion in 2006, or more than 53% versus 5% share of this country in foreign trade of Russia. In the following year the value of external trade of the Kharkov region with Russia made up $ 0.9 billion or 32% from the general volume of foreign trade by commodities. It is estimated a little higher than the share of Russia in Ukrainian foreign trade — 26.9 %. The volumes of mutual trade of nearby regions are considered on the whole not significant. In according with data of the Kharkov region administration in 2006 export-import ties with the Belgorod region made up $ 129.3 billion, including an export of the Kharkov enterprises of $ 94.6 billion, and Belgorod of $ 34.7. Mutual trade of neighbor regions was 4.6% of external trade turnover of Kharkov region and 3% of the Belgorod region. The main articles of Belgorod region export are metallurgical raw material and metals — mainly consumed in Donetsk, Dnepropetrovsk, Zaporozhe regions. The basis of export of the Kharkov region is machines, equipment, spare parts and supplementary articles which have wide geography of consumption in Russia. Therefore interdependence of economic development of the Kharkov and Belgorod regions, measured by the volumes of mutual trade ties, is many times weaker than dependence of their market development, respectively, Russia and Ukraine on the whole [16, C. 56-57].

Cooperation between the regions of Ukraine and the subjects of Russian Federation develops on the basis of bilateral and multilateral treaties, agreements, programs and protocols on trade economic, scientific — technical and cultural collaboration. Four European regions «Slobozhanschina» (Belgorod and Kharkov regions), «Yaroslavna» (Kursk and Sumy regions), «Dnepr» (Bryansk and Chernigov regions), and also created «Donbass» (Donetsk, Lugansk and Rostov regions) in 2010 function and develop on Ukrainian-Russian border [17, C. 60].

The possibility of concentration efforts on the basic directions of coordination: trade, finance, tourism, ecology, agriculture and transport over the entire length of the common boundary are provided due to given form of cooperation. V.M. Moskovkin and I.I. Savchenko conducted the comparative analysis of economic dynamics of the Kharkov and Belgorod regions [5]. They proved possibility of reconstructing of transborder metallurgic-machine-building cluster of the European region "Slobozhanschina".

P.A. Chernomaz asserts that there are at least five strategically important tasks of Ukrainian-Russian transborder collaboration within the framework of the European region «Slobozhanschina», which require in future a joint decision [6].

The first task is activation of transborder scientific, production co-operation and trade by removing unnecessary border and customs barriers.

The second task is an improvement of a transport and logistic infrastructure of the European region for the effective use of its transit position. It supposes the decrease the workload of transborder highway Kharkiv – Belgorod by creating a circuitous transport routes, the construction of logistics terminals and etc.

The third task is directed at providing the concerted ecological policy. This work has already begun from projects application of recovery basin Seversky Donets and Lopan river. A fourth task is overcoming of social asymmetry of border line territories, reflected, first of all at the labour market. The one-sided flow of labour migration toward Russia stimulates divergences in labour payment and level of social protection in Russian regions at present time. As a result of arising up discrepancies in wages and the level of social protection in favor of the Russian regions cause now as a one-way flow of labor migration to Russia. It requires making of the concerted policy at the common labour market.

A fifth task is creation of the regional marketing informative system of the European region «Slobozhanschina» with the purpose of investment projects attraction by marketing instruments application for the increase of fame and improvement of territory image, regional policy orientation of the markets priorities and possibility of their granting to the European regions [6]. One of the most significant achievements of the European region was signing up the constituent documents of Ukrainian-Russian technopark «Slobozhanschina» 29 June 2011 in Moscow within the framework of Ukrainian Days. The founders of technopark from the Ukrainian side were V.N. Karazin Kharkov National University, Kharkov National University of Radio Electronics, Scientific park «FED».

From the Russian side the Belgorod State National Research University was a founder. In the nearest plans of joint technopark development there are proposed «Cradle of genii» business-incubator development, and Center of collective access to the hi-tech equipment «Introduction» creation. Activity of Ukrainian-Russian technopark «Slobozhanschina» will be directed on the transfer of technologies in the followings spheres: aviation, machine-tool construction, innovative mechanical electronics; new materials and nanotechnology, informative-communication technologies; biotechnologies, biomedicine and pharmacy; nuclear technologies are in energy and health care; energy-savings and new technologies of production of energy; instrument-making; new technologies are in an agroindustrial complex [8]. Analogical problems exist in many European countries and all over the [7]. One could mention the absence of scientific works in the field of the investment activity analysis of joint transborder projects with foreign capital participation.

Development of socio-economic-ecological model of cross-border cooperation – this is the purpose of this article – will make an objective assessment of the current state of the parameters of the socio-economic and environmental policies, for example, at the level of economies of Belgorod and Kharkov regions and landmarks such forward the implementation of joint integrated programs.

The publications of State Statistics Service in Ukraine, main Department of Statistics in the Kharkov region, Russian Federal Statistics Service, the territorial authority of the Federal State Statistics Service of the Belgorod region are considered as the basic sources of data [8, 9, 10, 11, 13, 14, and 15]. The data structure is based on dynamic databases of relative type. The period from 1991 to 2013 will be estimated. The databases include social, economic and ecological indications, characterizing Ukrainian and Russian states development, also and Kharkov and Belgorod regions as the whole. They include:

– volume and dynamics of gross national product;
– volume and dynamics of gross regional product;
– turnover of transport;
– wholesale turnover;
– industrial production index;
– turnover of retail business;
– volume of construction works,
– quantity of population;
– living standards;
– average monthly wage per workers;
– cost-of-living-indices (tariffs) on goods and services to the population;
– average wage per worker;
– investments in the fixed assets;
– foreign trade;
– trade balance;
– basic indices, characterizing effects of economic activity on balance of environment.

The records of databases contact with temporal periods.

In the basis of research the following modification of V.A. Kolemaev three-sector opened model economies is suggested and applied to two border-land regions [18]. The following three sectors are presented in a model: material (0), capital fund creation (1) and

consumption (2). For every sector three technological modes, set via the linear-homogeneous classic production functions of the following type are presented

$$X_i^{(n)} = F_i^{(n)}(K_i^{(n)}, L_i^{(n)}), \quad (1)$$

where $X_i^{(n)}$, $K_i^{(n)}$, $L_i^{(n)}$ — issue, fixed capital funds (FCF) and number of employees busy in i- sector; I = 0, 1, 2; n = 1 (Belgorod region), 2(Kharkov region).

Assumptions.

The total number of employees $L^{(n)}$ (in a production sphere) changes with a permanent growth rate $\nu^{(n)}$. Lag of capital investments is absent. Coefficients of depreciation of (FCF) $\mu_i^{(n)}$ and direct financial costs $a_i^{(n)}$ of sectors are constant. Time is measured continuously. Differential equalizations turn out from the following equation:

$$dL^{(n)}/dt = \nu^{(n)}L^{(n)},\ L^{(n)}(0) = L_0^{(n)},\ n = 1, 2; \quad (2)$$

$$dK_i^{(n)}/dt = -\mu_i^{(n)}K_i^{(n)} + I_i^{(n)} + I_{i,ПИИ}^{(n)},$$

$$K_i^{(n)}(0) = K_{i0}^{(n)},\ i = 0, 1, 2, \quad (3)$$

where $I_{i,FDI}^{(n)}$ — foreign direct investment (FDI) in *i*-sector *n*- region.

Distribution of employees could be presented in the following form:

$$L_0^{(n)} + L_1^{(n)} + L_2^{(n)} = L^{(n)},\ n = 1, 2. \quad (4)$$

Distribution of product formation sector:

$$X_1^{(n)} = I_0^{(n)} + I_1^{(n)} + I_2^{(n)} + I_{ЭКОЛ}^{(n)},\ n = 1, 2, \quad (5)$$

Where $Iecol^{(n)}$ — ecological investments in *n*- region.

Distribution material sector production:

$$X_0^{(n)} = a_0^{(n)}X_0^{(n)} + a_1^{(n)}X_1^{(n)} + a_2^{(n)}X_2^{(n)},\ n = 1, 2. \quad (6)$$

Foreign trade balance:

$$q_0^{(n)}Y_0^{(n)} = q_1^{(n)}Y_1^{(n)} + q_2^{(n)}Y_2^{(n)},\ n = 1, 2, \quad (7)$$

where $Y_0^{(n)}$ — exports of materials; $Y_1^{(n)}$ —imports of investment goods; $Y_2(n)$ — imports of consumption goods; $q_0^{(n))}$, $q_1^{(n))}$, $q_2^{(n)}$ — world prices on material, capital fund creation and consumption sectors.

The model criteria are presented in utility function:

$$U(I_{0,FDI}^{(1)}, I_{1,FDI}^{(1)}, I_{2,FDI}^{(1)}, I_{0,FDI}^{(2)}, I_{1,FDI}^{(2)}, I_{2,FDI}^{(2)}), \quad (8)$$

characterizing the attractiveness of FDI in the conditions of co-operation of border-line regions.

The rationale for the use of the proposed three-sector open economy model for the two border regions serves the need for the implementation of programs for mutual ecological and economic activity of the border regions in a joint investment with foreign direct investment. In order to achieve the result the application of authors' economical-theoretical [20—26] and economical-mathematical works are assumed [27—28]

Open three-sector model of the economy in relation to the two border regions is an example of the current macroeconomic adequate description of international economic relations, taking into account environmental factors. The prospect of its application can be a development forecast scenarios of joint economic and environmental development of the border regions on the basis of simulation, variant model calculations.

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ПРИВАБЛИВІСТЬ ПРЯМИХ ІНОЗЕМНИХ ІНВЕСТИЦІЙ У КОНТЕКСТІ СТВОРЕННЯ УМОВ ДЛЯ ЕФЕКТИВНОГО СПІВРОБІТНИЦТВА ПРИКОРДОННИХ РЕГІОНІВ

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Привабливість прямих іноземних інвестицій (ПІІ) для ефективної співпраці прикордонних регіонів прямо пов'язана з гіпотезою взаємної привабливості ПІІ при прийнятті рішень, які корелюють із загальними соціальними, економічними та екологічними проблемами прикордонних регіонів. У статті запропоновано структуру ПІІ для джерел фінансування, яку визначають за допомогою моделі корисності.

Ключові слова: модель корисності, прикордонні регіони, прямі іноземні інвестиції.

ПРИВЛЕКАТЕЛЬНОСТЬ ПРЯМЫХ ИНОСТРАННЫХ ИНВЕСТИЦИЙ В КОНТЕКСТЕ СОЗДАНИЯ УСЛОВИЙ ДЛЯ ЭФФЕКТИВНОГО СОТРУДНИЧЕСТВА ПРИГРАНИЧНЫХ РЕГИОНОВ

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Привлекательность прямых иностранных инвестиций (ПИИ) для эффективного сотрудничества приграничных регионов прямо связана с гипотезой взаимной привлекательности ПИИ при принятии решений, коррелирующих с общими социальными, экономическими и экологическими проблемами приграничных регионов. В статье предложено структуру ПИИ для источников финансирования определять с помощью модели полезности.

Ключевые слова: модель полезности, приграничные регионы, прямые иностранные инвестиции.

Статья поступила в редколлегию 12.10.2015 г.