

Pluralistic Approach to the Regional Integration Analysis
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Abstract

The global industrialisation upswing, international division of labour, capital expansion, and foreign trade stimulate the developing countries' enlargement into the system of global economic relations. The paper deals with the study the economic growth factors' role in regions. The coordination, cooperation and networking are considered the vivid questions of regional integration. One could mention the existence of different integration concepts for country's economic development. Some scientists point to the negative consequences of these processes, including uneven and unfair distribution of common goods among countries and regions. The use of economic complexity, bounded rationality and socio-economic dynamics provides a trans-disciplinary approach to deal with a broad range of regional integration problems. The pluralistic approach to the regional integration will be directed to know the economic convergence regions and divergence, unevenness in the development of transition countries. It provides the causes, the estimation of regional imbalances. Moreover, the paper is aimed to formulate the basic measures of future structural adjustment following the consequences of the European Union enlargement.

The pace of Ukrainian integration into the global economy is affected by the economic, political, social changes in the world, by the regional divergences and convergences in the country. The progress in reforming process within the regions depends on the success of economic reforms implementation, and institutional infrastructure formation. The analysis of two group's factors: general sources of economic growth and transition economy specific sources of growth are directed to estimate the effects of regional integration in the Ukraine. The first group of indices includes fixed capital accumulation, human capital accumulation, economically active population growth, R&D spending and spillovers, macroeconomic stability, monetary indices, foreign trade, and foreign direct investment. Transition specific factors combine reform indicators, including industrial output, labour productivity, capital intensity, technological change, regional differences. The regional imbalances' assessment is determined by gross regional product per capita, regional employment, and spending on education. The pluralistic approach to regional integration is directed to analyse regional imbalances, and define factors smoothing out its negative effects. In Eastern European countries these effects are significant, that means the European enlargement should lead to fast process capital, labour, technology accumulation and knowledge diffusion from regional to national, global levels. The regional imbalances improvement stimulates regional development, and provides the economic growth.

1.Introduction

The modern tendencies of global economic development demonstrate the world trade increase, inter-regional, inter-firm trade widening and world capital transfers acceleration. Closer integration of neighbouring regions stimulates creation of a larger regional market for trade and development. The uneven countries' development, environment degradation in some regions in the world are negatively effected this process. The predominance of one type of cultural values leads to the destruction of national identity within the country. The developed countries maximize the consequences of regional integration effect by rising profit gains.

The globalization is accompanied with the regional development effects in the various kinds of the economic activities. It includes the isolation of separate groups of countries and the regional unions foundation. This process stimulates the economic integration, on the one hand, and impedes the globalization process by increasing regional groups isolation, contradictions and competitiveness among separate countries, on the other hand. The integration into the global economic cooperation system is based on the use of advantages in international division of labour and the foreign economic relations development.

The most discussed question of regional integration in the European Union deals with the “deepening” and “widening” of this process, and existence of imbalances in the economic development. The transparent regional policy in the areas of the political participation, anti-discrimination, labour market access and etc. are proclaimed for the European Union countries. Economic opening-up plays a key role in the regional integration into the world economy. Trade liberalization effects the faster country's growth. On average, trade development can be a powerful force for poverty reduction, especially over longer horizons, where the cumulative effects of growth on incomes of the poor are larger.

Fujita, Kumagai, Nishikimi (2008) examine the various aspects of integration relate to the structure of intra-regional trade, industrial location patterns – especially of multinational enterprises, the formation of industrial agglomeration and the development of political and institutional frameworks for integration. Economides, Salop (1992) consider that the competition and integration are as complementary goods, which could be combined for the creation composite goods and systems. The authors' views confirm that the regional integration is the complex process, and its essence could be understood on the basis of the integrated analysis including the influence of the basic factors.

One could differentiate between system integration and social integration, whereas the former denotes the cohesion of a system. Esser (2000) considers that social integration indicates the inclusion of individual actors in a social system. Social integration is determined by the acceptance of mi-

grants in institutions, networks and positions in a society. The process of integration should be understood as an interactive dialectic social process between immigrants and the receiving society that spans generations. A pool of shared values and standards (e.g. the rule of law) is stressed as the basis for multicultural coexistence.¹

The East European countries' integration into the global economy is influenced by consequences of uneven resource distribution and ineffective structure of production among regions in the period of command economy. There are existed the economic disparities, social, and cultural differences at the regional level. The regional integration process includes the local integration and the integration among countries into the regional unions. The coordination policy is directed to maximize the integration effects of the unification of regions and creation of the different kinds of unions. The scientists discuss the perspectives of the regional convergence on a single development path or permanent divergence, openness to international trade and internal integration, and consequences of regional integration. Von Schütz, Stierle (2008) point out that the regional economic policy in the EU concentrates on three areas: the dissimilarities and resulting convergence of disparate regions within the EU; the localization of economic activities and how regions can understand and manage them, and the experience that can be drawn from the European regional policy.

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2. The Basic Theoretical Approaches to Regional Integration

The variety approaches of the economic analysis are directed to explain the economic process and to apply in models for stimulating regional development. The essence of the regional integration is determined as the process in which countries organize regional unions, cooperate with each other and coordinate any forms of activities in order to stimulate economic prosperity, strengthen trade relation, develop infrastructure, and stimulate mutually profitable relations among each other. The economic modeling is the process of the substitution of one object by another in order to provide information about the main features of the original object. Forrester (1961) distinguishes the following models: abstract and physical; dynamic and statistic; nonlinear and linear; stable and unstable and etc.² He considers that an industrial organization is a complex of interlocking network of infor-

¹ See Damelang, Steinhardt (2008), p. 1—2.

mation channels controlling physical processes such as hiring of employees, building of factories, and production of goods.³

The analysis of the latest publications demonstrates that the basic regional integration approaches could be generalise by the following criterions:

- comparison of the per capita income;
- evaluation of the wage and the capital rate of return;
- assessment of the exogenous and the endogenous factors cross-border regional integration;
- study the number unemployed from registration in labour offices and etc.

In accordance with the neoclassical economies there are regional disparities among regions where some regions are better able to accelerate the process of convergence among regions. Amstrong, Taylor (2004) argue that per capita income are expected to decline in the long run, as capital and labour tend to move towards lower and higher wage regions, respectively, until specialization of the two factors' productivity in all regions is reached. Sadler, Swain (1994) analyse uneven regional development in Eastern Europe and emphasize the existence of strong regional imbalances, a strong specialization by each region. They point out that not all regions with intensive transformation process can incorporate themselves into the line of highly competitive European regional economies. Quite a number of them are transformed in the direction of regional branch plant economies: i.e. into areas with a specialization in low level production functions and low wage export processing industries.⁴ Amedola, Caroleo (2004) evaluate European regions, whether structural features favour the formation of clusters of regions and where this display a tendency to converge either to a single structure or instead to a multiplicity of socio-economic structure. The European economy is a diversified reality influenced by structural phenomena concerning labour market characteristics, sectoral composition, and localization factors which make it unlikely that integration process will give to the hope for levelling of economic development in the near future.⁵ The composition and structure of the labour market are evaluated as the main reason for regional disparities. The importance of different factors that influence highly qualified migrants' decision to migrate to specific regions and especially the role of labour migration policy are analysed by Burkert, Niebuhr, Wapler (2008). Mobility increases between the neighbouring regions, especially in the border areas. It inflows the individual, regional and socio structural patterns of life, and less the effects of different systems.⁶ The analysis of these scientific works demonstrates the existence of diverse approaches and various points of views on the processes of regional integration.

² See Forrester(1961), p. 39.

³ Ibid, p.54.

⁴ See Sadler, Swain (1994), p.389.

⁵ See Amendola, Caroleo, Coppola (2004), p. 34.

⁶ See Hinrichs (1997), p. 377.

The Municipal Association for Administration Management in cooperation with the commissioners for integration of German cities created a set of indicators possible to monitor local integration. This set of indicators includes the following indices: legal integration, education, work and economy, social security, housing, language, health, social integration, social and political participation, and security.⁷ The success of the regional integration is depended on the implementation policy measures directed on urban education and qualifications increase in the labour market.

The diverse statistical methods are used for the regional integration modelling at the numerous scientific investigations. The theoretical approaches are estimated, and applied in the numerous regional models. They include empirical model, cluster analysis model, forecasting model and etc. Golata (2002) research presents an attempt to estimate unemployment in a local labour market. A linear regression model has been chosen and, as an auxiliary variable, the number of unemployed from registration in labour offices has been used.⁸ The integration process is included capital deepening (extensive and intensive investment) and labour thinning (net out-migration). Burda (2007) examines the model of wage and capital rate-of-return differentials along the equilibrium path. Under competitive conditions, observed factor price differentials contain information on those adjustment costs. Krätke (1998) discusses the cross-border regional integration with regard to exogenous and endogenous factors. Exogenous factors determine the investment strategies of western firms in former East Germany and Poland. Endogenous influences are depended on communication barriers and a “low trust environment.” The foreign capital inflow into the region has two effects. It leads to the concentration of foreign direct investment in the region. Three types of cross-border inter-firm linkages are evaluated: far-reaching (international); supra-regional chains of production with export processing activities based on cost-cutting strategies; regionally integrated policy. The regionally based inter-firm strategy intensifies the firm’s competitiveness.⁹ Knarvik, Forslid, Haaland, Maestad (2002) apply a newly developed CGE-model, which divides the world into ten regions, five of which are European, and 14 industries, of which 12 perfectly competitive industries. The authors observe the short-term adjustment problems and less of the long-term possibilities. Possible long-run outcomes analysis as productivity growth and investment show that adding Former Soviet Union transition to Eastern European transition has negligible effect on all other regions than the Former Soviet Union itself, which experiences a strong real income effect. The region’s insignificant trade in manufacturing goods relates to the main reason of it. The modelling results

⁷ See Damelang, Steinhardt (2008), p. 8.

⁸ See Golata (2002), p. 281.

⁹ See Krätke (1998), p. 635-636.

depicts that the transformation and the European integration are of the great importance in Eastern Europe, while the overall effects for other European regions are small.¹⁰

Barjak (2001) uses cluster analysis to construct a typology of regions for East Germany and Poland on the basis of indicators for economic capability and their determinants. The results show that, in both countries, the most capable regions are those with or in the vicinity of the largest agglomerations. Besides high income, low unemployment and population gains from migration, these regions have comparatively large stocks of qualified labour and participate in technical progress. The author suggests two regional types: 1) rural regions peripheral to the agglomerations and (2) old industrialised regions.¹¹

The application of the models demonstrates the existence of broad scope of approaches dealing with the specific problem solution at the regional level. The statistical modelling includes the collection and selection of database, estimation process, and results' assessment. The choice and construction of the model suggest the assessment of the economic variables, estimation of the significant coefficients, and determination of the basic factors. The utilization of the existing models' results suggests its usage for policy makers recommendations.

3. The Regional Disparities and the Development Problems in the Ukraine

The regional development effects the country's economic growth, improves living standards, and stimulates the process of the regional integration. In the period of command economy the system of the centralized industrial organization has been formed in East European countries. It has been based on a strong specialization by each region producing the specific kinds of goods. The producers did not take into consideration the consumers' needs and tastes because of the state planning system and direct orders of the state. The allocation of branches and enterprises has been restricted by the existing structural constraints determined by absolute monopoly of ministries in decision making process. The hierarchy of commands from the ministries to the levels of regions and enterprises determined the regional structure of the economy in former Soviet Union. One could suggest the prevalence of the production of some particular product. The production was located in several enterprises which had monopoly position within the branch.

The challenges of new industrial policy evoke the creation of the new structure of enterprises at the regional level in the period of transition to market economy in East Europe. It suggests an efficient allocation of resources and a production cost minimization in enterprises. The development of mar-

¹⁰ See Knarvik, Forslid, Haaland, Maestad (2002), p. 93.

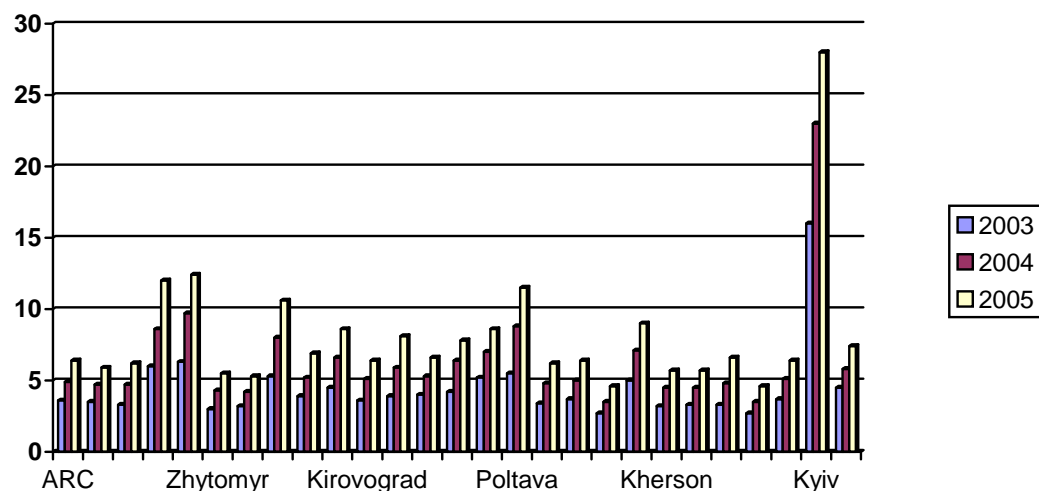
¹¹ See Barjak (2001), p.289.

ket economy brought new patterns of relations between regions. The privatization, price liberalization, and institutional reforms affected the pace of reforming in the Ukraine.

Romaniuk (2002) considers the basic three approaches of regional development: the first approach focused on political problems: how to organize administration at local and regional levels; the second was grounded in the creation of large regions and on the formulation of economic, social, humanitarian, ethic, and ecological ways of developing territory; the third approach is connected with the conceptual system used in European countries.¹² This research shows the importance of the regional problems, the discussed character of its forms, ways, and consequences for regional development, competition, the relationship between the state and the regions and etc.

The regional development in the Ukraine could be estimated from the analysis of the following features: geographical location, territory, population, natural resources, capital and labour endowment, and industrial development. This characteristics of regional development is determined by the existence of 27 Ukrainian regions, including 24 oblasts, the Autonomous Republic of Crimea and the two cities Kyiv and Sevastopol.

Fig.1: Gross Regional Product per capita in Ukraine (thousand uah)



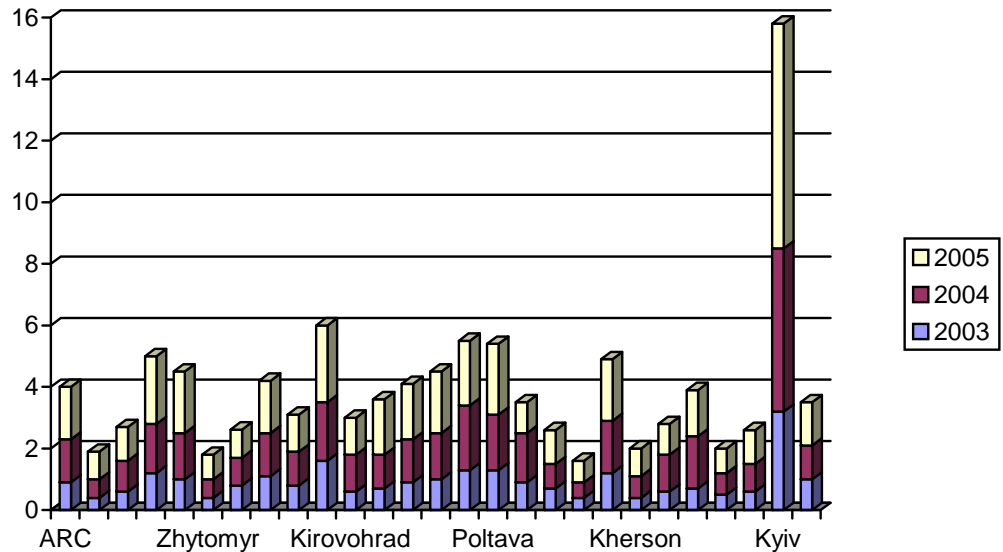
Source: Data of the State Statistic Committee in Ukraine.

The data analysis of gross regional product per capita confirms the uneven regional development in the Ukraine from 2001 to 2005 (Figure 1). The share of seven regions, including Kyiv, Donezk, Dnipropetrovsk, Kharkiv, Odessa, Zaporizhya, Luhansk, makes up 59,3 per cent in the total gross regional product per capita in Ukraine in 2005. An analysis of gross regional product data per capita examines the tendency for its increase with different rates of growth in regions. Its value makes up 28780 uah in Kiev, and it equals 4654 uah in Chernivtsi, that is the sixth times lower than in capital

¹² See Romaniuk (2002), p.181.

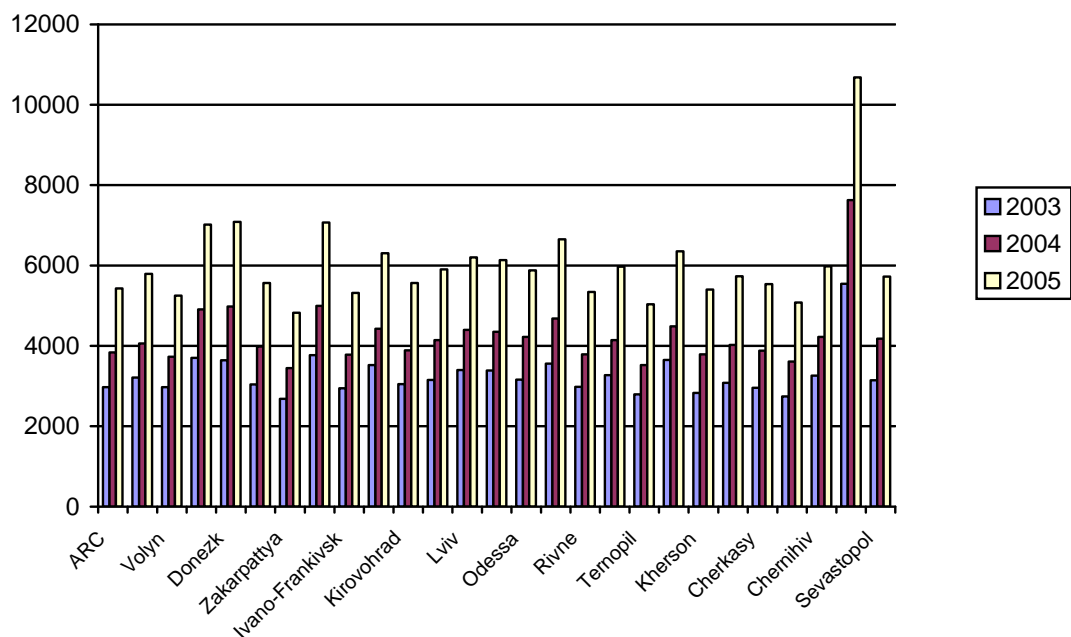
in 2005. Regional disparities demonstrate the existence of different economic factor endowment in the Ukrainian regions. The factors of production are unequally and unevenly distributed among regions. It explains the paradox, why 18 regions have the lowest than the average value of gross regional product per capita. One could distinguish the group of the industrially developed and backward agrarian regions in the Ukraine.

Fig. 2: Fixed Capital Investment per capita in Ukraine (thousand uah)



Source: Data of the State Statistic Committee in Ukraine.

Fig. 3 : Real Income per capita in Ukraine (uah)

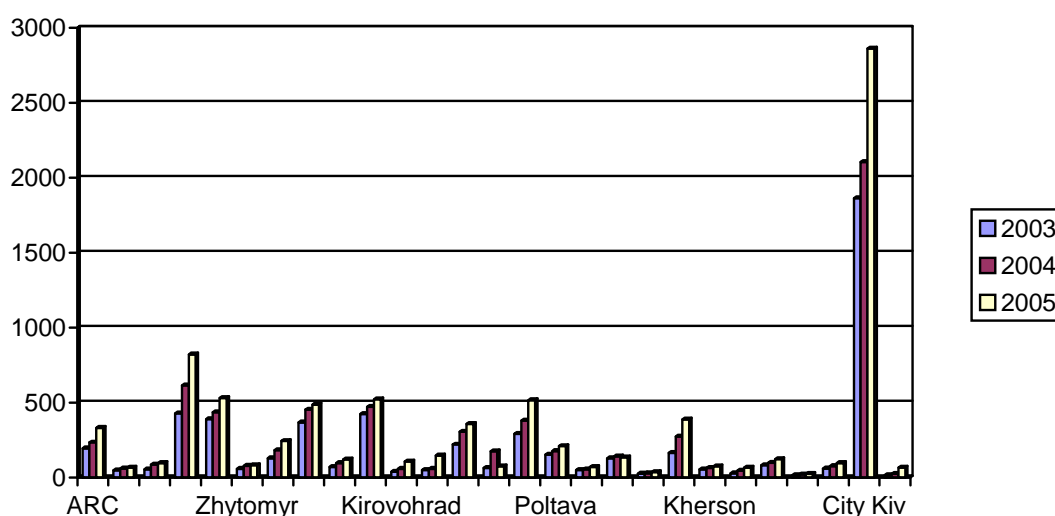


Source: Data of the State Statistical Committee in Ukraine.

The comparison of fixed capital investment per capita depicts the asymmetry distribution among regions (Figure 2). 16 regions have the lowest fixed capital investment per capita in 2005. The existence of enormous regional disparities in the fixed capital investment distribution could be seen from the comparison of the data for Kyiv, where it equals 7379 uah in 2005. In Ternopil fixed capital investment per capita makes up 799 uah for the same year, that is 9 times less than in Kiev.

The study of the State Statistical Committee data for Ukraine demonstrates the asymmetry in incomes' distribution among regions (Figure 3). 54 per cent of all real incomes are concentrated in 8 regions, where the major part of its belongs to Kiev and makes up 7632 uah per capita in 2005.

Fig. 4 : Foreign Direct Investment per capita in Ukraine (uah)



Source: Data of the State Statistic Committee in Ukraine.

The analysis of regional investment attractiveness confirms the concentration of foreign direct investment (FDI) per capita in the capital and in six major industrial cities (Figure 4). The bulk of all foreign capital is located in Kiev – 2861 uah in 2005. FDI per capita inflow makes up 821 uah in Dnipropetrovsk, 529 uah in Donezk, 486 uah in Zaporizhia, 517 uah in Odessa, 386 uah, and 358 uah in Lviv regions in 2005. OECD research (2007) evaluates that the major disappointments of Ukraine's performance its relative failure to attract FDI. The stock of FDI per capita reached only 372 USD in 2005, just over 16 per cent of the corresponding figure for neighbouring Poland.¹³

¹³ OECD (2007), p.6.

The assessment of the main economic indicators of gross regional product per capita, fixed capital investment per capita, real income per capita, foreign direct investment per capita demonstrates the existence of essential disparities. They include the differences in production endowments, asymmetry in fixed capital investment, disproportional income and foreign direct investment distribution in regions. The unequal regional development results in existence of the group of the industrial regions with high urbanization and backward agrarian regions.

4. Statistical Modelling of Regional Integration in Ukraine

The modelling has been based on annual data of gross regional product per capita in Ukraine from 2001 to 2005 for 27 Ukrainian regions. In detail the following variables are available and are considered where index i runs over all 27 regions, and index t over all time periods considered (years).¹⁴ The theoretical framework of the empirical analysis is based on the hypothetical equation:

$$GRP_{it} = F(FCI_{it}, IPI_{it}, CPI_{it}, FDI_{it}, AW_{it}, NT_{it}, UR_{it}, RTR_{it}, WTR_{it}, EMP_{it}, RIN_{it}), \quad (1)$$

where GRP_{it} – Gross Regional Product per Capita (UAH);

IPI_{it} – Industrial Production Index, where 2000 = 100% (%);

FCI_{it} – Fixed Capital Investment per Capita (UAH);

CPI_{it} – Consumer Price Index (%);

FDI_{it} – Foreign Direct Investment per Capita (UAH);

AW_{it} – Average Nominal Wage per Worker (UAH);

NT_{it} – Number of Telephones per 100 Families;

UR_{it} – Unemployment Rate (%);

RTR_{it} – Retail Trade Turnover per Capita (UAH);

WTR_{it} – Wholesale Trade Turnover (Mln. UAH);

EMP_{it} – Employment of Working People from 17 to 70 years (thousand people);

RIN_{it} – Real Income per one Citizen (UAH).

In accordance of the State Statistic Committee of Ukraine GRP is determined as the sum of the value added of all kinds of activities, including net taxes. The industrial production index calculates as the value of produced products (works, services) in the corresponding prices. Consumer price index (inflation index) is considered the index of the price change and tariffs on goods and services buying for consumer's consumption. Wholesale trade turnover is a value provided by enterprises for goods' sales to another enterprises, organizations and their use in Ukraine. Retail trade turnover in-

¹⁴ Data from Regional Statistical Surveys Ukraine in 2006 (2007). State Statistical Committee in the Ukraine.

cludes retail turnover of enterprises, which are engaged in retail trade activities, and sales within the markets and by entrepreneurs.

The modelling GRP from 12 exogenous variables demonstrates the existence of various results and values of significant coefficients from 2001 to 2005. The significance of the coefficient is tested at the 5 per cent level. The standard error is given in the parenthesis. There is significant relationship between GRP in 2001 and wholesale trade, employment and real income per one citizen (Equation 2).

$$\text{GRP}_{27, 2001} = -1574 + 0,08 \text{WTR}_{27, 2001} - 1,8 \text{EMP}_{27, 2001} + 2,4 \text{RIN}_{27, 2001} \quad (2)$$

(1214) (0,01) (0,49) (0,56)

$$R^2 = 0,87; \text{DW} = 1,4$$

The similar modelling GRP in 2002 demonstrates the existence of significant relationship with wholesale trade turnover, employment of working people, real income per one citizen (Equation 3).

$$\text{GRP}_{27, 2002} = -1084 + 0,09 \text{WTR}_{27, 2002} - 1,6 \text{EMP}_{27, 2002} + 1,8 \text{RIN}_{27, 2002} \quad (3)$$

(1145) (0,01) (0,39) (0,45)

$$R^2 = 0,92; \text{DW} = 1,3$$

The estimation for 2003 shows the existence of significant relationship of GRP from foreign direct investment flow per capita, number of telephones per 100 families in regions and real income per citizen (Equation 4).

$$\text{GRP}_{27, 2003} = -2671 + 0,8 \text{FDI}_{27, 2003} - 20 \text{NT}_{27, 2003} + 1,6 \text{RIN}_{27, 2003} \quad (4)$$

(1471) (0,14) (10) (0,5)

$$R^2 = 0,96; \text{DW} = 2,8$$

The GRP has significant coefficients for average nominal wage, employment and wholesale trade turnover in 2004 (Equation 5).

$$\text{GRP}_{27, 2004} = -1392,1 + 16,1 \text{AW}_{27, 2004} - 3,4 \text{EMP}_{27, 2004} + 0,08 \text{WTR}_{27, 2004} \quad (5)$$

(1878,7) (0,01) (0,8) (0,01)

$$R^2 = 0,91; \text{DW} = 1,9$$

The assessment of GRP from variables for 2004 demonstrates the existence of the significant relationship with consumer price index, employment, wholesale trade turnover and real income per one citizen (Equation 6).

$$\text{GRP}_{27, 2004} = -39261 + 308 \text{CPI}_{27, 2005} - 1,2 \text{EMP}_{27, 2005} + 0,07 \text{WTR}_{27, 2005} + 2,1 \text{RIN}_{27, 2005}$$

(11648) (111) (0,4) (0,01) (03)

(6)

$$R^2 = 0,97; \text{DW} = 1,75$$

The modelling GRP from fixed capital investment, wholesale trade turnover, employment, and real income per one citizen demonstrates the significant relationships from 2001 to 2005 in the Ukraine (Table 1). The coefficient for employment is not significant for 2005. The estimation results shows the existence of significant relationship between GRP and investment in fixed capital in 2001 and 2002 in the table 1. The increase value of the significant coefficients for the fixed capital investment decreased in 2003 to 2005. The global economic conjuncture changes has effected on the country`s economic performance. The increase value of the significant coefficients for real income per one citizen from 2001 to 2005 is explained by the inflation increase in the country. The consumer price index investigation demonstrates the considerable changes for the whole period of estimation. Its value increased from 106 per cent in 2001 to 110 per cent in 2005. The relationship between gross regional product and wholesale trade turnover shows the existence of the significant relationship from 2001 to 2005.

Table 1: Results of Gross Regional Product Estimations from Exogenous Variables (OLS)

Regressor	2001	2002	2003	2004	2005
INT	-129,9 (687,3)	336,2 (682,5)	-1979,6 (1331,6)	-5512,9 (1374,9)	-4788,2 (2136,2)
IFC	2,7 (0,3)	2,4 (0,3)	1,5 (0,4)	1,2 (0,3)	1,17 (0,39)
WTR	0,05 (0,01)	0,07 (0,01)	0,06 (0,01)	0,03 (0,01)	0,042 (0,01)
EMP	-1,2 (0,3)	-1,1 (0,2)	-1,5 (0,4)	-1,3 (0,4)	-0,56 (0,51)
RIN	0,9 (0,3)	0,7 (0,3)	1,6 (0,4)	2,4 (0,3)	1,76 (0,43)
R-Squared	0,96	0,97	0,97	0,98	0,97
DW-statistic	1,75	2,07	2,19	2,19	1,7

The GRP increase depends on the development of the wholesale trade turnover among enterprises in the regions. The negative coefficients for employment is caused by low labour productivity in

industry, demographic trends, high share of pension expenditure to GDP ratio in excess of 14 % (OECD, 2007), and significant share of working people in retail trade. In total the volume of the value added production per capita is increased to 113 per cent in 2001, to 105 per cent in 2002. The rise makes up 110 per cent in 2003. It equals to 113 per cent in 2004 and reaches to 100 per cent in 2005. Despite the production value increase one could take into account the impact of inflationary factor for the price formation at the national economy level in Ukraine.

The use of SURE (Seemingly Unrelated Regression Estimation) model is aimed to analyse a system of multiple equations with cross-equation parameter restrictions and correlated error term. The SURE model gives more accurate estimation and is used in case of not correlated variables estimation. The dependence of the gross regional product per capita estimates from fixed capital investment per capita, wholesale trade turnover, employment of working people, real income per one citizen. The results of estimation from 2001 to 2005 could be seen in the table 2.

Table 2: Results of Gross Regional Product Estimations from Exogenous Variables (SURE)

Regressor	2001	2002	2003	2004	2005
INT	2007,9 (414,3)	2667,3 (438,2)	3676,1 (659,1)	1948,6 (1004,5)	2036,2 (1569,7)
IFC	0,3 (0,12)	0,4 (0,1)	0,3 (0,1)	0,16 (0,1)	0,05 (0,19)
WTR	0,01 (0,004)	0,02 (0,01)	0,02 (0,001)	0,01 (0,01)	0,02 (0,01)
EMP	-0,5 (0,2)	-0,3 (0,2)	-0,5 (0,3)	-0,16 (0,5)	-0,08 (0,6)
RIN	0,5 (0,1)	0,3 (0,09)	0,18 (0,14)	0,95 (0,2)	0,92 (0,27)
R-Squared	0,46	0,48	0,43	0,53	0,61
DW-statistic	2,06	2,02	2,0	2,06	2,0

The significant of the coefficient is tested at the 5 per cent level. The standard error is given in the parenthesis. The estimation results demonstrate the existence of the significant relationship between GRP per capita and fixed capital investment per capita, wholesale trade turnover, real income per one citizen for 2001 and 2002. The analogous relationship shows the insignificant relationship of GRP per capita with employment of working people for all estimated periods.

The insignificant relationship of GRP per capita with real income per one citizen for 2003, and fixed capital investment for 2004, 2005 are caused by the existing of the regulatory impediments for growing business. A systemic assessment of product-market regulation in Ukraine evaluates three components: state control; barriers to entrepreneurship and barriers to trade and investment suggests that regulatory reform could contribute to greater efficiency of both resource allocation and production, accelerating convergence of Ukrainian regions (OECD, 2007).

The analysis of the estimation results demonstrates the better assessment results of coefficient values in the table 2 in comparison with the data results in the table1. The decrease of the values of standard errors in the table 2 in comparison with the analogous results for the same variables in the table 1 points out the improved estimation results. The absence of significant coefficients in some equations confirms a need for ongoing statistical analysis of data for longer estimation period of research.

5. Policy conclusions

The regional development is the unique process and could be determined by the complex character and comprehension of the diversity influences of the economic, political, social factors. Regional integration depends on its extent and degree of cooperation, integration and interchange among regions. It could be determined at the local level: regions in the country and international level: the form of regional unions.

The application of the various models demonstrates the existence of broad scope of approaches dealing with the specific problem solution at the regional level. The generalisation of existing approaches for regional integration could be classified by the following criteria: comparison of the per capita income; evaluation of the wage and the capital rate of return; assessment of the exogenous and the endogenous factors cross-border regional integration; study the number unemployed from registration in labour offices.

The assessment of the data of the main economic indicators shows the existence of the essential regional disparities: the differences in production endowments, the asymmetry in fixed capital investment, the disproportional income and foreign direct investment distribution in 2001 – 2005 in Ukrainian regions.

Econometric modelling examines the existence of the division for the industrial regions with high urbanization and backward agrarian regions in the Ukraine. The basic problems influencing the integration process of the Ukrainian regions are the following: the industrial development disparities among regions; the insufficient infrastructure (telecommunications, roads, hotels, services and etc.), the low labour productivity in industrial sector, and insufficient regional trade. There is a need for adoption the priority measures for regional policy improvement, including the financial support of the depressed regions, the enhancing competitive sectors development and better access to new technologies, the adoption programs for stimulating preparation skilled workers, and creation of the institutional network for regional development.

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