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**REGIONAL ECONOMIC DEVELOPMENT:
DYNAMICS AND INTENSITY OF CHANGES**

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The article provides an estimation of economic processes, which took place in Ukrainian regions in 2006-2013, carried out within different types of economic activity and by means of the gross value added indicator (GVA). In order to conduct such research, we calculated both the rate of change in the share of regional economies' structural mass and the intensity of structural changes in the economy of Ukrainian regions over the mentioned period. Having systematized and analyzed the existing methodological approaches, we grouped the regions according to the development intensity of different types of economic activity and Ukraine's economy in general. Thus, we were able to specify the leading, stable, troubled and depressed regions of Ukraine. Finally, we highlighted the major structural imbalances in economies of these regions and made several suggestions concerning ways of their reduction and elimination in every specific region type.

Keywords: *economic development, economic processes, structural changes, intensity of structural changes, mass of structural changes, economic activity, region.*

Introduction. The economy of Ukrainian regions has an inefficient structure with high resource-, material- and energy-intensity of production and is characterized by extensive development of primary industries, lack of innovation, lagging development of infrastructure, financial sector isolation from the real economy and inefficient functioning of sectors that ensure innovative and

technological development.

A distinguishing feature of Ukraine's economy of regions is that their quantitative parameters experience certain changes under the influence of market forces and mechanisms of government regulation. Its current state is, on the one hand, a result of the processes that took place in a region's economy in the previous periods and, on the

other hand, a prerequisite for further changes. The relationship between different types of structural changes and their intensity depend on the socioeconomic development of regions and effect it as well. It should also be mentioned that, depending on their direction and intensity, structural changes can have a positive or negative impact on the country's economic growth. Thus, during periods of economic recession or expansion the intensity of structural changes increases.

Analysis of recent researches and publications. A wide range of both domestic and foreign studies is devoted to problems of the current state and possible future changes of economic systems. Among foreign publications, special attention should be paid to the works of D.Bell, E.Domar, K.Arrow, F.Quesnay, J.B.Clark, C.Clark, W.Leontief, W.Lewis, A.Marshall, D.North, V.Pareto, R.Reich, D.Ricardo, A.Smith, R.Solow, R.Stone, R.Harrod, J.Schumpeter. Among Ukrainian researches, these issues are widely presented in the works of L.Antoniuk, O.Bilorus, A.Halchynskyi, V.Heiets, Y.Bazyliuk, B.Burkynskyi, D.Lukianenko, V.Novytskyi, B. Onyshchenko, A.Poruchnyk, Y.Pakhomov, A.Filipenko, V.Chuzhykov, T.Shynkarenko, S.Shults and many others. In their works, the authors focus on studying the nature of transformation processes, analyzing the current state and trends in development of regional economies, assessing the economic structure, which includes sectorial, reproductive, organizational, technological, institutional foreign economic transformations, etc.

Previously unsettled problem constituent. Despite the number of researches conducted in this field of study, there remain some unsettled issues regarding

the improvement of methodological approaches to assessing trends, dynamics and intensity of economic processes in the country's regions.

Main purpose of the article. The aim of this article is to assess the trends and dynamics of economic processes in regions of Ukraine.

Results and discussions. The structure of an economy is exposed to ongoing dynamic processes that depend on not only the structural changes in the market, but the resource potential of the territory as well. Structural imbalances of regional economies are mainly caused by: lack of material, intellectual, financial, innovative resources and investment; a decrease in the volume of innovative production; high material- and resource-intensive production; a large share of intermediate consumption in the structure of GRP, which is a sign of goods and services with high GVA being produced in small quantities; poor development of innovative infrastructure, etc.

Structural changes can be characterized by means of various qualitative and quantitative indicators. For instance, indicators of mass, rate, speed and intensity of structural changes are used to analyze the dynamics and scale of structural changes. The mass of structural changes is calculated by the following formula [2, p.5]:

$$M = P_1 - P_0, \quad (1)$$

where P_1 denotes the value of the variable in the current period (%), and P_0 is the value of the variable in the base period (%).

The analysis of the mass of structural changes shows that industry, construction and finance were the fastest declining types of economic activity in the Ukrainian economy during the period of 2006-2013. It should be stated that all oblasts of Ukraine show a decrease in the mass of structural

changes in industry. In the structure of the regional economy, the most significant decrease in the mass of structural changes in industry took place in Khmelnytskyi (24.7%), Sumy (15.7%), Luhansk (13.1%) and Zaporizhia (10.9%) oblasts (Table 1). In other regions, changes in dynamics, which reflect the extent of structural changes, are smaller than the Ukrainian average, yet the lowest indicator values were recorded in Sevastopol (2.8%). This shows that there are no significant changes in the share of industry in the GVA structure and that industry maintains the structure-forming role in these regions [3, p. 96-98; 8, p. 136-146].

During the period of 2006-2013, the mass of structural changes in the construction sector of most Ukrainian regions, except for Donetsk and Ivano-Frankivsk oblasts, declined while the rest of the world experienced an increase in the share of this economic activity. A significant decrease in the mass of construction was caused by the deterioration of financing conditions for companies working in this sector (loan amounts were reduced and interest rates were increased, more stringent loan requirements were set). Such deterioration was brought on by the liquidity crisis in the global and Ukrainian financial markets and the reduction in effective demand of both the corporate sector (which was caused by a decrease in profits and low credit availability) and population (caused by a decrease in real incomes and mortgage loans, etc.).

An increase in the mass of structural changes in transactional economic sectors (except the financial sector – in 2013, its mass of structural changes decreased by 0.2 percentage points compared to 2006) should be considered a positive tendency. It should

be noted that the financial sector is one of the most important economic sectors in European countries and holds the largest share in the structure of their GVA. Unfortunately, in recent years most regions of Ukraine, except for Volyn, Zhytomyr, Zakarpattia, Sumy, Ternopil, Kherson, Khmelnytskyi oblasts and the city of Kyiv, have shown a decrease in the structural mass of financial services.

Over the period of 2006-2013, the share of trade in the structure of GVA increased in 16 regions. The mass of structural changes of trade grew rapidly in Kyiv (by 11.6%) and Sumy (by 9.8%) oblasts, while Vinnytsia and Zakarpattia oblasts showed the lowest growth rate (0.2%). During the analyzed period, a significant reduction of 4.3% in the structural mass of trade took place in Chernivtsi oblast and the city of Kyiv [1, p.96-98; 2, p.104-107].

One of the negative trends in structural economic changes in Ukraine is a meagre growth in the share of innovation-oriented economic activities in the structure of GVA. For instance, during 2006-2013 the increase in the share of education in the economic structure barely reached 0.7%. At the same time, its structural share decreased in four regions including the Autonomous Republic of Crimea, Kiev and Kirovohrad oblasts and the city of Kiev. Only in five Ukrainian regions – Volyn, Zakarpattia, Ternopil, Khmelnytskyi oblasts and the city of Sevastopol – the growth rate of the mass of structural changes in education was significantly higher than the Ukrainian average (respectively, 3 times higher in the first two oblasts and 3.8, 3.7 and 5.4 times – in the other three).

A comprehensive measure of the intensity of economic changes, which helps to quantify their scale and dynamics, is called

the integral coefficient of economic changes and is calculated according to the following formula:

$$C_{int} = \sqrt{\frac{\sum_{i=1}^T (P_1 - P_0)^2}{\sum_{i=1}^T P_1^2 + \sum_{i=1}^T P_0^2}}$$

In general, the integral coefficient of structural changes varies from 0 to 1 or from 0 to 100%. The smaller the difference between comparable institutions, the closer the ratio is to 0.01 or 1.00% and vice versa, the larger the structural changes, the closer it is to 1.00 or 100%.

It is noteworthy that higher intensity of structural changes implies a bigger structure-forming role of such changes in the economy. During 2006-2013, the intensity of structural changes coefficient calculated for the Ukrainian economy in general equaled 0.182, which indicated a lack of rapid and fundamental structural changes in the economy (Fig. 1). This process was significantly influenced by structural changes in trade and real estate operations. During this period, the most

intensive changes occurred in the economic structure of Khmelnytskyi oblast (0.429), particularly in agriculture and real estate operations. The economy of Dnipropetrovsk oblast had the lowest indicator of the intensity of structural changes (0.116), primarily due to the negative dynamics of the decrease in the share of industry and financial sector in creating GVA. In 15 regions of Ukraine the intensity of structural changes coefficient is higher than the national average [1, p.96-98; 2, p.104-107].

We should also state that a reduction in the mass of industry and construction has the most significant effect on the low level of intensity of structural changes in all Ukrainian regions (except for Donetsk oblast). A significant decline in the financial sector of Ukraine is another major obstacle for the growth of intensity of structural changes, in comparison with the developed countries, where the growing financial sector is the major driving force for further structural reforms and economic development.

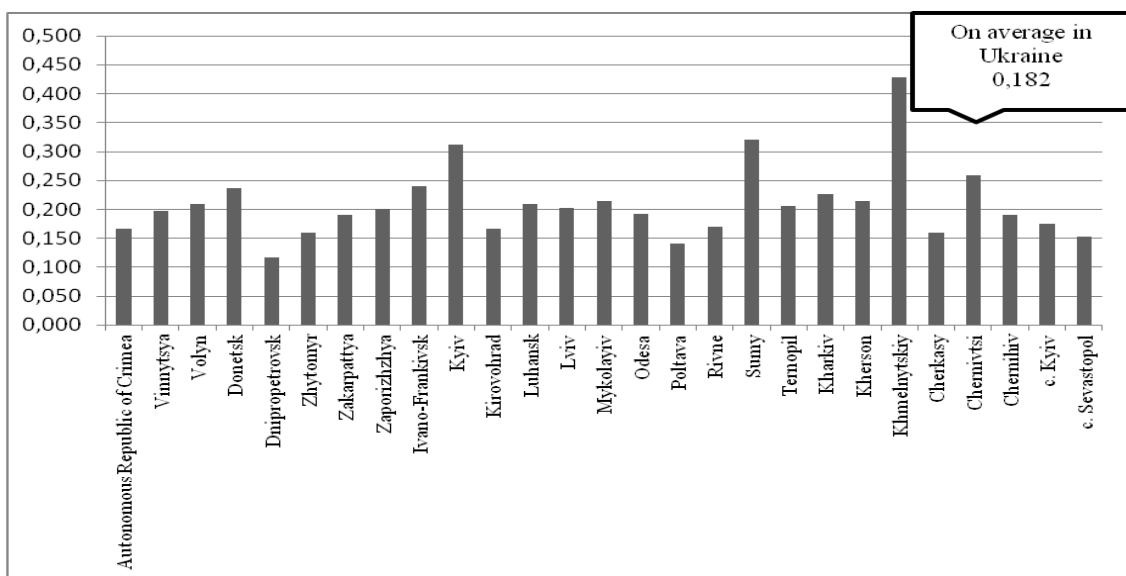


Fig. 1. Intensity of structural changes in Ukrainian regions during the period of 2006-2013

* Source: authors' calculations based on [1,2]

Having estimated the overall changes that occurred in the economy of Ukrainian regions during 2006-2013, we can state that structural economic changes are characterized by a general regularity: sectors with significant shares in the creation of GVA show greater stability over time than the ones with smaller shares. For instance, even though the changes in such major sectors as industry, agriculture and service are quite dynamic over time, their shares are stable during relatively short time periods, whereas the share of education or health care barely contributes the creation of GVA despite the dynamics of its growth.

The next stage of evaluating the quality of structural changes involves grouping the regions according to the development intensity of different types of economic activity and Ukraine's economy, and adjusting the regional and structural policy. We base our research of distribution of regions on the results of the shift-share analysis. In order to represent our results graphically we apply the method of distribution of regions within different economic sectors [8, p.76-82]. This method allows us to divide the regions into four groups: active (A), stable (B, C), troubled (D, E) and depressed (F). It should be mentioned that this graphical division must be detailed by the following characteristics regarding the prospects for economic development:

- Regions that are located in the upper right corner are characterized by high internal efficiency and high competitiveness at sectorial and national levels (sector A).

- In regions, which are located in the right triangle and lower right sector, development opportunities at the sectorial level are better than the ones at the national level, but worse than the ones at the regional level. That is, these regions can develop by

means of sectorial resources. The difference between groups B and C is that the latter has worse characteristics of the regional component (sectors B and C).

- Regions in the upper left corner and left triangle are more developed at the regional level and less developed at the sectorial level. That is, they maintain competitiveness by means of their own internal potential. However, the sectorial effect has a more negative impact on regions in sector E than those in sector D (sectors D and E).

- Regions in the lower triangle have low internal efficiency and poor initial conditions for development. This means they have low levels of both sectorial and regional components. However, providing the growth in demand of other regions, the competitiveness of these regions may increase (sector F).

The application of this method allows us to group the regions according to their development level within different types of economic activity into those that are in a state of growth and those in decline (see Fig. 2-7). In addition, it helps to optimize the economic structure by distinguishing the types of economic activity, which have low potential for becoming more dynamically development and prospective in the future. It also helps to identify the competitive advantages of certain types of regional economic activities taking into account national, sectorial and local factors.

As we can see from Fig. 2, there are favorable conditions for developing agriculture in regions that are located in sector A (Kherson, Vinnytsia, Kirovohrad, Zhytomyr, Poltava, Dnipropetrovsk and Mykolaiv oblasts). These regions experience the greatest impact of sectorial and regional

effects.

The dynamics of regions in sector B (Khmelnyskyi and Kyiv oblasts) are smaller yet enough to maintain a high development level of agriculture, forestry and hunting. Sector C is characterized by higher development rates of agriculture compared to national rates, but at the same time, its rates are lower than the regional ones (Sumy, Lviv oblasts, the Autonomous

Republic of Crimea and the city of Sevastopol). Section D (Odessa, Kharkiv, Donetsk and Zaporizhia oblasts) and sector E (Ternopil, Luhansk, Rivne, Volyn, Zakarpattia, Chernivtsi and Chernihiv oblasts) have low competitiveness at the national level, but may partially compensate this disadvantage by their internal regional potential. Meanwhile, regions located in sector E are more likely to face crises.

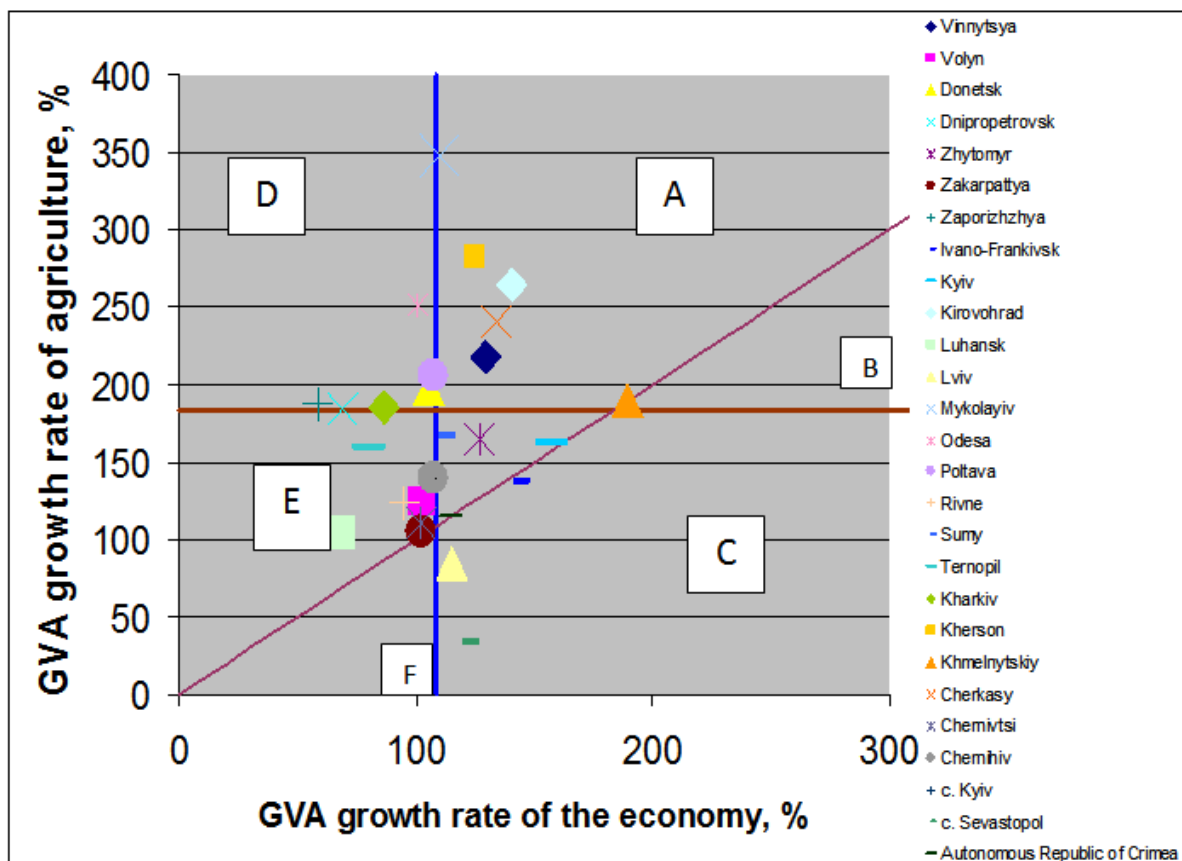


Fig. 2. Distribution of regions according to the development intensity of agriculture and Ukrainian economy (according to the indicators' rate of change in 2007-2013)

* Source: authors' calculations based on [2; 4; 5; 6]

However, in Fig. 3 the point of intersection of national and sectorial levels has untypically moved below the symmetrical development line. This

indicates a general deterioration of the results of development and functioning of industrial fields over the period of 2007-2013. We can also see that there are no

regions located in sector A.

Sector B encompasses a vast number of regions with their sectorial potential more powerful than the national one (Donetsk, Cherkasy, Kyiv, Poltava, Dnipropetrovsk, Zhytomyr, Vinnytsia, Ivano-Frankivsk, Kharkiv oblasts and the city of Sevastopol). This indicates that these regions are relatively stable and have sufficient reserves of sectorial potential. Compared to sector B,

regions in sector C (Lviv, Kherson, Zaporizhia and Sumy oblasts) have fewer opportunities for developing by means of their sectorial potential. Regions included in the depressed group (sector F – Ternopil, Chernivtsi, Khmelnytskyi, Volyn oblasts and the city of Kyiv) do not specialize on the development of industrial fields and that is why they fall into the critical area.

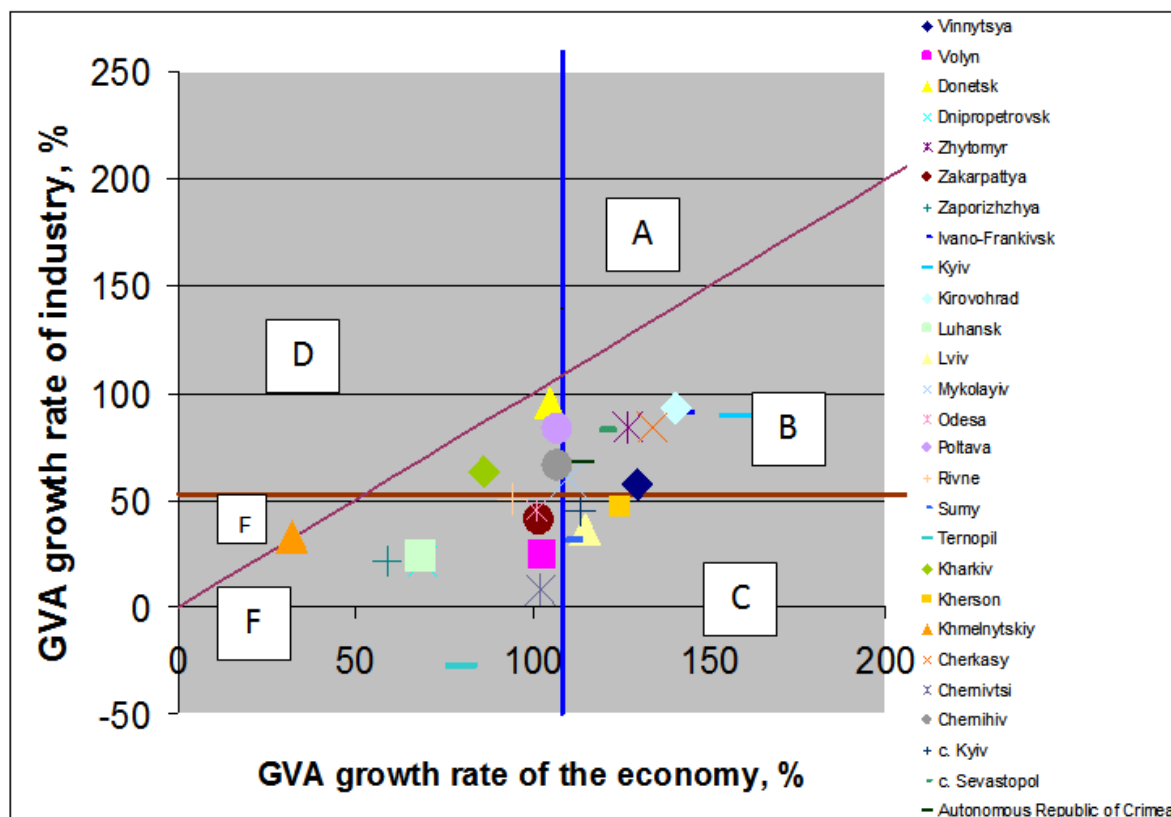


Fig. 3. Distribution of regions according to the development intensity of industry and Ukrainian economy (according to the indicators' rate of change in 2007-2013)

* Source: authors' calculations based on [2;4;5;6]

Such regions as Lviv, Kyiv, Ivano-Frankivsk, Sumy, Kirovohrad oblasts and the Autonomous Republic of Crimea have advantages in developing trade, and their sectorial and regional potentials are above average. The effective combination of both

MIX and DIF factors in this group of regions allows us to state that they have the best prospects for development (see Fig. 4).

No regions are included in sector B, which means there are no regions with their sectorial potential stronger than the national,

but with a negative regional component. A small number of regions is located in sector C (Zhytomyr, Kherson, Cherkasy, Chernivtsi and Mykolaiv oblasts and cities of Kyiv and Sevastopol). Sector D includes the following regions: Luhansk, Dnipropetrovsk and Odessa oblast. A distinguishing feature of section E (Donetsk, Zakarpattia, Zhytomyr, Zaporizhia and

Ternopil oblasts) is that the development of some of its regions is close to and yet below the national level. According to their locations on the chart, other regions within this group (Kharkiv, Lutsk and Khmelnytskyi oblasts) are troubled from the point of view of trade development. The critical area encompasses Chernivtsi, Rivne and Poltava oblasts.

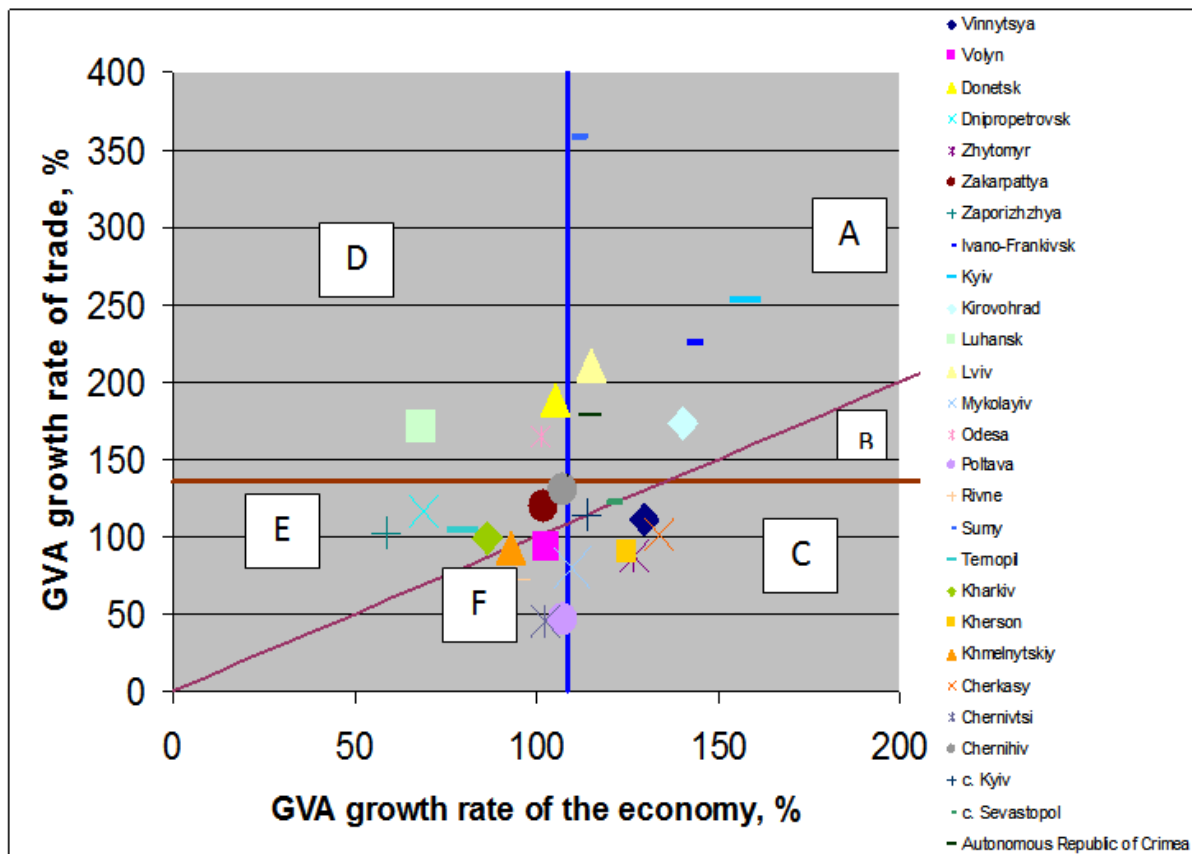


Fig. 4. Distribution of regions according to the development intensity of trade and Ukrainian economy (according to the indicators' rate of change in 2007-2013)

* Source: authors' calculations based on [2; 4; 5; 6]

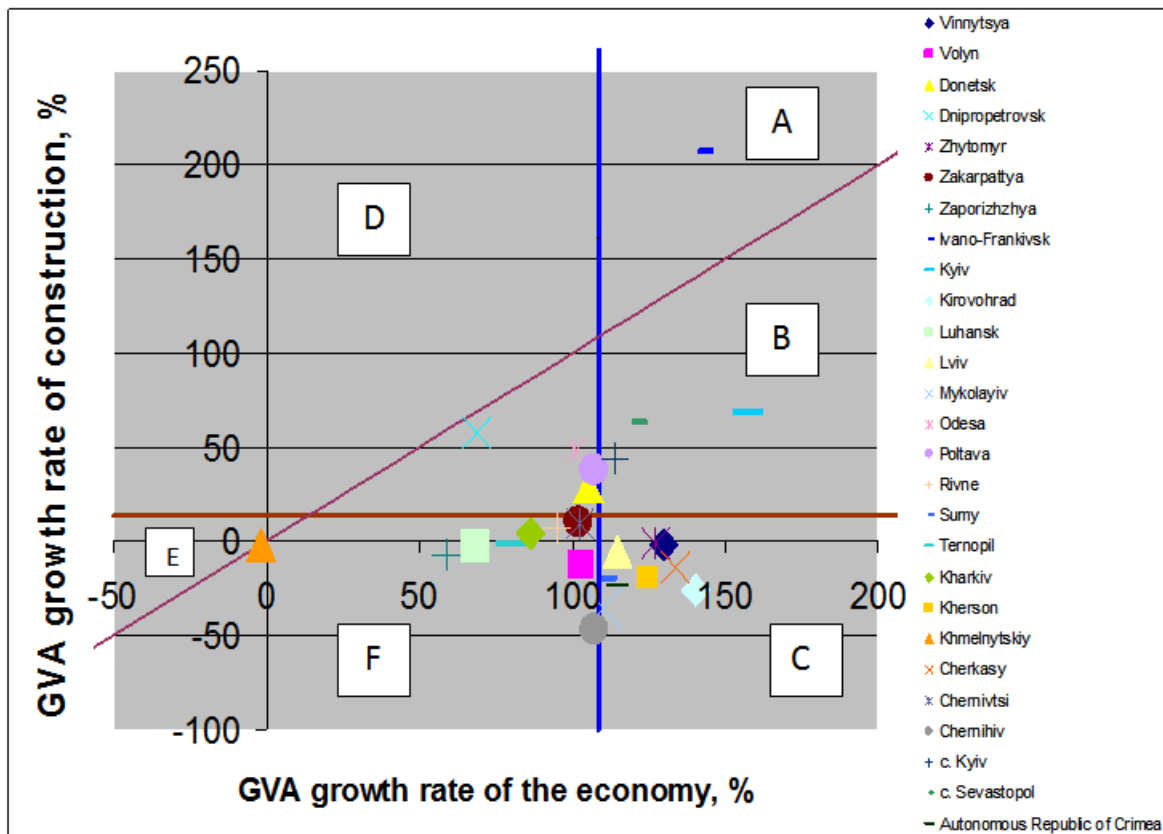


Fig. 5. Distribution of regions according to the development intensity of construction and Ukrainian economy (according to the indicators' rate of change in 2007-2013)

* Source: authors' calculations based on [2; 4; 5; 6]

In Fig. 5, we see that only one region – Ivano-Frankivsk oblast – has a highly developed construction sector whereas the regions such as Kyiv, Poltava, Donetsk, Odessa and Dnipropetrovsk oblasts and cities of Kyiv and Sevastopol are relatively stable. In comparison with sector B, sector C includes regions that are negatively effected by the regional component (Vinnytsia, Kherson, Lviv, Zhytomyr, Sumy, Kirovohrad oblasts and the Autonomous Republic of Crimea). The critical area encompasses Volyn, Zhytomyr, Luhansk, Zaporizhia, Kharkiv, Rivne, Chernivtsi and Zakarpattia oblasts.

At the same time, Zhytomyr, Vinnytsia, Ternopil, Ivano-Frankivsk, Cherkasy, Lviv, Kherson, Kirovohrad, Chernihiv and Poltava oblasts and the Autonomous Republic of Crimea have favorable conditions for the development of real estate operations (see Fig. 6). Sectors B (Khmelnytskyi oblast) and C (Dnipropetrovsk oblast and cities of Kyiv and Sevastopol) include regions that are positively effected by the sectorial component. Therefore, the listed regions have a potential advantage in developing by means of the MIX effect, with limited opportunities of regional potential.

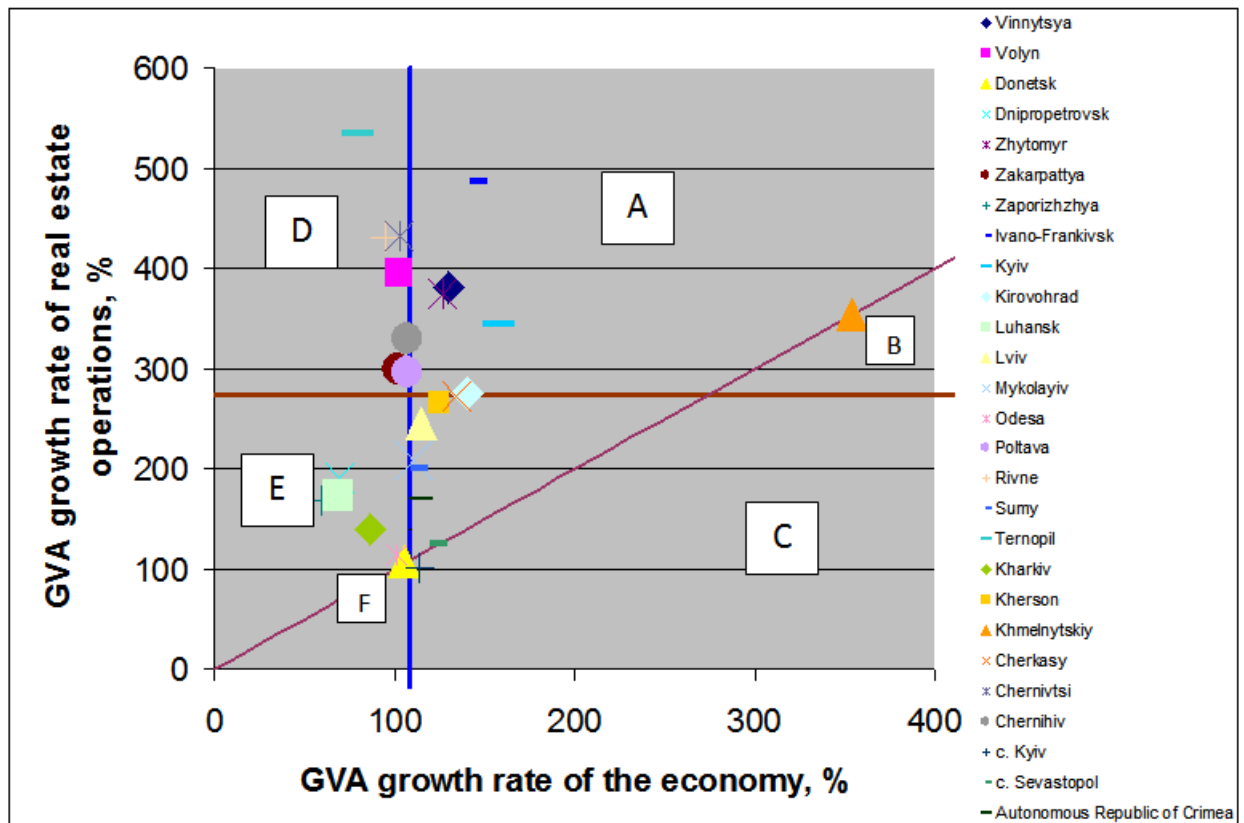


Fig. 6. Distribution of regions according to the development intensity of real estate operations and Ukrainian economy (according to the indicators' rate of change in 2007-2013)

* Source: authors' calculations based on [2; 4; 5; 6]

Sector D includes such regions as Kyiv, Rivne, Chernivtsi, Volyn and Zakarpattia oblasts while sector E includes Luhansk, Donetsk, Kharkiv and Odessa oblasts and the city of Kyiv. Thus, the regions in these sections are stronger in regional yet weaker in sectorial distribution, which indicates the priority of their development by means of the DIF effect.

The extent to which the dynamics of GVA within different types of economic activities are influenced by national, regional and sectorial effects reveals the fact that half of the regions are characterized as troubled and depressed in sectors of industry (48.15%), construction (62.97%), financial activity (55.55%), trade (59.27%), public

utilities (59.27%), transport and communications (55.87%) [9]. This requires detecting and eliminating the main causes of slowdown in the dynamics of indicators, as well as outlining and implementing policies to support their development at the national, sectorial and local levels. At the same time, one third of regions maintain their leading positions in certain types of economic activities, particularly in agriculture – 26.9%, trade – 22.22%, real estate operations – 48.15%, public administration – 25.93%, education – 29.63%, health care – 29.63%. To sum up, we would like to note that competitive advantages of the national component must be ensured by strengthening the regulatory

functions of the state. Normally, they should be aimed at redistributing the available resources in order to smooth the asymmetry of structural development, and creating favorable conditions for doing business. The sectorial effect can be stimulated by regulating and setting priorities for the development of strategic economic activities. Meanwhile, the competitive positions of the regional component are used within the economy of a particular territory and regulated by regional policies of local authorities.

Conclusions and further research directions. Considering the foregoing, it is worth mentioning that the division of Ukrainian regions according to the quality of structural changes and the level of development intensity of Ukraine's economy from the point of view of different economic activities allowed us to outline the

main ways of adjusting structural policies in these types of regions. In general, structural economic changes must meet the needs and trends in development of the post-industrial economy. Economic growth of the country depends on the efficiency of structural economic changes. For this reason, the main problem that needs to be solved is finding ways to enhance the efficiency of structural changes in economy. Economic changes should lead the economy to a reorientation toward the post-industrial stage of development which is characterized by the predominance of intellectual resources and features of the fifth or sixth technological paradigm. That is, the emphasis should be made on supporting the development of knowledge-intensive, high-tech industries and production, as well as the development of science and education.

References

1. State Statistic Service of Ukraine (2011). Valovyj rehionalnyj produkt za 2001-2009 roky [Gross regional product for the years 2001-2009]. Statystychnyj zbirnyk [Statistical Publication]. Kyiv. [in Ukrainian].
2. State Statistic Service of Ukraine (2015). Valovyj rehional'nyj produkt za 2013 rik [Gross Regional Product for 2013]. Statystychnyj zbirnyk [Statistical Publication]. Kyiv. [in Ukrainian].
3. State Statistics Service of Ukraine (2015). Retrieved from <http://www.ukrstat.gov.ua>
4. State Statistic Service of Ukraine (2012). Valovyj rehional'nyj produkt za 2010 rik [Gross Regional Product for 2010]. Statystychnyj zbirnyk [Statistical Publication]. Kyiv. [in Ukrainian].
5. State Statistic Service of Ukraine (2015). Rehiony Ukrainy 2014 [Regions of Ukraine 2014]. Statystychnyj zbirnyk [Statistical Publication] (Vol. 1). Kyiv. [in Ukrainian].
6. State Statistic Service of Ukraine (2011). Rehiony Ukrainy 2010 [Regions of Ukraine 2014]. Statystychnyj zbirnyk [Statistical Publication] (Vol. 1). Kyiv. [in Ukrainian].
7. Lutskiv, O.M. (2015). Otsinka dynamiky ta intensyvnosti strukturnykh zrushen' v rehionakh Ukrainy [Assessment of the dynamics and intensity of structural changes in regions Ukraine]. *Ekonomichni nauky. Seriya: Rehional'na ekonomika - Economic science.- Series: Regional economy, Vol. 12 (47) (pp. 136-146). Lutsk. Lutsk National Technical University.* [In Ukrainian].
8. Trubnik, T.Y. (2012). Metodolohichni aspekty statystychnoho analizu rozvytku sektoral'noi struktury natsional'noi ekonomiky [Methodological aspects of statistical analysis of sectoral structure of the national economy]. *Ekonomichnyj analiz - Economic analysis. Vol. 10, Part 2 (pp. 76-82). Ternopil.* [In Ukrainian].
9. Gabrel M.S. (2015, 30 November – 7 December). An estimation of quality of structural changes is in the regions of Ukraine. *Materials of the XI international scientific and practical conference [Conduct of modern science – 2015], 3-7.*

**ЕКОНОМІЧНИЙ РОЗВИТОК ЕКОНОМІКИ РЕГІОНІВ:
ДИНАМІКА ТА ІНТЕНСИВНІСТЬ ЗМІН**

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У статті здійснено оцінку економічних процесів, що відбуваються в регіонах України в розрізі видів економічної діяльності за показником ВДВ впродовж 2006-2013 рр. на основі визначення темпів зміни питомої ваги структурної маси економіки регіонів та інтенсивності структурних змін, що відбулися за цей проміжок часу в економіці регіонів України. На основі систематизації та аналізу існуючих методичних підходів здійснено розподіл регіонів за інтенсивністю розвитку видів економічної діяльності та економіки України загалом, в результаті чого було виділено регіони-лідери, стабільно-сталі, проблемні, депресивні регіони. Розроблено пропозиції та виокремлено основні структурні диспропорції, які характерні для українських регіонів, а також запропоновано шляхи їх коригування та усунення за відповідними типами областей.

***Ключові слова:** економічний розвиток, економічні процеси, структурні зміни, інтенсивність структурних змін, маса структурних зрушень, види економічної діяльності, регіон.*

**ЭКОНОМИЧЕСКОЕ РАЗВИТИЕ ЭКОНОМИКИ РЕГИОНОВ:
ДИНАМИКА И ИНТЕНСИВНОСТЬ ИЗМЕНЕНИЙ**

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В статье осуществлена оценка экономических процессов, происходящих в регионах Украины в разрезе видов экономической деятельности по показателю ВДС в течение 2006-2013 гг. на основе определения темпов изменения удельного веса структурной массы экономики регионов и интенсивности структурных изменений, что произошли за этот промежуток времени в экономике регионов Украины. На основе систематизации и анализа существующих методических подходов осуществлено распределение регионов по интенсивности развития видов экономической деятельности и экономики Украины в целом, в результате чего были выделены регионы-лидеры, стабильно-устойчивые, проблемные, депрессивные регионы. Разработаны предложения и выделены основные структурные диспропорции, характерные для украинских регионов, а также предложены пути их коррекции и устранения за соответствующими типами областей.

***Ключевые слова:** экономическое развитие, экономические процессы, структурные изменения, интенсивность структурных изменений, масса структурных сдвигов, виды экономической деятельности, регион.*