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## EVALUATION OF POSSIBILITIES AND PROSPECTS OF INVESTMENT ACTIVITIES IN LVIV REGION

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Development of investment activities in Lviv region has been considered with the aim to discover opportunities of increasing the efficiency of using the investment resources attracted to the region. On the example of Lviv region there have been explored the possibilities of forming dynamic-dependent levers for increasing the efficiency of investment activities, of controlling the investment instruments effectiveness in this region as well as regulating these instruments direction and impact on the expected results of social and economic development of the region that are laid down in the relevant regional programs.

**Key words:** investment levers and instruments, investment activity in the region, formation, regulation, monitoring, regional development programs, Lviv region.

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## ОЦІНКА МОЖЛИВОСТЕЙ ТА ПЕРСПЕКТИВ РОЗВИТКУ ІНВЕСТИЦІЙНОЇ ДІЯЛЬНОСТІ У ЛЬВІВСЬКІЙ ОБЛАСТІ

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Розвиток інвестиційної діяльності у Львівській області розглянуто з позицій розкриття можливостей підвищення рівня ефективності використання залучених у цей регіон інвестиційних ресурсів. На прикладі Львівської області досліджено можливості формування динамічно-залежних важелів підвищення ефективності інвестиційної діяльності, контролювання результативності впливу інвестиційних інструментів у цій області, а також регулювання міри впливу і напряму дії цих інструментів на заплановані результати її соціально-економічного розвитку, закладені у відповідних регіональних програмах.

**Ключові слова:** інвестиційні важелі та інструменти, інвестиційна діяльність у регіоні, формування, регулювання, контролювання, програми регіонального розвитку, Львівська область.

### Problem statement

In the current activation of processes of international capital flows the impact of investment activity (IA) at the regions of Ukraine's economy has not only a significant macroeconomic effect, which manifests itself in the total accumulation of capital, but also it is evaluated by different levels of investment resources efficiency involved in these regions. This efficiency is determined by the level of sophistication of the investment policy at the region, by formation and adequacy of individual IA's tools and by complex action of existing mechanisms for use of these capital resources, their ability to negotiate the quality and stability of social and economic development of the region in the long term. All mentioned actualizes the problem of efficient IA development in the regions of Ukraine.

### **Analysis of recent research and publications**

Investigation of this problem requires a systematic approach that involves considering the factors associated with both investment growth and stabilization of the region economy and their impact on the change in performance of functioning regional economy indicators [1].

In turn, quantified density and essentiality of connection between input factors such as investment in fixed assets in the region (as a whole and for its individual key types of activity) and output indicators, which reflect the overall impact of these investments on social and economic development region, all that allows the use of such particular objective statistical tools as methods of correlation and regression analysis. So, we have already investigated the possibility of using these methods to create dynamically-dependent increase levers of investment performance for example of Lviv region [2].

However, it has been paid little attention to controlling the performance impact of IA's levers in this region, and in general, and to measure the impact of regulation and direction of these levers to the planned results of its socio-economic development inherent in the relevant regional development programs, in particular for Lviv region – at the programs and strategies of socio-economic and industrial development [3–4, 6–8].

### **Objectives**

The purpose of this article is evaluation of the possibilities and prospects of investment activity development in the Lviv region, based on one hand on indicators of growth inherent in the strategies and programs of the region development, and on the other hand – on the identified trends and correlation of such activities results with used for their regulation tools and levers.

### **Materials**

First of all, the overall impact of the investment lever or of a certain amount of *fixed capital investment* in social and economic changes at the Lviv region can be measured by its compliance of operational objective of the Strategy of development of this region on the formation of a favorable climate for business and investment attraction (up to 2015 [6]).

To the amount of such investments (in fixed assets) should be included costs for new construction, reconstruction, expansion and modernization of existing industrial, agricultural, transportation, trade and other enterprises, the cost of construction of objects of housing and civil purposes.

According to a study results there were revealed growing of share of investment in fixed assets in the structure of capital investment at Lviv region at 2005–2013. All that is indicated the increase in costs for new construction, reconstruction, expansion and modernization of enterprises, objects of housing and civil purposes use, which all together is contributing economic development in the region.

First of all, the structure of investments in fixed capital indicates which areas are priorities in the region, and it shows the change in the share of regional investments in dynamics. Thus, in 2013 for Lviv region the priority investments were: transport and communications (including transport infrastructure objects), real estate operations, manufacturing industry, trade, and providing public and personal services activities in the sphere of culture and sport, recreation and entertainment.

Dynamics of investments in fixed assets reflects the general trends of the region as one of the key indicators for its development. Analysis of indices of investment in fixed assets for different types of economy activities (TEA) at Lviv region give us the possibility to determine the directions of investment of the regional economy. According to the development strategy of Lviv region there were adopted the recommended index of investment in fixed assets (compared to 2005): in 2013 – at 201,1 %, in 2015 – at 878,9 %. The desired level of investment in fixed assets in 2013 would be 17022 bln. UAH, and in 2015 – 44150 bln. UAH.

However, the actual level of investment in fixed assets in Lviv region in 2013 is amounted to 91231 trln. UAH, which is almost 2 times lower than the recommended value. With an average growth rate of investment in fixed capital region, set at 118,2 % (by the actual data for the 2005–2013), can not predict the rapid growth under the planned in strategy level for 2015. Assessment of the dynamics of investment in fixed assets at Lviv region (at comparable prices) gives a more pessimistic result – in 2013 there was reached only 78,0 % of the 2005 level.

For the 2005–2013 the biggest changes in the Lviv region held in the following areas of investments: there are increased investments in the provision of public and personal services, agriculture, hotels and restaurants activities, real estate operations, production of electricity, gas and water, financial activities and transport and communication. The dynamics tendency both on the level and structure of investment in fixed assets in the Lviv region correspond to the general trend of investment processes in the Western region and in Ukraine in general.

Among the results of the impact of investment leverage on the economy of Lviv region (based on the built in [2] correlation-regression models and taking into account the selected key successful factors of IA in the region) firstly we should estimate the effect of increasing investment in fixed assets influence into the gross value added (GVA). Given that GVA is the main macroeconomic indicator that characterizes the development of the region, it was included into the key indicators for the formation and implementation of the adopted Strategy of Lviv region (up to 2015). In particular, according to this Strategy, we identified the recommended indices of GVA (compared to 2005): in 2013 – at 122 %, in 2015 – 177 %. While the actual average growth rate of GVA in the region for years 2005–2013 was at 121,8 % (and according to comparable prices, level of GVA in 2013 was only 99,8 % of its level in 2005).

Assessment of relative change of GVA by investing in fixed capital region, which is conducted by the coefficient of elasticity, leads us to the conclusion that the overall performance of the investment arm of the Lviv region gives a rather modest result: an increase in investment in fixed capital region at 1 % gives GVA average increase at 0,84 %.

The growth of GVA in Lviv region in pre-crisis period (an average at 107,0 % in 2000–2007, according to the GVA volume indices) is associated with development of such activities as transport and communications, manufacturing industry, agriculture and trade.

While the decline in GVA in the region in times of crisis and post-crisis (or between crisis) period (by evaluating at comparable prices – in average at 95,1 % for 2008–2013), this is the basis for in-depth analysis, searching for the cause and response for improvement of situation. Thus, for the Lviv region it should be given the special attention to the following priority TEA as: agriculture, construction and all industries, whose condition are characterized by a decrease of their GVA formation (in the period of 2005–2013).

Critical analysis of the investment process in the Lviv region showed us, that absence of significant growth of investment in fixed capital causes, firstly, a negative trend in real GVA, and secondly – increase of negative structural deformations in the regional economy. Instead of technological reconstruction and technical re-equipment today we have seen the development of opposite processes, i.e. playing technological backwardness (average depreciation of equipment for enterprises of all TEA in Lviv region by the end of 2013 was about 60 %, and for such leading areas as transport and communications' connection – even up to 80 %). While the rate of replacement of fixed assets in general for all TEA in region was declined from 5,2 % – in 2005 to 3,6 % – in 2013 This affects negatively into the technical level of production and product quality. In other words, under the preservation of these dangerous tendencies region may gradually lose the basis for sustainable economic growth.

An important indicator of the reproduction of the attracted investments use in the region as a whole and at the level of individual entities is *enacting of new fixed assets*. The cost of fixed assets (FA) describes the potential of the regional economy and its TEA, and dynamics of FA reflects general trends in the region development.

In particular, the *change in value of fixed assets* is included into the list of key indicators to measure the feasibility of one of the main operating objectives of the Strategy of Lviv region, such as the development of market infrastructure.

The rising of FA enterprises cost in Lviv region (in 2000–2013 – in average at 123,3 % per year, by the actual prices) reflects both the economic development of the region as a whole and the development of its certain activities. The largest volume of commissioning FA for this period was observed for such regional TEA as mining, operations with real estate, transport and communications, manufacturing. While the rate of commissioning FA for enterprises of the region was the highest for such TEA as: the public services (with an average index of 145,3 % to prev. year), electricity, gas and water (142,1 %) real estate (142,0 %), finance (136,7 %), agriculture (124,2 %).

Change the value of FA in selected TEA (mostly priorities for development of Lviv region) not only meets the needs of renovation of fixed assets in the Western region, but also it reflects the general tendencies of putting FA on similar TEA in Ukraine. In particular, it is given fact that the rate of FA input at the enterprises of Lviv region for 2005-2013 was 1,092 times higher than in Ukraine, and 1,012 times higher than in the Western region.

The researched influence of the investment lever on commissioning of fixed assets in the Lviv region (linear regression model built between investment in fixed assets and the introduction of fixed assets for the years 2000-2013), it leads us to the following conclusions:

- firstly, there is an exceptionally tight relationship between these factors (92,6% of change in the value of putting fixed assets had been added because of changes in fixed capital investment);
- secondly, this connection is indicated by relatively high elasticity (when increase the amount of fixed capital investment at 1 % causes an increase in the value of entered in the fixed assets – at 0,975%).

Therefore, the results of the impact on the economy of the investment arm of the Lviv region in this direction mean that most investments in fixed assets comes as intended and provides extension of fixed assets at enterprises and organizations of the region, in particular, that allows to speed up the development of regional market infrastructure.

The quality and speed of reproduction an active part of fixed capital in the region are determined primarily by the level of innovation activity of enterprises. In practice, it so happened that in recent years in the Lviv region (particularly in its industry) there was some slowdown in investment spending on innovation. If at 2002 index of *scientific and technical work, performed by own capital of enterprises and organizations at the region*, amounted to 121,7% (to prev. period in current prices), than in 2013 – it was only 109,1 %.

It could be revealed several main reasons for slowing growth of investment spending on innovation in the Lviv region. Firstly, at the structure of sources of investment in fixed capital region decreased the part of such sources as own funds of enterprises and organizations (from 76,2 % – In 2000 to 49,3 % – in 2013). However, given the difficult financial situation of Lviv region enterprises (38,3% of their results for 2013 were a loss, it was also a significant amount of receivables and payables between entities) and excessive tax burden, there is a constant risk of low of own enterprises investment resources.

Thus, if the average growth rate of own funds of enterprises and organizations for years 2000–2013 (by evaluation in actual prices) is amounted to 118,4%, than the growth of scientific and technical works performed by own forces of enterprises and organizations of the region, was slower for same period and reached only 115,7 %.

Assessing the impact of investment leverage to change the volume of scientific and technical work performed by own forces of enterprises and organizations of Lviv region (investigated through the study of the nature of the linear correlation between these processes for the 2000–2013), it allows to explain 87,5 % of volume change of these works at enterprises of the region by the variation of their own funds value and, based on the estimated coefficient of elasticity, it allows to note that the change of these own funds at 1 %, it gives the probable increase at 0,781 % in amount of scientific and technical works, performed by own forces of enterprises and organizations of the region.

In addition, it should be noted some changes in the structure of funding financial sources for scientific and technical work performed by organizations (enterprises). So, for years 2000–2013 in the structure of such work funding the share of the state budget has increased (from 40,3 % to 59,1 %) and the share of own funds (from 1,5 % to 4,3 %), while there were decreased the shares of domestic funds (from 47,6 % to 31,9 %) and foreign customers (from 9,0 % to 2,1 %). This growing of dependence of domestic enterprises-innovators of the region of the public procurement, reducing the share of revenue funding of technological innovation due to orders from private companies and decreasing the share of the production of such innovations for their own needs – all this, taken as a whole, may be regarded rather as factors that hinder the innovative development of industrial production in Lviv region.

On the other hand, such factors as lack of activity of commercial banks to provide long-term investment loans, are forcing economic agents to focus in the course of technical development primarily on their own resources: cost of depreciation and profit that disposed companies after taxes payment.

Searching for opportunities to increase own funds of enterprises and organizations as chief today in all regions of Ukraine source of inward investment, it is often deservedly diminished role of depreciation and amortization. On the one hand, this is because the current system of depreciation performs primarily fiscal function and almost does not provide incentives for new capital assets. On the other hand, the bulk of depreciation (50–70 % – in the Lviv region) is used for other purposes.

To enhance the role of depreciation in the financing of investments in fixed capital it may be asked to enter a particular mode of motion of depreciation for regional enterprises through introducing a system of investment accounts with the restriction of the use of money that they accumulated solely for capital construction and equipment purchases.

Further development on the depreciation policy in Lviv region should become an important regulator of the process of reproduction of fixed assets and effective instrument of economic adjustment processes in areas related to upgrading production facilities.

However, the main measure of effectiveness of the investment process both in individual enterprises and on certain types of economic activity (TEA), it is *income*, earned on investments and sale of certain investment projects. However, this is the main source of income for reinvestment. This profit makes repayment of credit cost and interest for its use, the payment of dividends to holders of the company, changes in salaries. Funds, which are available to business administration (retained and reinvested earnings), could be allocated for development of enterprises.

Taking into consideration the importance of profits for social and economic development of the region, those identified trends are especially dangerous. Firstly, in 2008–2013 the activity of most TEA in Lviv region was characterized by a loss of profitable financial results (the share of unprofitable enterprises in the region increased to 38,3 % – in 2013, compared at 33,9 % – in 2000).

Secondly, investments in fixed assets did not become the main lever of influence to ensure profitability of the Lviv region. Linear correlation between investment and financial results of enterprises of the region it was negligible.

However, it is necessary to identify a number of other important factors that significantly affected the financial performance of the Lviv region for the period. So, the loss of financial results in the regional economy were resulted primarily by slowing growth in production and sales of goods (works, services), measured in indices of physical volume, from 108,4 % – in 2000 to 84,8 % – in 2013.

Also among the main reasons for obtaining financial damages in Lviv region there are the following:

- increase in operating expenses of enterprise at the all TEA of region (up to 98,3 % of sales for each hryvnia – at the end of 2013), which is associated with the increase in commodity prices, costly energy that causes a rise in prices for finished goods (with the average consumer price index – 112,2 % for the 2000–2013 and the producer price index of industrial production – 114,5 % to prev. year) and it stimulates the growth of demand for imported goods in the country;
- excess of payable on accounts (in average 26,3 % for the 2005–2013);
- low productivity of enterprises in key TEA of region, which is a result of aging and wear of fixed assets due to lack of funds for timely renewal of production equipment;
- ineffective marketing and sales strategy of individual entities, etc.

Non-profitability of TEA in Lviv region is the reason that the regional companies lose the opportunity to direct a portion of profits to upgrade production, without which it is impossible to create high-quality products and to replenish working capital.

On the other hand, many unprofitable enterprises in some TEA of the region becomes a barrier to attracting investment resources in the form of bank loans because the cost of loans is very high and there is a risk of its non-repayment. Therefore, the internal organizational and economic levers for companies in the region is to find the optimal choice of strategy and sources of financing production needs, particularly given the fact that getting investment of resources in the form of bank loans only partially solves the problem of insufficient replenishment in terms of financial resources, which would be aimed at replacement of fixed assets and supplemented limited working capital.

As noted earlier, despite the lack of impact of the investment arm of the financial results of most regional TEA, the *dynamics of sales* is closely related to the action of this lever. In fact, 89,1% of the variation in sales Lviv region linearly related to the inflow of investments in fixed assets. Dependence of sales from the 1 % of the fixed capital investment grows in region is characterized by high elasticity,

coefficient of which is 0,826 %. Estimation of confidence limits of the linear regression coefficient suggests that an increase in the amount of investment in fixed capital of region at 1 UAH, the volume of sales will increase from 5,6 to 8,6 UAH at the average.

The increase in sales meet the quantitative and qualitative changes in the economic structure of the region by its TEA: increase or decrease in the contribution of individual TEA in general economic results, and determination, how certain TEA provides economic security of the region, it is contributing to the achievement of such economic status of the region in which provided sustainable development of society and economy and their ability to adequately confront threats, provoked by negative influence of internal and external factors.

Given the priorities for implementation of the Strategy of Lviv region till 2015, it is important to increase volume of sales indices (works, services), including the following TEA that significantly affect the economic performance of the region, namely: industry (which sales volume index in 2013 to prev. period was 100,9 %), agriculture (96,9 %), construction (81,4 %), transport (for carriage of goods – 124,4 % of passengers – 98,1 %), trade (106.4 %). Thus, the growth rate of goods (works, services) in key areas of the economy of Lviv region is currently the highest for transportation sector, remain approximately at the previous period - for industry and trade, and have a tangible reduction - for construction, agriculture and passenger traffic. These results confirm the analysis review of the transport sector as an important component in the economic structure of Lviv region.

The significance of the influence for investment lever in the direction of “transport” can be confirmed by the fact that in 2013 into the development of transport companies there were directed about 13 % of the total investment in the regional economy. At the same time, in transport companies there were concentrated 35,8 % of the value of all fixed assets of the region. However, the main means of transport are in poor condition – the level of their depreciation is 80 % (as a whole in the region – 60 %). This is largely due to the slow transport production renewal: update rate there were 0,6 %, while in general in the region – 2,6 %.

The total volume of cargo transport, calculated by the sum of multiplication the products of cargo to the distance of transportation of each shipment, is measured as *freight turnover* index. Analysis of linear regression model between investment in fixed assets in transport and freight turnover at Lviv region, it allows us to conclude about inefficient use of investments, the amount of which was significant and growing. Thus, only 7,2 % of increase in freight turnover in region can be attributed to growth in invested in this sphere.

Analysis of the use of investment lever in transport through his influence on the regional freight turnover (based on estimates of confidence limits of the regression coefficient in the proposed univariate linear regression model “investments in transport – freight turnover”) allows us to establish that after increase in investment in fixed assets to 1 UAH there can be obtained fluctuation values of freight turnover from 0,6 to 2,2 tonnes-km, which proves, in turn, insignificance of connection between the features in this model, and hence – the inadequacy of the investment lever action in region by this direction.

However, we can not underestimate the importance of transportation as an important area of economic activity in the Lviv region. The gradual increase of transport means an increasing the number and improving the quality of vehicles in the region and the emergence and development of various types of ancillary (related) transportation services.

Thus, the active development of the transport sector at Lviv region will improve the functioning of other TEA closely related with him, and vice versa, only an increase in industrial production, agriculture, construction and trade will determine the load of transportation system.

Since most of the transportation in Lviv region is a transit and is associated with a border position of this area and with its location at the crossroads of communications with internal and external (for Ukraine) important economic centers, the volume and share of this transit traffic should be increased by improving the quality of roads.

The increase in traffic (shipments) is connected with increasing standards of living in major cities and regional centers, and with the development of tourism in the region. In the Lviv region over the coming years this index should increase significantly, and the lack of its growth indicates both the presence

of obstacles in the development of this and related sectors of the region economy and the need to adopt and implement additional programs in this area.

Given the crucial role played by the development of tourism in the implementation Strategy of Lviv region, and also taken into account the importance of transport for economic development of the region, in assessing the level of traffic indicators (sending goods) it must be considered these parameters to achieve to the recommended level (according to the Strategy development of the region [7]): in particular for freight turnover recommended level in 2010 was 11,8 bln. ton-km (in actual sense – 10,1 bln. ton-km), while in 2015 recommended – 12.7 bln. ton-km.

An important indicator of the effectiveness of the final impact of the investment lever on the economy of the Lviv region in all its TEA (from transport to social assistance), it is to *increase the total value of assets of enterprises and organizations of the region*. In particular, studies of the linear regression relation between the increase in investment in fixed assets and the total asset value region for 2000–2013, it reveals considerable flexibility of such relationship: increase in investment in fixed assets at 1 % corresponds to an increase in assets of companies at the region at 0,678 %. Linear relation between investment in fixed assets of regional enterprises and their assets are dense, which is evidenced by the relatively high value of the coefficient of determination (0,786), and thus, 78,6 % of increase in assets of companies in the region is determined by the growth of investment in fixed capital.

An important fact is that the average growth rate of firms' assets at Lviv region for 2000–2013 at 118,16 % is replied with slightly greater rate of growth of the volume of sales of these enterprises (118,95 %) at the same period, which fully confirms the action of corresponding component of the “golden rule of economy” for a generalized assessment of all regional TEA, and it determines the basis not only for the efficient development of the economy, but also for reforms in the social sphere.

Living conditions of the population, life expectancy, stable growth of the employed and economically active population, increasing income levels are the indicators which are responsible for the implementation of operational goal – the development of human and social capital (within the Development Strategy of Lviv region in 2015 [6]).

Thus, the increase in the *commissioning of housing* in Lviv region (average for 2000–2013 – at 105,6%, according to current prices), this is generally indicates an increase in housing construction and improvement of living conditions of the population, which in the first turn, is a consequence of the use of leverage for investment growth in housing investment. On the other hand, it should be noted that the growth rate of housing investment in the Lviv region (mean + 126,47 %) is far ahead of the growth in residential construction (including commissioning housing), which gives us reason to find causes ineffective use of funds.

According to the investment action lever in the direction of “housing” (by setting the corresponding linear correlation model), it can draw the following conclusions:

- increase of commissioned housing in the Lviv region in 2000-2013 at 81.5 % is explained by the growth of housing investment;
- elasticity of connection between these parameters for this period is reasonable: when housing investment is changing at 1 %, the volume of commissioned housing in the region is grow at 0,338 % an average.

The development of human and social capital at region is also directly characterized by using the indicator of *life expectancy*, which reflects both the state of quality of life (level and quality of health care, state of the environment, etc.), and the presence of certain habits and traditions (response to the disease and its treatment and prevention, nutrition, etc.). The higher is the quality (level) of life, the greater will be its duration.

Continuation of life expectancy in the region due to the implementation of measures in the field of medicine, prevention and treatment of diseases and others provides financial support to implement these measures through the use of leverage – investment to stimulate the development of the health sector. Increase of funds for health care is the result of economic development and gives a greater impact if accompanied by improved nutrition, lifestyle change to healthy, etc.

In fact, investing and financing health care in Ukraine and Lviv region is insufficient, which is supported by such facts. In recent years, the average expenditures in Ukraine on health were 99 USD per year per person, while in Lviv – 88,7 USD. For comparison, in the United States – 8 ths. USD, in Russia – 0,4 ths. USD. Investment in fixed capital of health and social care area per person per year in Lviv region is more than in Ukraine (67,7 UAH – in Lviv region against 59,9 UAH – in Ukraine). However, their total volume is insufficient for the full development of this sector. Particularly, there is the given fact, that by the incidence of all types of diseases Lviv region ranks third place in Ukraine.

Research of investment arm's potency in the social sphere of Lviv region, in particular the study of changes in the funded health and social care and its impact on life expectancy (in assessing the appropriate linear regression dependence), it indicates us no significant correlation between these indicators. That may be perceived as a threatening indicator of not only real direction and of non-effective use of received investment by this area, but also it provides the insufficient level of medical care and social security in the region. In fact, it was evaluated that investment, which received by this social area, can affects only 6,2 % the prolongation of life for the region population.

Meanwhile, population growth is affected the number of births and deaths, life expectancy and migration in the Lviv region. If it will be a definite stable growth of the employed and economically active population, it will indicate availability of potential in region for its further development.

The impact of investment leverage to increase the quantity of employed economically active population at Lviv region is low, namely an increase in investment in fixed capital region at 1 % caused the quantity of economically active employed population changes only at 0,013 % in the 2000–2013 at average. Therefore, such important social effect as increasing in active population employment in region through involved investments has not been achieved.

However, the assessment of changes in the economically active employed population, which is observed in the Lviv region during the analyzed period (2000–2013), it is important to accompany by the study of changes in proportion of unemployed, part of which has increased in particular at the period of crisis and overcoming the crisis (2008–2009 and after 2013). The desired the lowest level of unemployment (according to prevailing Strategies of the region development [7]) should be 9,5 % at 2013 and 9,0 % – at 2015, when in fact in Lviv region in 2013 the share of the unemployed (calculated according to the ILO, as % of economically active population in working age) was 8,4 %, which is better than the recommended level of under-mentioned Strategy.

Among the next steps in overcoming the unemployment it should be assessment of the current situation in the region regarding the level of social protection, the study of the distribution of unemployment (according to the State Employment Service) in selected cities and administrative districts, identification of the most problematic issues in these areas and their comparison with existing regional labor market supply.

Under deciding the problems of quality replenishment of the labor market, it should be aware at present that this market needs highly educated, skilled and enterprising professionals, characterized by mobility, dynamic and constructivism. It needs staff who is able to make decisions, to predict future consequences, to tend to self-development. Therefore, investment in training is an urgent problem, and it corresponds the market requirements.

Results of study of the investment lever's use to determine feasibility of targeting *investment in education* are proved the following. Firstly, investment in this part of the social sector in the Lviv region is growing from year to year (an average on 131,3 % over the 2000–2013). This increase of investment in staff training is a prerequisite for the proper functioning of most economic activities. Secondly, found dense and significant correlation between investments in education and rising household incomes at Lviv region (according to data for the 2000–2013), it has been suggested this investment arm to have a direct impact on improving living standards (expressed through the growth of household incomes), and therefore – to the change of one of the most important indicators of socio-economic development of the region.

Dynamics of *household incomes* in region (they increase by average at 132,11 % over the 2000–2013) shows the general trends in the standard of living of the population. At the analysis of the household



incomes structure it is important to identify the main sources of these incomes (for the vast majority of the population of Lviv region it is salary), and to isolate the role of the State in the social politics of the region (an average 30% of the State budget, when it is used locally, today is directed on social assistance, social transfers in natural form and other current transfers).

It is desirable to have not only a general increase in incomes. For the realization of the internal replenishment of fixed capital investment in the region, it is important to have emerged in the population capacity to savings (eg deposits in the banking and credit institutions).

Important *social results* of the investment lever's action in the region should also include the following: improve working conditions, reduce the incidence of workers, changing patterns of production personnel, rational use of natural resources, reduction of harmful emissions of enterprises into the atmosphere, water, land, etc.. Among these social benefits there are important factors determining changes in the ecology of the region. However, the effect of investment leverage in this area is estimated ambiguously.

On the one hand, there is dense connection between increasing of influence of industry on the environment in terms of the emission of harmful substances into the atmosphere from stationary sources of pollution, and between capital investments in environmental protection, also with rational use of natural resources in the region. On the other hand, study of related processes such as increase in industrial production in the region, the overall growth of investment in fixed assets and oth. reveals some key patterns and problems in the development of the region and in its impact on the environment.

First of all, the positive for the Lviv region is quite high average index of industrial production growth at 2000–2013 (118.7 %), which goes ahead of the average growth of harmful emissions into the atmosphere from stationary sources of pollution (100,4 %). Estimated elasticity of connection between these processes for this period indicates the growth of these industrial emissions by average at 0,11 % with an increase in industrial production at 1 %. Among these processes there is a significant linear correlation of moderate density, when 37,2 % increase in emissions is related with the linear grows in industrial production.

Comparison of average growth rate of the Lviv region investments in fixed assets at the 2000–2013 (122,5 %) with the rate of increase in capital investment in environmental protection (127,4 %) shows advantage of the second index over the first. All that gives grounds to assert that administration of this area and local industry are paying constant attention to the maintaining the ecological balance in the region. The elasticity of connection between these volumes of investments in the region is high: an increase on 1 % of the total investment in fixed assets corresponds to increase capital investment in environmental protection at 0,91 %.

However, despite the marked positive trend, increasing of capital investment in environmental protection and rational use of natural resources in the region still do not reduce pressure on the environment reflected through industrial emissions. On the other hand, the elasticity of connection between these processes is low, and it is estimated as 0,099 % of increase in industrial emissions from stationary sources of pollution for each percentage of increase in capital investment for regulating their impact on the region ecology. In the future, it would be desirable to go to the study and forecasting of feedback between these processes, when increasing capital investment in environmental protection and rational use of natural resources in the region will meet the reduction of harmful emissions into the atmosphere from stationary sources of pollution, especially that all the prerequisites for this have been gradually created.

### **Conclusions**

Therefore in this article there are involved both the possibilities and the prospects to improve efficiency of investment in various areas of social and economic development in Lviv region. Additionally there is appreciated how programs and strategies of this region development and its IA promoting correspond to its real state of affairs and caused its necessary changes (considered its perspectives). There are shown both indicators and tools which allow to increase the efficiency of investment in Lviv region through controlling the level of individual indicators and through adjustment of certain tools influence to planned results based on previously identified prospects of socio-economic development.

### Prospects for future research

In future it is planned to focus on research of prospects of development of the most investment-“breakthrough” sectors of the Western Ukraine economy. Those sectors which are able to provide fast and powerful investment return. These sectors can become both a shining example for others and a reliable staging area and tractor for the development of the national economy as a whole.

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