

**Anton MICHÁLEK\*, Ján VÝBOŠŤOK\***

## **ECONOMIC GROWTH, INEQUALITIES AND POVERTY IN SLOVAKIA FROM 2005 TO 2015 (THE ANALYSIS OF RELATIONS AND CONTEXTS AT A REGIONAL LEVEL)**

**Abstract.** Poverty rate is influenced by numerous factors. The determining ones are economic growth and the distribution of its effects. This article is therefore focused on the analysis of these effects and their relationship, as well as their influence on poverty at a regional level (NUTS 3, 'kraj'). For the analysis of interactions between growth and distribution in correlation to poverty reduction, the Bourguignon model (the Poverty-Growth-Inequality triangle) and the growth incidence curve (GIC) were used. It was found that economic growth positively influences income inequalities as well as decreases the share of population under the poverty threshold in all regions. However, the development differs across regions. Based on the development and tendencies of the gross domestic product (GDP), income distribution and poverty it is obvious that economically strong regions (or their populations) dealt better with poverty during the crisis period.

**Keywords:** growth, inequalities, income distribution, poverty; Bourguignon model.

### **1. INTRODUCTION**

European Union member states representatives met in Lisbon in 2000 and agreed to make the EU the most competitive and most dynamic knowledge-based economy in the world, capable of sustainable growth and with a greater number of employment opportunities, as well as enabling better social cohesion. One of the priorities and goals of the cohesion programme is to translate the results of economic growth into the equalisation of differences and inequalities between regions. Despite this admirable goal and its large financial support, it is obvious that both the social cohesion and the regional convergence policy do not achieve the required effects. However, several EU member countries registered an increase of inequali-

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\* Anton MICHÁLEK, Ján VÝBOŠŤOK, Institute of Geography, Slovak Academy of Sciences, Štefánikova 49, 84173 Bratislava, Slovakia, e-mails: [geogami@savba.sk](mailto:geogami@savba.sk); [jan.vybostok@savba.sk](mailto:jan.vybostok@savba.sk)

ties and divergent regional development in recent years. Numerous questions arise related to the choice of proper instruments, the next direction of this policy, and issues related to negative consequences, which create increasing inequalities and divergent development to some regions and segments (sections) of populations.

Important and current issues are related to the growth (deepening) of poverty in some regions and population groups which are significantly influenced by inequality increase. Known and scientifically verified theories and models of economic growth, inequalities and poverty focused on the analysis of their relations, and contexts do not have to be (and are not) generally valid, they are rather spatially different. Therefore, they should be analysed more deeply and researched within individual countries (at a national level) and their regions. This research, and other analyses, are relevant within theoretical contexts and regional development strategies. They identify the impact of economic growth on regional development, the decrease of inequalities, regional disparities, and poverty reduction. The aim of this article is to analyse and research the aforementioned phenomena and their relations. It studies the influence and impact of economic growth and inequalities on poverty and its quantitative expression at a regional level. The intention is to specify the influence, impact and consequences of positive development (growth) of the Slovakian economy on the level of inequalities and subsequently, on the level and depth of poverty, its development, and tendencies.

The empirical intention is to examine the influence and impact of economic development, expressed by the real GDP growth and inequality rate – income inequality to be more precise – on poverty in all eight Slovakian regions ('kraj') from 2005 to 2015. The logical outcome of the analysis is the identification of regions based on the utilisation rate of benefits coming from economic growth. Results and findings of the research on this relation, and quantification of its results (specification of development and changes in growth in particular), inequalities and poverty rates in specific conditions of individual regions, might be, among others, used in regional policy. It would be especially useful in optimization actions and programmes aimed at a better use of Slovakia's economic growth in problematic and stagnant regions where all opportunities which growth offers are under-utilised.

## **2. THEORETICAL BASIS AND METHODOLOGY**

There have now been more than 70 years of key theoretical discourses and empirical verifications within economic science about the influence of (or relation between) economic growth, inequalities, and poverty. This relation is at the centre of attention of both national and world economies, and, at the same time, remains one of the most controversial and most discussed current topics. Economic growth influences all spheres of social life, but it is also a crucial factor influencing income and welfare

distribution. The question is what is its impact on inequalities and whether it can be expressed by a systematic formula. If the answer is positive, then two more important questions arise. The first one is: How does growth influence inequalities in terms of their decrease or speed? The second question is: Is there a regularity or a systematic/development formula that can precisely characterise a relatively complicated relation between growth and inequalities, and include the most significant elements and attributes which influence it? There are two different opinions. The first believes that during an initial period of economic growth poverty rises with inequalities. Later, inequalities stabilise and then fall and poverty decreases. The second one states that at the beginning of economic growth inequalities and poverty fall. Inequalities then stabilise and, at last, they rise, while at the same time, or later, poverty rises.

Many empirical papers, focused on economic growth and its influence on inequalities and poverty, confirmed that tendencies vary across countries (Funke and Strulik, 1999; Ravallion, 2001; Dollar and Kraay, 2002; Adams, 2004; Iradian, 2005; Ravallion, 2005; Tridico, 2010; Khan *et al.*, 2013; Leitner and Stehrer, 2014). The existing knowledge obtained from research and literature shows that answering these questions is of great importance for development strategies, distributional policies, regional development, and especially for poverty reduction. A verified and proven differentiated influence of economic growth and inequalities on poverty and the importance of its examination for poverty reduction and regional development, inspired and led us to study the aforementioned issue (the influence of growth on inequalities and their relation) from a spatial aspect.

A relatively long research period, theoretical discourses and empirical verification of the relation between economic growth and inequalities as well as their influence on poverty, led to the creation of many models which try to theoretically explain and justify empirical facts gained by observing, measuring, and experimenting. Arguably the biggest attention belongs to the Bourguignon model (Bourguignon, 2004) with the so called PGI (Poverty-Growth-Inequality) triangle. It is a valuable and interesting model because it is mainly focused on the interaction between growth and distribution with a connection to poverty reduction. The triangle is based on the hypothesis that in certain conditions, such as the wrong distribution of achieved results (growth effects), large economic growth might represent an inequality increase and therefore a poverty increase as well.

### **3. BOURGUIGNON'S PGI HYPOTHESIS**

In development economics, the PGI triangle refers to the idea that poverty changes might be, or on a large scale are, determined by income level changes and income inequalities. According to the model, a development strategy is based

on income growth (or asset growth) and the decrease of income inequalities. The model can be depicted as a triangle with *poverty*, or its reduction, on the top (Fig. 1). Poverty might be then expressed in several ways depending on the measurement method. *Inequality*, or its distribution, is represented in the bottom left corner and is related to population income differences. *Growth* is located in the bottom right corner and expressed by an aggregated level of population income and economic growth rate (usually GDP growth). The arrows leading to poverty represent these phenomena and their impact on poverty. According to the model, inequalities and growth influence each other and simultaneously influence poverty.

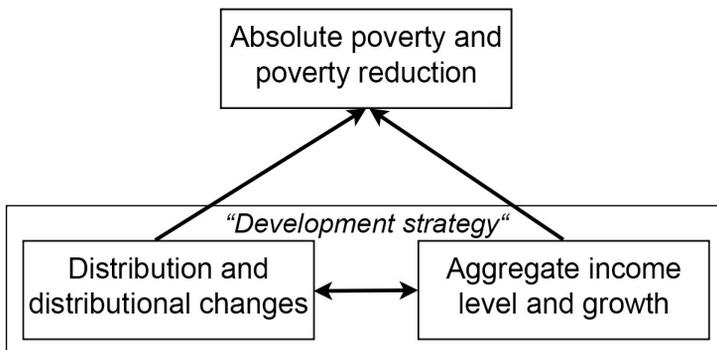


Fig. 1. Bourguignon's triangle

Source: Bourguignon (2004)

Bourguignon defines changes in poverty level as a function of growth and inequality distribution:  
 $\Delta \text{poverty} = F(\text{growth, distribution or changes in distribution}).$

Bourguignon uses income per inhabitant (GDP per capita) as a growth measure and the Gini index as an inequality measure. This model differs from previous ones mainly because it does not regard growth and inequalities as individual poverty factors or isolated phenomena, but observes interactions between them. He considers both phenomena (and their relations) as determinants of a 'development strategy'. He also believes that poverty reduction depends on the combination of policies based on the relation between growth and inequalities. In addition, he claims that a poverty reduction strategy requires the combination of nationwide policies aimed at growth and inequality decrease. According to him, development strategies that put their attention only on one of these phenomena are not able to reduce poverty. The model also shows that a change in income distribution (in favour of decreasing inequality) leads to a greater poverty reduction for a given growth. The consequence of this is that growth policies (not regarding income distribution) will not fulfil the goals of poverty reduction policies.

As is the case with other models, Bourguignon's triangle led to controversy among experts. Critics argue that his model views both phenomena in a fashion that ignores the processes which form them. Other economists claim that the model should include financial instability, crises, and economic cycles and their effects on poverty.<sup>1</sup> Other critics pronounce that the terms 'poverty', 'inequality', and 'growth' are too broad and that all three terms should be viewed from various aspects. For instance, they recommend viewing poverty in the context of individual behaviour (Ferreira, 2012). They also argue that the model's simple nature means that it does not include other principal factors which impact poverty. An interesting opinion states that poverty itself might be considered as a barrier of economic growth which means that the model should consider this alternative as well (Khan *et al.*, 2013). Many experts, not only economists, assume that there is a strong correlation between education, literacy rate, and poverty, and that it is thus necessary to consider these and other aspects of human development (apart from inequalities and growth) when reducing poverty. (Chemli and Smida, 2013). Despite this, in a study which analysed 138 countries, Khan *et al.* (2013) confirmed the basic idea of the Bourguignon model, i.e. the mutual influence of growth and inequalities on poverty.

In addition to the PGI triangle, the so-called GIC was another foundation of our analysis (Fig. 2). GIC captures income increase (or decrease) of every population segment through studied time periods and it visually reflects trends of income changes. At the same time, it allows for the research of interactions between income growth, inequalities, and poverty reduction across a segment of population. Mathematically, the GIC indicates the income growth rate during two time periods for every percentile of income distribution; it compares two dates ( $t - 1$  and  $t$ ), and thus the income growth rate of every quintile. A value of  $p^{\text{th}}$  quintile is therefore expressed as follows:

Let  $p$  be in the interval  $[0,1]$ ;  $g_t(p)$  is an outlined GIC. For example, at the 50%, the value indicates the growth rate of a median income. If there is no change in inequality,  $g_t(p)$  equals an average growth rate of an average income for any  $p$ . If  $g_t(p)$ , for any  $p$ , is a decreasing (or increasing) function for any  $p$ , then all measured inequalities fall (rise) over time and meet the Pigou–Dalton transfer principle. If  $g_t(p) > 0$  (GIC is above 0) for any  $p$ , then a  $t$  distribution prevails the  $t - 1$  distribution. If GIC is above the 0 axis in all positions until a  $p$  percentile, then poverty fell in every indicator until  $p$ . The extent and size of poverty are determined by two factors: growth of the average level of real incomes/assets and inequality rates (income distributions).

GIC as a tool for analysing and assessing the significance and impact of the economic growth process for the poor (the extent to which economic growth af-

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<sup>1</sup> However, it could not be considered a triangle then and it would also lose its main predispositions which are simplicity, lucidity, and a relatively easy construction.

facts the level of poverty reduction) has been successfully applied in many countries. One of the first countries where this instrument was successfully tested was China (Ravallion and Chen, 2001).

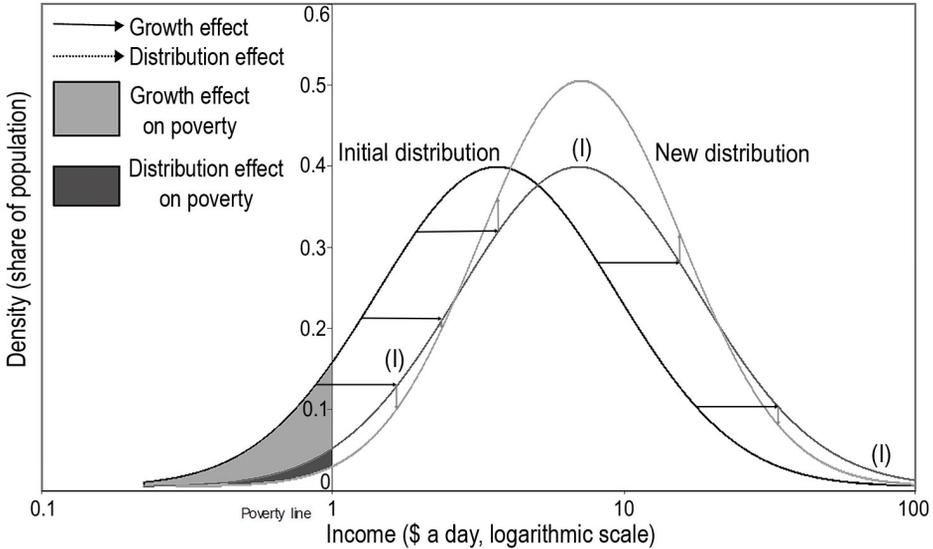


Fig. 2. The influence of growth and distribution effects on poverty changes

Source: Ravallion and Chen (2001)

#### 4. RESEARCH BACKGROUND IN SLOVAKIA

Proving the validity of a chosen model at a regional level requires knowledge of studies focused on the said relation from various aspects. Firstly, the PGI triangle had to be applied to Slovakia's conditions. This was preceded by analyses which aimed to prove the Kuznets hypothesis (Kuznets, 1955) of an 'inverted  $U$ ' curve or the 'opposite' hypothesis of a 'normal  $U$ '. Several researches, supported by specific empirical results of economists, geographers, spatial sociologists, and other researchers, confirmed that despite relatively high economic growth, Slovakia is a country with increasing inequality level, particularly in terms of spatial aspects (Madajová *et al.*, 2014).

The high economic growth in recent years has led to an improvement in many social-economic aspects, including standard of living and quality of life at a national level, but it has been less influential at a regional level. In extreme cases, an excessive inequality rate influenced the growth of poverty, its occurrence, level, and especially depth within regions (Michálek and Veselovská, 2015). This

indicates that the impact of growth and inequalities on poverty in Slovakia also depends on their relationship and it is important and necessary to analyse them at a regional scale. The regional poverty level is not only influenced by global growth and its distribution, but partly by regionally differentiated economic growth and different inequality rates across regions. It is admittedly related to many other facts and is a result of many causalities and factors with different influence and impact. The intention is to expose and identify the current state of regions and to identify their development based on continuous data analysis.

## 5. THE DEVELOPMENT OF GROWTH, INCOME DISTRIBUTION AND POVERTY IN SLOVAKIA

The Slovak Republic belongs to countries with considerably high GDP growth. While GDP was €9,328 per capita in 2005 (in current prices), it reached €14,500 per capita in 2015 (EUROSTAT, 2016). Relatively, the value increased by 54.3%, while the EU-28 average increase was 23.5%. The GDP growth curve in Slovakia may be divided into two parts which represent two development periods. The first part belongs to the pre-crisis period from 2005 to 2008 and is characterised by relatively high GDP growth. During this period values grew by €4,300 per capita (Fig. 3). During the second period (from 2009 to 2015) the development of GDP in Slovakia was significantly influenced by the financial and economic crisis. The first year (2009) after the economic breakdown was the first (and only) time that GDP decreased during the observed period. In the following years GDP was rising again, but at a lower intensity than before the crisis. It is obvious that the development of GDP substantially affected the development of two studied indicators (income distribution and at-risk-of-poverty rate).

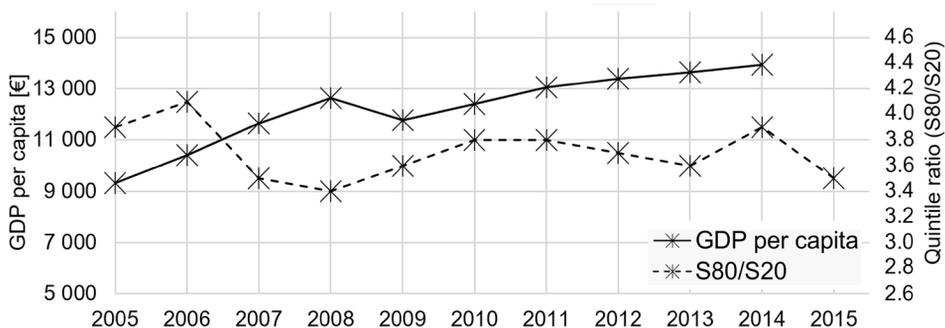


Fig. 3. The development of GDP and income distribution in Slovakia from 2005 to 2015

Source: ŠÚ SR (2016a; 2016b)

The development of economic growth and income distribution inequalities, expressed by top (S80) and bottom (S20) income quintile share ratio, is shown in Fig. 3. In this case three basic tendencies can be observed. A considerable decrease of income inequalities with the lowest value of 3.4 in 2008 is present during the high GDP growth period. On the other hand, inequalities increased heavily during the crisis-affected period (from 2009 to 2011), and reached the value of 3.8. The last period, from 2012 to 2015, is characterised by an income inequality decrease (except for 2014 when the value reached 3.9).

Figure 4 displays the development of economic growth and the share of population living under the poverty threshold. As in the previous case, there are three basic tendencies with a certain delay in comparison to the development of income inequalities. During a high-GDP growth period there was a sharp decrease of people living under the poverty threshold from 13.3% (2005) to 10.5% (2007). The second period begins a year earlier (in 2008) and lasts a year longer compared to the previous indicator. This development period ends in 2012 with the at-risk-of-poverty rate of 13.2%. The last, shorter, period which lasted from 2013 to 2015 is defined by a low decrease of the at-risk-of-poverty rate, when the indicator's value fell to 12.3% in 2015 (ŠÚ SR, 2016a; ŠÚ SR, 2016b).

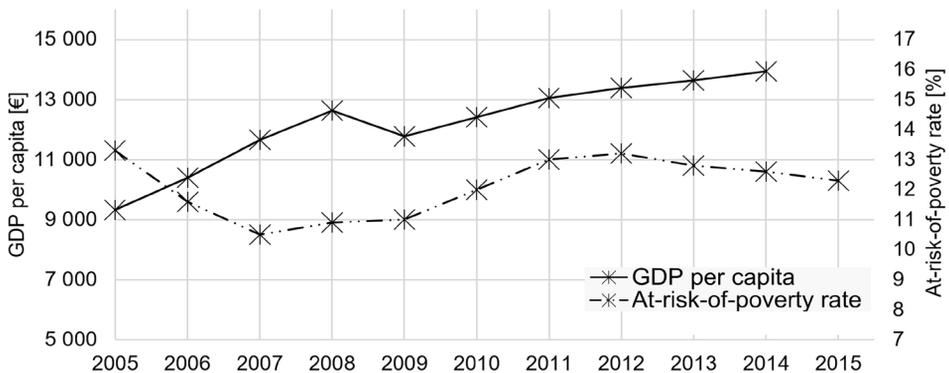


Fig. 4. The development of GDP and at-risk-of-poverty rate in Slovakia from 2005 to 2015

Source: ŠÚ SR (2016a, 2016b)

## 6. THE DEVELOPMENT OF GROWTH AND DISTRIBUTION IN REGIONS AND THEIR COMPARISON

The map (Fig. 5) shows the level and development of regional GDP growth in relative and absolute values within Slovakian regions. Considering absolute values, the lowest GDP growth was, obviously, in the Prešov region. Relatively expressed, the lowest values were in the Košice region with a growth rate of 39%.

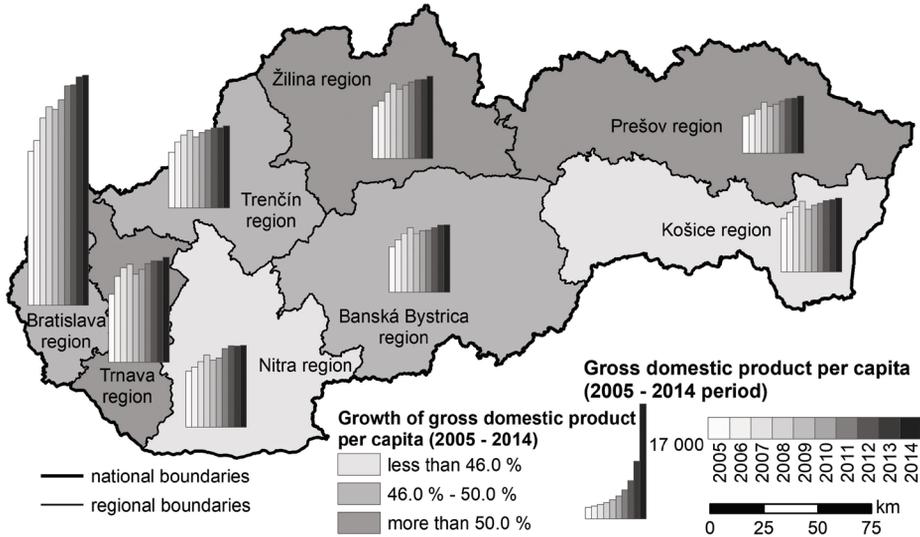


Fig. 5. The development of GDP in Slovakian regions

Source: ŠÚ SR (2016a, 2016b)

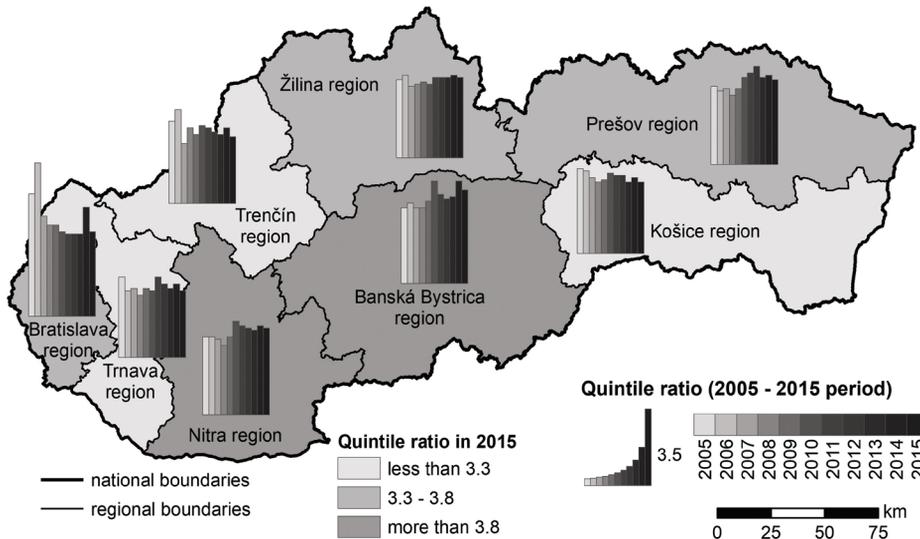


Fig. 6. The level and development of income distribution in Slovakian regions

Source: ŠÚ SR (2016a; 2016b)

Figure 6 illustrates the level and development of income distribution from a regional perspective. Noticeably, the worst (the highest) value of quintile ratio is recorded in the Banská Bystrica region, which reached the value of 4.2. The lowest values were recorded in the Trnava and Trenčín regions (3.0 in both regions). The quintile ratio of poorer regions tended to grow; in richer regions on the other hand, it gravitated towards a decline. The highest absolute value was recorded in the Bratislava region in 2006 where it peaked at 6.9. The lowest value (2.7) was recorded a year later (in 2007) in the Trenčín region.

These maps are properly supported by Fig. 7 to 9 which show the development of regional GDP growth and income distribution. Figure captures the development of these indicators in four regions which mirror the national income distribution and its tendencies. To be more precise, it is the Trenčín (abbreviated to TSK in charts), the Trnava (TTSK), the Žilina (ŽSK), and the Košice region (KSK). Even though the development of these regions has many common traits, individual curves show a few particularities. While in 2007 a considerable decrease of inequalities in the Trenčín region is observed, the equalisation of inequalities in the Košice and the Žilina regions is gradual and the curve is balanced throughout the whole interval. A similar development occurred in the Trnava region where a relatively low value of income quintile share ratio and a rather equal distribution curve throughout the whole period is observed (with the exceptions of 2005, 2008, and 2011).

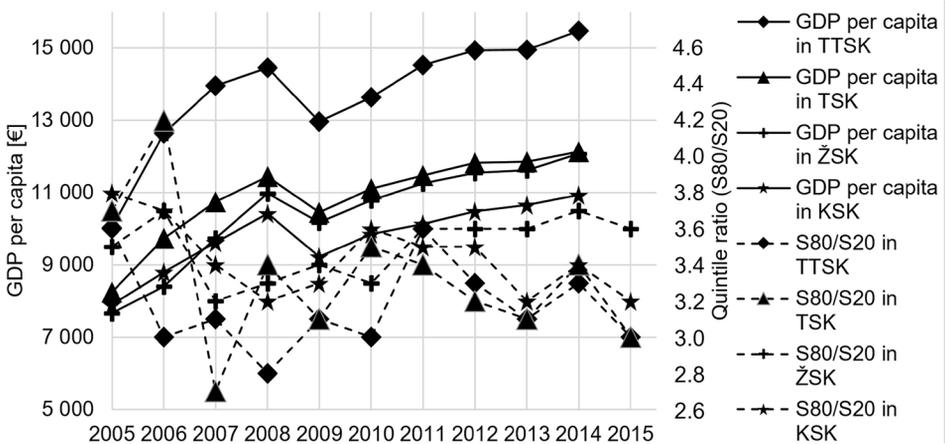


Fig. 7. The development of GDP and income distribution in the first group of four regions from 2005 to 2015

Source: ŠÚ SR (2016a, 2016b)

Figure 8 shows a different tendency in the Nitra (NSK), the Banská Bystrica (BBSK), and the Prešov regions (PSK) – the poorest Slovakian regions. These regions experience slight inequality equalisation until 2008 and its significant deepen-

ing during the crisis; nonetheless, they do not register a reduction of inequalities in recent years, as was the case in previous regions. Instead it seems that the indicators fluctuated significantly. The characteristic features of this recent period have been considerably unequal with high values in all three regions. The highest recorded values were 4.6 in the Banská Bystrica region, 4.4 in the Prešov region, and 4.0 in the Nitra region.

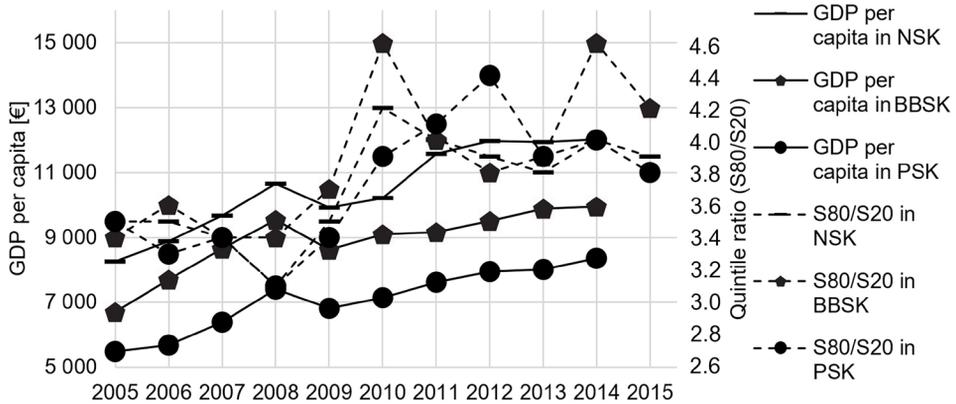


Fig. 8. The development of GDP and income distribution in the second group of three regions from 2005 to 2015

Source: ŠÚ SR (2016a, 2016b)

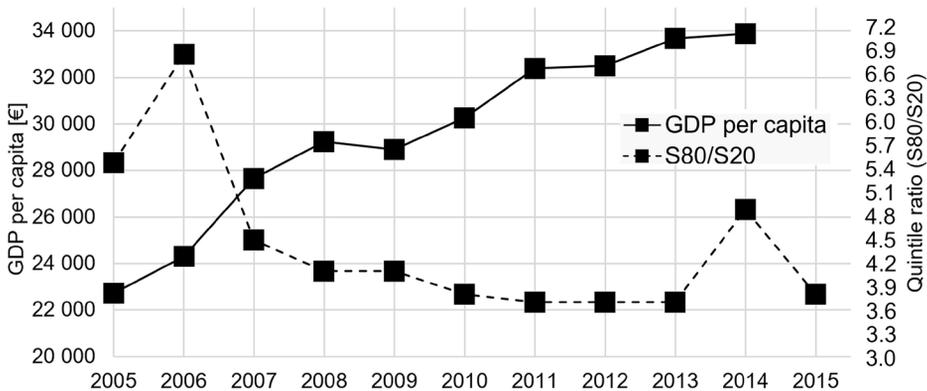


Fig. 9. The development of GDP and income distribution in the Bratislava region from 2005 to 2015

Source: ŠÚ SR (2016a, 2016b)

A specific position belongs to the Bratislava region (Fig. 9), which has recorded a relatively balanced development of income distribution, while its values have been

predominantly decreasing during the observation period. The only exceptions are in 2006 and 2014 when inequalities rose significantly and then immediately dropped. In both years the values were the highest among all regions. The inequality rate was 6.9 in 2006, while in 2014, when values rose nationwide, it reached a surprising value of 4.9. The massive variance with high increases in values in these years, which are noticeably different to the dominant tendency, call for a deeper analysis.

## 7. THE DEVELOPMENT OF GROWTH AND POVERTY IN REGIONS AND THEIR COMPARISON

The level and development of poverty is shown in Fig. 10. It is measured by the share of population which is under the poverty threshold (at-risk-of-poverty). Clearly, the highest (worst) value was registered in the Banská Bystrica and the Prešov regions with a 16.4% share in 2015. The lowest value was recorded in the Bratislava region (only 7.3%).

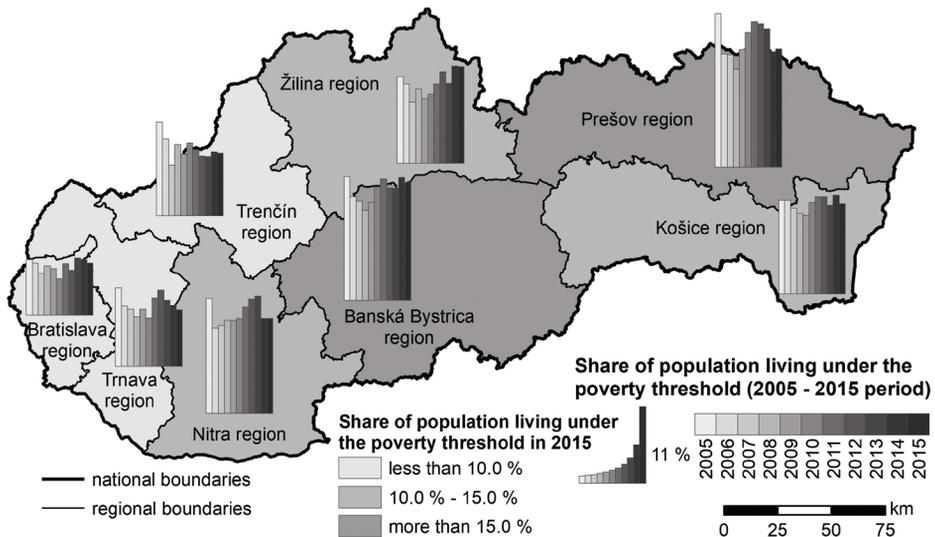


Fig. 10. The level and development of at-risk-of-poverty rate in Slovak regions from 2005 to 2015

Source: ŠÚ SR (2016a, 2016b)

Figures 11 to 13 depict the development of GDP growth and poverty in different regions. The respective visuals and graphs show relatively similar tendencies at both national and regional levels (apart from the Bratislava, the Trenčín, and the Žilina regions). The development, however, has not been the same and

it varies across regions. During the pre-crisis period – a period of notable economic growth, the share of the poor decreased. Later, during the crisis it grew and approximately in 2012 it stopped. Afterwards the share decreased gradually in different manners across the regions. A similar tendency to the national one (with smaller deviations) might be seen in five regions – the Trnava, the Nitra, the Banská Bystrica, the Košice and the Prešov regions (Fig. 11a and 11b).

A few particularities (Fig. 11a) are also visible in the Nitra region, where the share of the poor people fell to 11.8% in 2006 and later gradually rose to 16.3% in 2013. However, in 2014 the share of people living under the poverty threshold declined substantially.

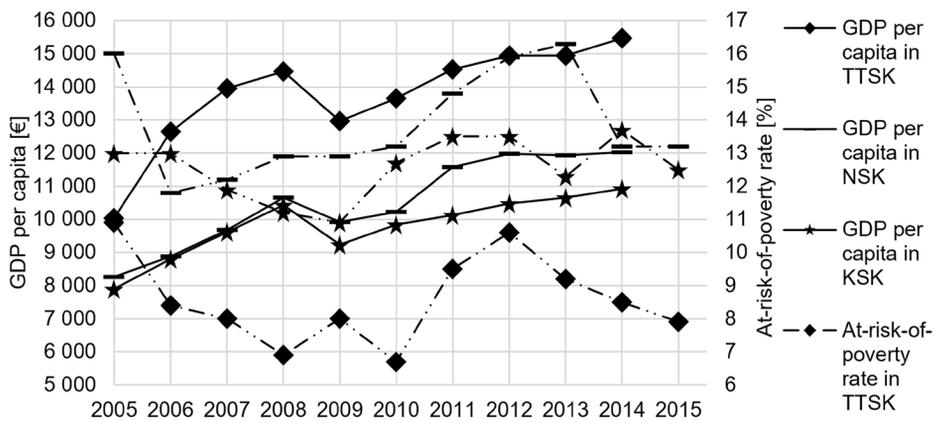


Fig. 11a. The development of GDP and poverty in the first group of five regions from 2005 to 2015  
Source: ŠÚ SR (2016a, 2016b)

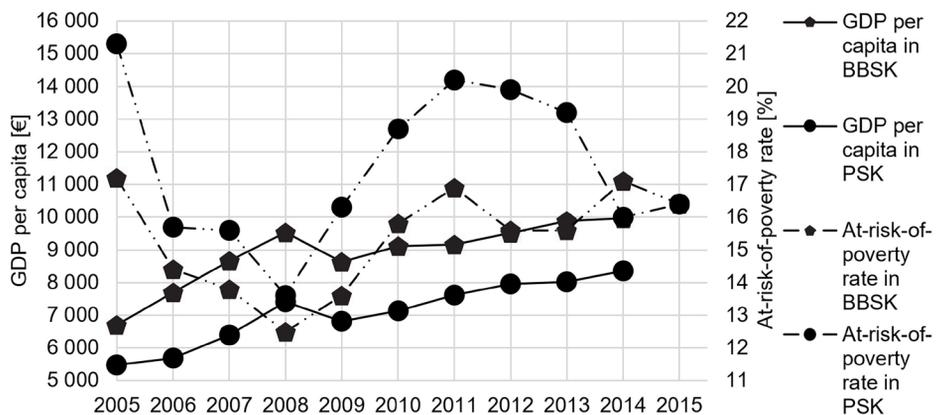


Fig. 11b. The development of GDP and poverty in the first group of five regions from 2005 to 2015  
Source: ŠÚ SR (2016a, 2016b)

A different development pattern was found in the second group of regions, consisting of the Trenčín and the Žilina regions (Fig. 12). The data from the Trenčín region showed that while the number of the poor decreased before the crisis, it rose during the said period and reached a very high value. In the Žilina region, despite a consistent GDP growth, the share of the poor has been increasing constantly since 2009 (except for 2013), and is currently on a relatively high value (13.5%).

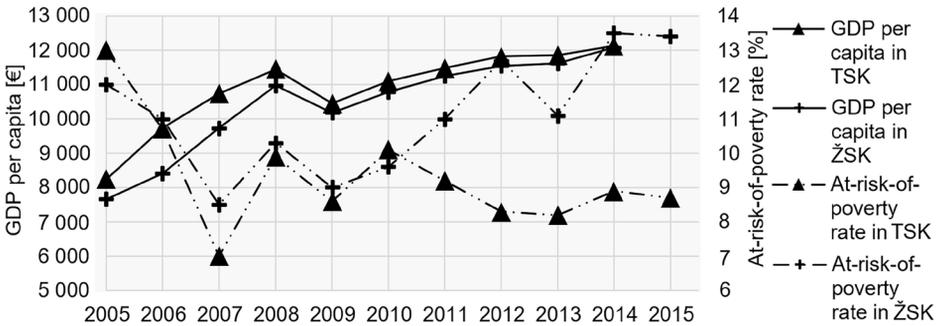


Fig. 12. The development of GDP and poverty in the second group of two regions from 2005 to 2015

Source: ŠÚ SR (2016a, 2016b)

As in the case of previous indicators, a special position belongs to the Bratislava region whose development of the studied indicator is relatively balanced on a long-term basis during the whole studied time period. Considering the course of the curve, it seems that the significant economic growth and the crisis's impact on the reduction (or increase) of poverty are not as evident as in other regions (Fig. 13).

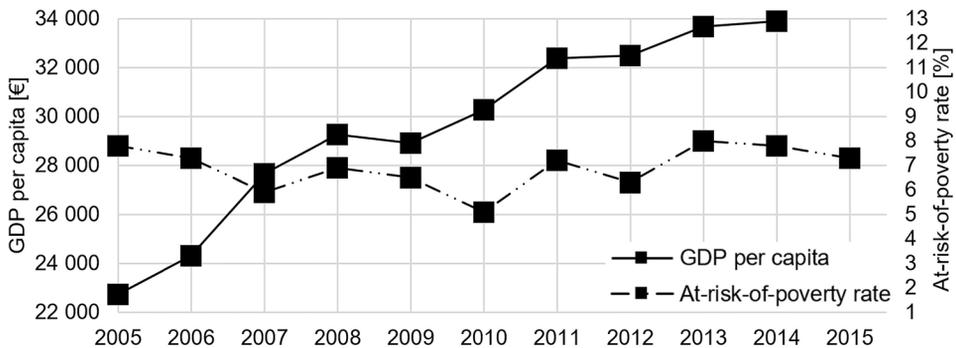


Fig. 13. The development of GDP and poverty in the Bratislava region from 2005 to 2015

Source: ŠÚ SR (2016a, 2016b)

## 8. BOURGUIGNON'S MODEL FOR SLOVAKIA AND ITS REGIONS

This chapter will be focused on income distribution analysis within the conditions of Slovakia and its regions ('kraj') using the GIC. Two regions were chosen for the comparison. Namely, the Bratislava region with the lowest share of population living under the poverty threshold and the Prešov region with the highest measured share in both studied years (2005 and 2015).

During the creation of the visuals below (Fig. 14 to 16), which study the impact of growth on poverty and income distribution, these steps were followed:

1. The X axis serves as the upper interval limit for the monthly disposable income of an individual, obtained from the EU SILC 2005 (X curve) and 2015 (Y curve) surveys. The Z curve serves as the theoretical (hypothetical) 2015 distribution which was defined as a sum of individual data from 2005 and a difference between the poverty threshold data from 2015 and 2005, while the poverty thresholds for both years were highlighted on the X axis;

2. The Y axis is composed of data on the share of people with income in the given interval;

3. Light grey (effect of growth on poverty) and dark grey (effect of growth on income distribution) areas were based on the GIC.

Slovakia's results are depicted in Fig. 14. The behaviour of income distribution curves demonstrates a few cardinal changes in this area. A moderate (more equal) course of the 2015 curve shows, among other things, that the share of people within the middle-income range dropped substantially. For illustration, in 2005 almost one third (30.5%) of the population received a middle income (the top of the blue curve). In 2015 this share dropped to only 18.8% (the top of the red curve). A decrease of 11.7% led to a mild rise in the higher income group share (within the higher income ranges). This was among the reasons why the under-the-poverty threshold population share decreased by 1.0% since 2005.

The effect of growth on poverty (Fig. 14 to 16) is highlighted by the light grey areas. Based on the theoretical distribution in 2015, the population with the lowest income should decrease severely. This phenomenon did occur, however, to an even greater extent. Dark grey areas on the visuals demonstrate the effect of distribution on poverty. It is evident from the graphs that the share of higher income groups has increased in recent years, while the number of people with the lowest income is decreasing. It also seems that incomes are no longer concentrated exclusively within middle income groups.

Figure 15 shows that income distribution in the Bratislava region was much more equal than in Slovakia in both studied years. Simultaneously a lower share (and a lower number) of inhabitants in middle income categories is visible. The highest share, in 2005, was 24.3%, however, in 2015 it decreased by 7.7% to the value of 16.6%. This decrease led to a relatively high increase of high-income,

but especially very-high-income population. This was one of the reasons why the share of people living under the poverty threshold decreased by only 0.5% (from 7.8% to 7.3%) which is only a half of the national average. Therefore, changes in income distribution which occurred in the upper income categories had almost no impact on the poverty rate. Its mild decline was caused almost explicitly by the growth effect (light grey area).

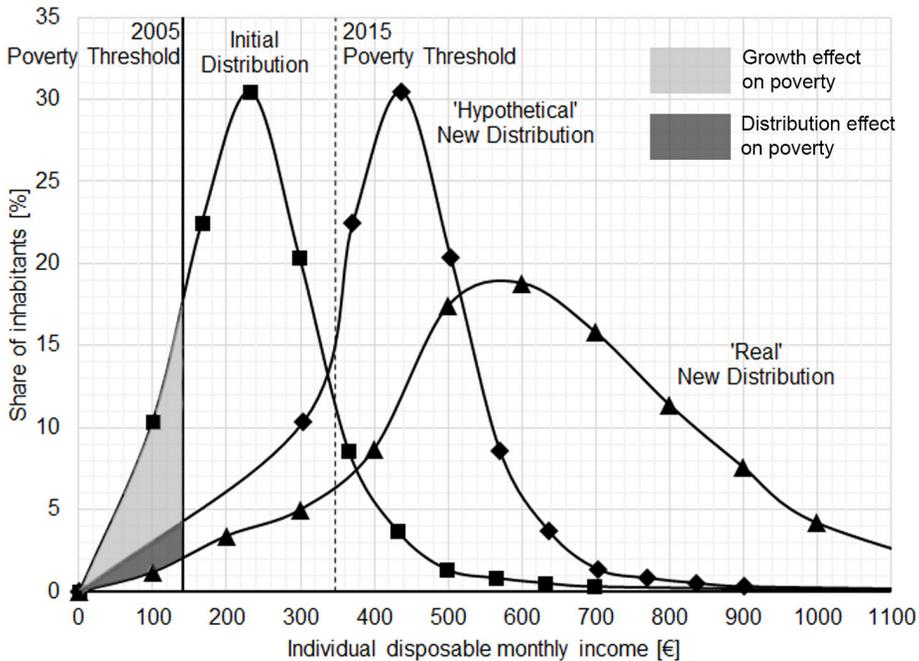


Fig. 14. The changes in income distribution in Slovakia, and the effect of growth and distribution on poverty

Source: ŠÚ SR (2016a, 2016b)

A contrast to the Bratislava region is the Prešov region, the poorest one, characterised by a significant share of lower earning population and a lower share of the richest segment. Figure 16 represents the Prešov region's situation whose typical features are a relatively high share of people with middle income and a low share of higher income groups. Growth, in conjunction with an improved income distribution (decrease of low income groups in favour of middle income categories) which are displayed by shades of grey, determined the amount of poverty reduction in the region. While in 2005 the region represented a territory with the highest poverty rate (21.3%), ten years later the rate was cut by almost 5% to a value of 16.4%, i.e. the same value as in the Banská Bystrica region in 2015.

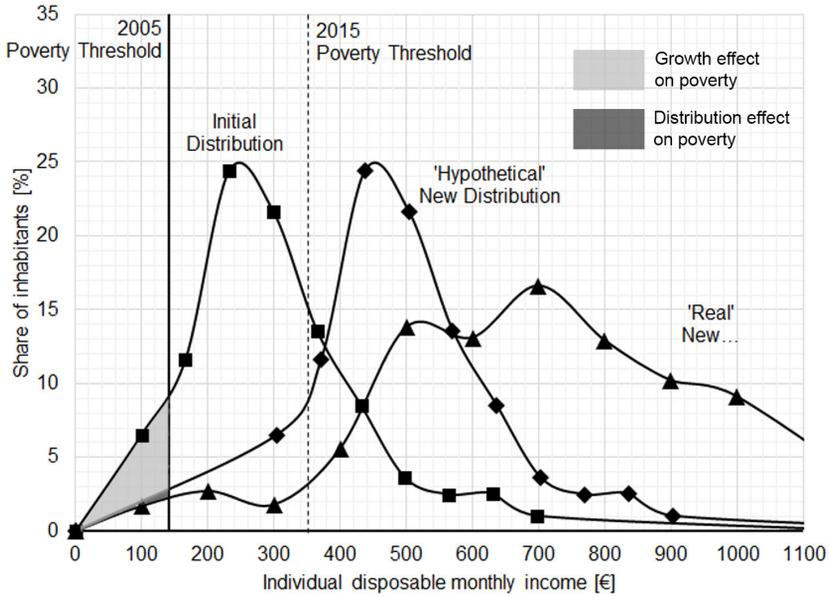


Fig. 15. The changes in income distribution in the Bratislava region and the effect of growth and distribution on poverty

Source: ŠÚ SR (2016a, 2016b)

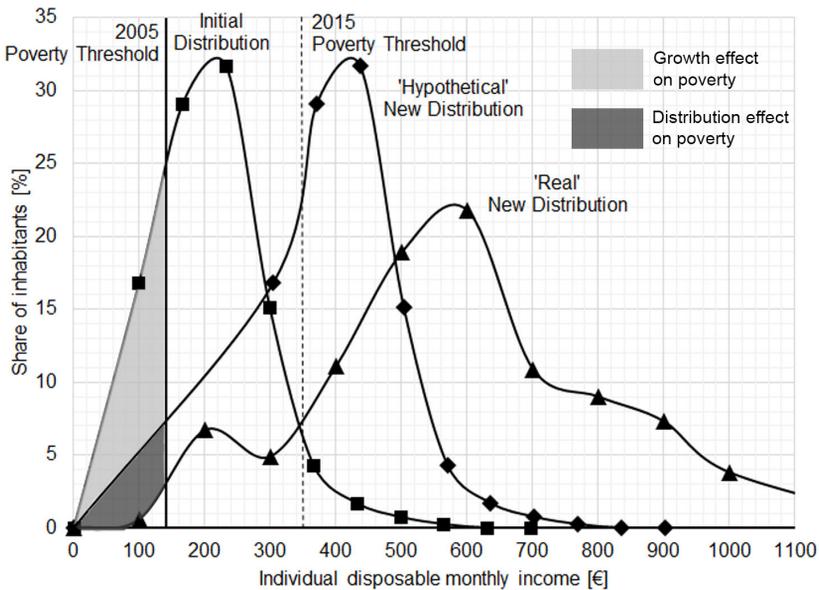


Fig. 16. The changes in income distribution in the Prešov region and the effect of growth and distribution on poverty

Source: ŠÚ SR (2016a, 2016b)

To study the increase/decrease in poverty and inequalities from 2005 to 2015, Fig. 17 was constructed. The data was used to portray the rise (or fall) of the share of poor inhabitants ( $X$  axis), whereas the rise or fall of income distribution is expressed by the quintile ratio ( $Y$  axis). The particularly good state of Western Slovakia is obvious from the chart, except for the Nitra region which recorded a rise in income distribution inequalities during the studied period. The worst position belongs to the Žilina region, which is the only region which registered increases (although in low values) in both the share of at-risk-of-poverty population and income distribution inequalities.

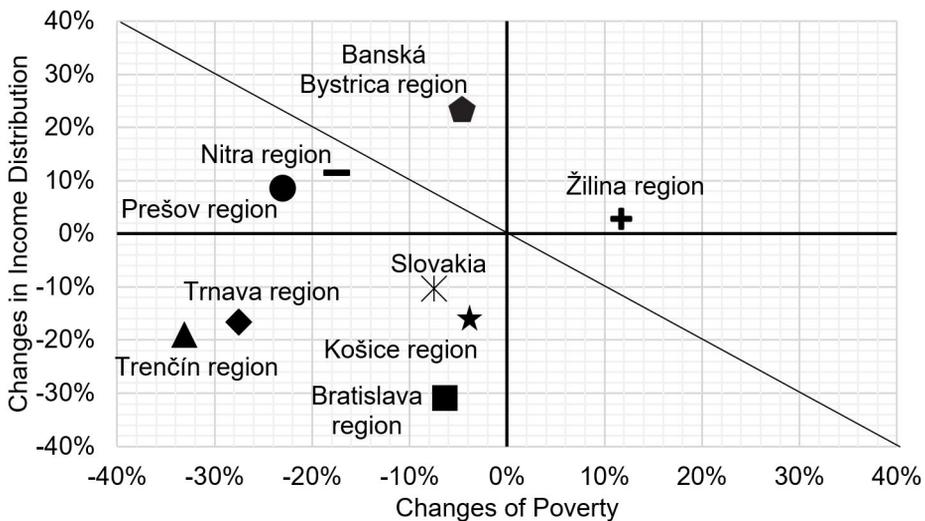


Fig. 17. The interaction between the increase/decrease of poverty and inequalities from 2005 to 2015  
Source: ŠÚ SR (2016b)

## 9. CONCLUSION

The effect of economic growth and inequalities on poverty gave rise to many questions which made this issue an object of study not only for economists, but also for researchers representing different disciplines. The intention of this article was to research the aforementioned relation from the spatial aspect in the context of poverty reduction at regional level ('kraj') of the Slovak republic. The assessment of the current state and tendencies in Slovakia (verification or denial of the Kuznets curve), the application of the Bourguignon model at the regional level and the specification of the effect of growth and distribution on poverty changes within analysed spatial

units, using the GIC, brought many interesting and original results. They provide relevant information about the current state, development, and tendencies of the studied phenomena and their relative relationship within analysed regions. This allows the understanding of the mechanism of a bad (or deteriorating) poverty situation in some regions. In addition, they show a positive impact of growth on income inequalities and decrease in the share of population living under the poverty threshold.

The results demonstrate that the crisis had a stronger impact on poverty than on income distribution. The hypotheses that GDP changes and development tendencies, income distribution, and poverty in regions are different, were confirmed. Based on similar features and development tendencies, there are three types of regions. The Bratislava region, being rather specific, has a different character and development pattern in comparison to the other seven regions. The research also showed that economically strong regions, and their inhabitants, dealt better with the crisis and its impacts (such as income distribution, poverty, etc.).

The gathered data, facts, and knowledge presented in this study cover a relevant part of information about poverty which is directly connected to the main consequences and factors of poverty existence and its levels. These findings might be useful not only to the academic community and decision-makers, but also to regional communities which are affected by poverty. They could be a part of an information database used for decision-making within sectoral, social, and spatial policies. The results of this study indicate that poverty reduction strategies will call for large scale public policies and actions which should not be focused only on growth, but also improve the distribution of its effects. In this sense, the study brings inspiration primarily for regional programmes focused on social cohesion, decrease of inequalities, and poverty reduction in studied regions.

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