EFFICIENCY VERSUS EQUALITY IN REGIONAL DEVELOPMENT POLICY: THE CASE OF ROMANIA

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Raluca Irina CLIPA¹
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Abstract:

Researchers in the field of regional economy but also geographers have long been concerned about the problems caused by uneven regional development and how it can be reduced by appropriate regional policies. Recently, however, the traditional argument of regional policy to reduce the spatial concentration of economic activity in certain regions, in order to achieve economic efficiency and social justice at national level was questioned. The controversy is the fact that regional imbalance, i.e. spatial agglomeration or concentration of economic activity and workers in certain regions, can be effective for the entire nation’s economic performance, generating growth. It follows that policies which seek to reduce regional economic disparities can be ineffective nationwide. This causes a compromise (“trade-off”) of political intervention, between maximizing national growth and minimizing regional inequalities. This idea has attracted the attention and interest of researchers and practitioners, and the success in empirical testing does go beyond the stage of idea, theory came to be known as the “trade-off” of regional policy. The theory holds that regional imbalance expressed by concentrating economic activity and workers in certain particular regions, may be beneficial for national economic performance, generating growth. The paper aims to examine the new “trade-off” theory in Romania, investigating to what extent clusters supported by the industrial policy of the past two decades have led to national economic growth, but at the same time, increased regional inequalities. The authors aim to analyze the spatial concentration of economic activity in Romania and the competitiveness of the eight Romanian development regions (NUTS 2) in terms of clusters’

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performance and correlate the results with national growth and inequality. The period chosen for the study (8 years, between 2006 and 2013) is significant for the proposed analysis, because it overlaps the development in Romania of industrial competitive clusters supporting policy. The analysis uses data from the Eurostat database, Romanian Cluster Association, Regional Competitiveness Index 2013 and mapping clustering studies in Romania. Research limitations are related to the availability of statistical data on the performance of Romanian clusters.

Keywords:

agglomeration, clusters, trade-off theory, regional policy

1. INTRODUCTION

Economic geographers and regional economists have long been concerned about the problems of uneven regional development, seeking answers to the question of why the economic growth process does not lead to similar levels of prosperity, employment and welfare in different regions, but also by how political intervention may be able to reduce such inequalities. But how much regional inequalities can be reduced and how national performance influences it are questions that are still being answered.

Over time, many states have adopted regional policies designed to correct spatial disparities in economic prosperity. For example, in the UK, regional policies were introduced following the recession of 1929-1933 to mitigate and halt the collapse of many industrial areas in the country. Since the establishment of the European Union, regional policy has also been seen as a tool to ensure Member States' economic and social integration, a key target for the Union. Recent studies (Pascariu and Țigănașu, 2017) emphasize the persistence of the center-periphery differences on the two axes, North-South and West-East. In all cases, regardless of the form it has dressed in different countries, in response to economic change or to the tendency of academic and political thinking about the nature of the "regional problem", the issue of regional policy has two arguments: economic efficiency and social equity.

In the first case, persistent regional disparities in economic activity, linked to unemployment rates and different levels of productivity, are inefficient at national level, as under-utilization and low performance of labor and capital in poorer regions lead to lower national performance compared to the other case, the full and productive use of these resources.
Policies aimed at increasing the use and productivity of labor and capital in poorer regions would increase the economic performance of these regions and hence of the nation as a whole. On the other hand, reducing regional disparities can help national economic management. A heavily disequilibrated spatial economy can create problems for monetary and fiscal policies. For example, macroeconomic measures in the direction of the growth of the national economy can lead to oversupply and inflationary pressures in prosperous regions, while in poor areas labor and capital underutilities and lower inflation rates persist. Existence of large differences in inflationary pressure between regions could cause instability in the national economic system. Enforcing rigorous credit control and a high interest rate helps to stop inflationary price hikes in high-activity areas but damages economic activity in poorer areas by the fact that firms here are more affected by increasing costs, restricting investment and reducing their competitiveness on the market.

On the other hand, regional policy can be justified in terms of social equity. Individuals should not be disadvantaged in terms of employment opportunities, living conditions, access to public services and the like, only by the chance to live in a region and not in another. The spatial concentration of economic and social disadvantages can be self-sustaining, leading to the accentuation of poverty, social deprivation, social exclusion, precarious health and others. Programs designed to ensure national prosperity may not be sufficient to alleviate these problems, requiring regional policies specifically designed to improve local economic conditions and opportunities in these areas.

The two arguments mentioned above have been seen to be complementary, even though their relative size varied in regional policy discourse and practice. Ensuring employment rates and higher productivity levels in economically lagging regions can increase not only national efficiency but also the standard of living and well-being in the regions concerned, thus ensuring a spatial equilibrium from the point of view of opportunities and income. This further reduces unemployment and other social problems, thus reducing tax pressure. By improving the skills and qualifications of workers in poorer regions, employment, income, purchasing power and thus local demand can be increased. All this supports the idea that regional policies can be justified both in terms of efficiency and equality.

In recent years, however, the traditional argument of regional policy to reduce the spatial concentration of economic activity in certain regions...
has been questioned. The controversy is that regional imbalances, in other words, spatial agglomeration or concentration of economic activity and workers in particular regions can be effective for the economic performance of the entire nation, generating economic growth. It follows that policies that seek to reduce regional economic inequalities may be inefficient at national level. There is a trade-off of political intervention, between maximizing economic growth and minimizing regional inequalities.

This paper aims to validate the "trade-off" theory in Romania investigating to what extent the clusters supported by the industrial policy of the last decade have led to aggregate economic growth but, at the same time, to the accentuation of regional inequalities. The structure of the paper includes: literature review of existing studies on economic agglomerations and "trade-off" theory of regional policy, study area and methods, analysis and discussion and conclusions. To some extent, we believe that financial connections can also be made (Boulescu et al., 2009; Dascalu et al., 2009). The main hypotheses of the study are: economic agglomerations lead to economic growth; economic agglomerations expand regional inequalities; there is a compromise between equity and efficiency in regional development policy.

2. LITERATURE REVIEW

The idea inserted above drew the attention and interest of the researchers (Martin, 2008, Gardiner et al., 2010) and practitioners (World Bank, 2009), and attempts and successes in empirical testing (Gardiner et al., 2010) beyond the idea, becoming known as the trade-off theory of regional policy. But what is the origin of this new theory in regional science?

Looking back over time, we find concern over the national efficiency vs. spatial equity dispute in the field of economic geography (Dall'erba and Hewings, 2003), the economic theory (Kuznets, 1955, Williamson, 1965, Okun, 1975) and the new geography (NGE) (Martin, 1999; Puga, 1999; Baldwin et al., 2003). The latter were attracted by the political implications of the NGE models. Also in the NGE sphere, Henderson (2003), Baldwin and Martin (2004), Glaeser (2008), Florida (2009) and others bring arguments supporting the impact of industrial or urban agglomerations to stimulate economic growth, innovation and productivity. Moreover, the fact that agglomerations can lead to economic growth is one of the key implications in NGE models (Baldwin et al., 2003).
The new economic geography argues that the geographic structure of an economy is modeled by the tensions between the centripetal forces, which together "pull" the economic activity towards the center and the centrifugal forces that "push" it out into the periphery. In NGE models, agglomeration forces (imperfect competition, rising yields, factor mobility) tend to dominate dispersion (high transport costs, restricted mobility, congestion) (Clipa et al., 2011). When agglomeration increases, regional disparities are amplified, thus there is a positive relationship between crowding and regional income inequality, the crowded location attracting new firms and workers in search of high productivity.

On the other hand, spatial agglomeration leads to an increase in economic growth at national level (Clipa et al., 2012). According to the arguments of the endogenous growth theory, when there are positive externalities in a given location, the spatial concentration of economic activity has a beneficial effect on innovation by reducing its costs, leading to productivity gains and attracting new firms and workers within the agglomeration (Bostan et al., 2016). Here is a positive relationship between the degree of spatial agglomeration in the national economy and the national economic growth rate.

At the same time, the theory postulates that high rates of innovation lead to an increase in the entry of new firms on the market, which compete with existing firms, thus lowering profit rates. The latter translates into negative externalities and has the effect of reducing regional income disparities between the richer and poorest regions.

By combining the macroeconomic aspects of industrial policies with the regional aspects of the industrial agglomeration economy, researchers (Martin, 1999; Baldwin et al., 2003, Lackenbauer and Meyer, 2006, Gardiner et al., 2010) developed a macroeconomic model analyzing the interdependencies between inequalities regional agglomerations and economic growth. In the model, the balance implies a level of balance of congestion, regional inequality and nationwide growth. If the government seeks to reduce regional inequality through interventions such as resource reallocation and dispersal of economic activity in space, or through redistributive monetary and fiscal measures, spatial agglomeration and the regional inequality index are reduced. This is due to the transfer of purchasing power to the poorer regions, increasing demand and attracting new firms to these locations. However, as the decline in cluster translates into innovation and positive externalities induced by lower agglomeration, the economic growth rate is also reduced. This results in a trade-off...
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(Gardiner et al., 2010) between regional equality and national economic growth.

We note that previous papers focused mainly on the theoretical analysis of the existing compromise between fairness and efficiency in the development of regional policy. Instead, our study seeks to evaluate the new theory in Romania’s space, this being an untapped niche.

3. STUDY AREA AND METHODS

The authors propose to correlate the development of economic agglomerations in the 8 Romanian development regions (NUTS 2) with the evolution of aggregate economic growth and regional inequality in Romania over a period of 8 years (2006-2013). The timeframe chosen for the study is significant for the proposed analysis, since it overlaps the development of a policy of supporting competitive industrial agglomerations in Romania.

Regional economic growth is expressed by the evolution of GDP per capita in the timeframe chosen for study, in absolute terms as well as % of the EU28 average, using the Eurostat database.

In order to analyse the regional disparities, different variables should be taken into account simultaneously. A statistical technique that meets the needs of multi-dimensional comparison is the relative distance method that combines different classification criteria in establishing a hierarchy. The economic criteria used to measure disparities should be synthetic, relevant for analysis and comparable in space (such as, for example, per capita values). Thus, we have selected two economic variables relevant to measuring regional development, ie GDP per capita and monthly net average income.

Therefore, the Composite index of regional disparities (Rdi) is calculated according to the GDP/capita and average monthly income, i.e. the multicriterial distance in relation with the national average for the territorial unit i (formula 1). The data reflect the overall picture of disparities among regions, the upraunit values indicating a favourable situation, while the subunit ones signal a falling behind the national average.

\[ R_{di} = \frac{\text{GDP/capita}_i}{\text{GDP/capita}} \times \frac{I_{c, i}}{I_{c}} \]  

\( Ic_i \) - Average monthly net income per capita for the territorial unit \( i \)

\( \overline{Ic} \) - National average of monthly net income per capita

\( GDP/capita_i \) - Gross domestic product per capita for the territorial unit \( i \)

\( GDP/capita \) - National average of Gross domestic product per capita

Another instrument to understanding of territorial competitiveness at the regional level is Regional competitiveness index, calculated starting with 2010 from three to three years, a weighted composite measure of multiple dimensions. Each dimension, that cannot be directly observed, is indirectly quantified by a set of indicators, statistically assessed and aggregated. There are different eleven dimensions which are aggregated into three sub-indices of competiveness (basic, efficiency and innovation) and an overall composite index. In order to estimate the development of economic agglomerations we considered the innovation sub-index of Regional Competitiveness Index calculated in 2010 and 2013, for the reason that the level of innovative capability influences the ways in which technology is diffused within a region. Research has shown that knowledge production is highly geographically concentrated. Feldman (1993) suggests that firms producing innovations tend to locate in areas with resources and that resources accumulate due to a region’s success with innovations. The indicators within the innovation dimension include, among others, patent applications, knowledge workers, scientific publications, human resources in science and technology and (the strength of) high-tech clusters (Annoni and Dijkstra, 2013).

Moreover, a recent study (Bere et. al) evidenced that the growth poles at country level generate a greater GDP per capita than the overall national level, which highlights that the second-tier cities as growth poles actually contribute to increasing the GDP per capita at national levels.

4. ANALYSIS AND DISCUSSION

At regional level, economic growth is estimating using gross domestic product per inhabitant, absolute and as % of the EU28 average. For the period 2006-2013, we notice in the table 1 an increase of GDP/inhabitant for all Romanian regions. As it can be seen in table 2, gross domestic product expressed in PPS per inhabitant, in % of the EU28
average increased along the period analysed for all NUTS 2 Romanian regions.

In the Table 1 we can observe the gap between the 8 Romanian regions. The distance between the poorer region (North-East) and the richest one (București – Ilfov) in growing in terms of regional gross domestic product expressed in PPS per inhabitant during the period 2006-2013, from 15.200 $ to 24.900 $.

**Table 1.** Regional gross domestic product (PPS per inhabitant) by NUTS 2 regions

<table>
<thead>
<tr>
<th>geo\time</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>North-West</td>
<td>8700</td>
<td>10300</td>
<td>11100</td>
<td>10800</td>
<td>11200</td>
<td>11400</td>
<td>12500</td>
<td>12500</td>
</tr>
<tr>
<td>Centre</td>
<td>9100</td>
<td>10700</td>
<td>11800</td>
<td>11500</td>
<td>12100</td>
<td>12400</td>
<td>13800</td>
<td>13500</td>
</tr>
<tr>
<td>North-East</td>
<td>5900</td>
<td>6700</td>
<td>7600</td>
<td>7400</td>
<td>7700</td>
<td>7800</td>
<td>9000</td>
<td>9000</td>
</tr>
<tr>
<td>South-East</td>
<td>7900</td>
<td>8700</td>
<td>9800</td>
<td>9500</td>
<td>10300</td>
<td>10700</td>
<td>12300</td>
<td>13000</td>
</tr>
<tr>
<td>South-Muntenia</td>
<td>7700</td>
<td>8700</td>
<td>10100</td>
<td>10100</td>
<td>10400</td>
<td>10800</td>
<td>11000</td>
<td>11400</td>
</tr>
<tr>
<td>Bucharest-Ifov</td>
<td>21100</td>
<td>25200</td>
<td>31800</td>
<td>28300</td>
<td>30700</td>
<td>34300</td>
<td>33400</td>
<td>33900</td>
</tr>
<tr>
<td>South-West</td>
<td>7200</td>
<td>8200</td>
<td>9200</td>
<td>9000</td>
<td>9600</td>
<td>10100</td>
<td>10800</td>
<td>10700</td>
</tr>
<tr>
<td>Oltenia</td>
<td>10500</td>
<td>12000</td>
<td>13800</td>
<td>13200</td>
<td>14200</td>
<td>14700</td>
<td>15400</td>
<td>15100</td>
</tr>
</tbody>
</table>

Source: Eurostat

**Table 2.** Regional gross domestic product (PPS per inhabitant in % of the EU28 average) by NUTS 2 regions

<table>
<thead>
<tr>
<th>geo\time</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>North-West</td>
<td>36</td>
<td>40</td>
<td>43</td>
<td>44</td>
<td>44</td>
<td>44</td>
<td>47</td>
<td>47</td>
</tr>
<tr>
<td>Centre</td>
<td>37</td>
<td>41</td>
<td>45</td>
<td>47</td>
<td>47</td>
<td>47</td>
<td>52</td>
<td>51</td>
</tr>
<tr>
<td>North-East</td>
<td>24</td>
<td>26</td>
<td>29</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>South-East</td>
<td>32</td>
<td>34</td>
<td>38</td>
<td>39</td>
<td>40</td>
<td>41</td>
<td>46</td>
<td>49</td>
</tr>
<tr>
<td>South-Muntenia</td>
<td>31</td>
<td>33</td>
<td>39</td>
<td>41</td>
<td>41</td>
<td>42</td>
<td>43</td>
<td>43</td>
</tr>
<tr>
<td>Bucharest-Ifov</td>
<td>86</td>
<td>97</td>
<td>122</td>
<td>116</td>
<td>121</td>
<td>131</td>
<td>126</td>
<td>127</td>
</tr>
<tr>
<td>South-West</td>
<td>29</td>
<td>32</td>
<td>36</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>41</td>
<td>40</td>
</tr>
<tr>
<td>Oltenia</td>
<td>43</td>
<td>47</td>
<td>53</td>
<td>54</td>
<td>56</td>
<td>56</td>
<td>58</td>
<td>56</td>
</tr>
</tbody>
</table>

Source: Eurostat

Tabel 2 shows regional gross domestic product expressed in PPS per inhabitant, determined as % of the EU28 average by NUTS 2 regions. As we see, the gap between the weakest (North-East) and the strongest (Bucharest-Ifov) regions increased from 62% in 2006 to 93% at the end of the analysis period.
The composite index of regional disparities \((D_i)\) calculated according to the GDP/capita and average monthly income (formula 1) is presented in Table 3.

<table>
<thead>
<tr>
<th>geo \ time</th>
<th>Composite index of regional disparities</th>
<th>Dynamics of composite index</th>
</tr>
</thead>
<tbody>
<tr>
<td>North-West</td>
<td>0,8957</td>
<td>0,8433</td>
</tr>
<tr>
<td>Centre</td>
<td>0,9398</td>
<td>0,9274</td>
</tr>
<tr>
<td>North-East</td>
<td>0,7513</td>
<td>0,7106</td>
</tr>
<tr>
<td>South-East</td>
<td>0,8818</td>
<td>0,8358</td>
</tr>
<tr>
<td>South-Muntenia</td>
<td>0,8677</td>
<td>0,8779</td>
</tr>
<tr>
<td>Bucharest-Ifov</td>
<td>1,6310</td>
<td>1,8479</td>
</tr>
<tr>
<td>South-West Oltenia</td>
<td>0,8650</td>
<td>0,8573</td>
</tr>
<tr>
<td>West</td>
<td>1,0074</td>
<td>1,0396</td>
</tr>
</tbody>
</table>

Source: authors’ calculations, using data of National Prognosis Commission

Regional classifications were made in relation to national averages in 2006 and 2013, to highlight the trend recorded during this period. It is noticed a stability of extreme positions, the first two places being occupied by the Bucharest-Ifov and Western regions, while the North-Eastern region remains the last one in the ranking. Four of the Romanian regions improved their situation regarding the dynamics of composite index, but the others experienced a worsening. The most important observation is that the distance between the extreme positions widened in the range studied, from 0.8797 (87.97% from national average) to 1.1373 (113.73%), which means an increasing of regional disparities.

According to the Regional Competitiveness Index calculated for 2013, in Romania there is a fairly large gap between the capital region and the Northwest region, the next one in the ranking of competitiveness. At all three components of the composite index (basic, efficiency and innovation), the Romanian regions were below the European average. The Bucharest-Ifov region has high scores in this area, but it is surrounded by regions with much poorer results (Clipa and Ifrim, 2016).

**Table 4:** Regional disparities in the competitiveness index, by NUTS 2 regions, 2013, Romania

<table>
<thead>
<tr>
<th>RCI 2013</th>
<th>Basic competitiveness sub-index</th>
<th>Efficiency sub-index</th>
<th>Innovation sub-index</th>
</tr>
</thead>
</table>

In a single Romanian region (Bucharest-Ilfov), the sub-index innovation shows better scores than the general competitiveness index, which is explained by the fact that the activity of agglomerations was more important in this area (as shown in Table 4).

**Table 5:** Regional disparities in innovation sub-index, Romania, NUTS 2, 2010 and 2013

<table>
<thead>
<tr>
<th></th>
<th>Sub-indexul inovare 2010</th>
<th>Sub-indexul inovare 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>North-West</td>
<td>-1.25</td>
<td>-1.49</td>
</tr>
<tr>
<td>Centre</td>
<td>-1.22</td>
<td>-1.6</td>
</tr>
<tr>
<td>North-East</td>
<td>-1.41</td>
<td>-1.74</td>
</tr>
<tr>
<td>South-East</td>
<td>-1.45</td>
<td>-1.7</td>
</tr>
<tr>
<td>South-Muntenia</td>
<td>-1.32</td>
<td>-1.71</td>
</tr>
<tr>
<td>Bucharest-Ilfov</td>
<td>-0.422</td>
<td>-0.16</td>
</tr>
<tr>
<td>South-West Oltenia</td>
<td>-1.43</td>
<td>-1.62</td>
</tr>
<tr>
<td>West</td>
<td>-1.09</td>
<td>-1.38</td>
</tr>
</tbody>
</table>

Source: Eurostat

Analyzing the period 2010-2013, we can see that Bucharest-Ilfov is also the region with an improvement in the innovation sub-index score (Table 5), from -0.422 at the beginning of the period to -0.16 at the end of the period.
CONCLUSIONS

The findings for Romania validate the hypotheses of the study. Agglomerations lead to economic growth, especially in regions (Bucharest – Ilfov) with intense agglomeration activity, expressed by the high score of innovation sub-index of Regional Competitiveness Index. During the period analyzed the distance between the poorer region (North-East) and the richest one (Bucharest – Ilfov) grew in terms of regional gross domestic product expressed in PPS per inhabitant. That leads to a “trade-off” of political intervention, between maximizing national growth and minimizing regional inequalities.

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