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MODEL FOR REGIONAL COMPETITIVENESS EVALUATION FOR ROMANIA

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Abstract: *The paper propose a model for regional competitiveness evaluation, which takes into account the following indicators determined by region and sector development CANE:Active Local Units/Total Population [number of units/persons]; Local Units/Total Population [RON million current prices/persons]; Investments of Active Local Units/Total Population [RON million currentprices/persons]; Staff of Active Local Units/Total Population.*
Key words:*regional competitiveness, evaluation, utility*

1. INTRODUCTION

Regional competitiveness (RC) addresses both the measurement of regional performance through regional statistics and indicators using various Regional Database and policies to address key factors that can improve the competitiveness of regions. Regional competitiveness is a key theme in the national territorial reviews, in work on urban policy and on rural development.

Regional competitiveness is the capacity of one region to generate, in a durable manner and in conditions of competition, a level of income and a sustainable growth of theliving standard. On the other hand, regional competitiveness depends on the productivity and accessibility of markets, on the level of workforces' qualification and on the institutional factors like social capital for entrepreneurial culture to encourage cooperation and initiative and contribute at efficiency for public administration.

2. METHODS OF QUANTIFYING RC

Some of the previous researches (Martin, 2006), were based on comparative and regression analysis, across a wide set of primarily micro- economic indicatorsOf the work on regional competitiveness, that is empirically driven, there are two distinguishable approaches: studies that analyse regional competitiveness as a cumulative outcome of factors; studies that focus on a particular driver of competitiveness. The empirical section lists the driving factors that have been used in previous studies to explain regional performance. The breakdown of GDP per capita into constituent parts relation (1) provides an initial set of output indicators, each of which can be explained in terms of its own set of drivers. On the other hand, GDP per head, provides an, albeit incomplete, indicator of the average well-being of the population. For analytical purposes this can be decomposed in elements presented in relation (1):

$$\frac{GDP}{P} = \frac{GDP}{THW} \cdot \frac{THW}{E} \cdot \frac{E}{WAP} \cdot \frac{WAP}{P} \quad (1)$$

Where:GDP/THW – Productivity; THW/E– Work – Leisure; E/WAP – Employment Rate; WAP/P Dependency Rate; GDP – Gross Domestic Product; THW – Total Hours Worked; E – Employment; WAP - Working Age Population.

Some interrelation is likely between these indicators, e.g. highly productive regions using skilled labour may well also display high rates of employment. However, regional productivity – measured as GDP per hour worked – is seen as the primary motor of improved regional GDP per head.

The most highly-structured approach (Martin, 2006), uses a growth accounting framework with human capital added to labour and physical capital as factors driving economic growth. The total (or multi-) factor productivity (TFP) residual in the account is then associated empirically with changes in knowledge and other variables.

The growth-accounting specification is based on a Solow balanced growth path model. The strong assumption base for such work may be exemplified by hypothesising that regional production satisfies a Cobb-Douglas aggregate production function which displays constant returns to scale with exogenous technical improvement, viz. (relation 2):

$$Y_t = k_t^{\propto} H_t^{\beta} (Z_t L_t)^{1-\alpha-\beta} \quad (2)$$

where K_t is physical capital, H_t is human capital, L_t is labour and Z_t is technological improvement enhancing the productivity of labour. Z_t is assumed to accumulate as aby-product of economic activity but, unlike consumption, investment and capitaldepreciation, does not use up current output.

Using lower case letters to indicate per labour input quantities gives the productivity measure, output per labour input, as relation (3):

$$y_t = Z_t^{1-\propto-\beta} k_t^{\propto} h_t^{\beta} \quad (3)$$

Output is allocated to the following uses relation (4):

$$Y_t = C_t + dK_t + \delta_K K_t + dH_t + \delta_H H_t \quad (4)$$

where C_t is consumption, and ™K and ™H are rates of depreciation for physical, K_t , and human, H_t, capital respectively. If L_t grows at rate n in the long run, then the balanced growth paths for physical capital, and human capital output per labour input respectively are derived as:

$$g_k = \frac{dk_t}{k_t} = s_k\, y_t - (\delta_k + n) k_t \quad (5)$$

$$g_k = \frac{dh_t}{h_t} = s_h y - (\delta_h + n) h_t \quad (6)$$

The outcome is a log difference form where productivity change may be obtained as the difference between output change and the weighted rates of change of physical and human capital. The residual defining exogenous technical improvement is then:

$$logZ_t - logZ_0 = (logy_t - logy_0) - \\ -\alpha(logk_t - logk_0) - \beta(logh_t - logh_0) \quad (7)$$

Under Cobb-Douglas assumptions, α and β would be the monetary shares of returns to physical and human capital in the regional accounts. In the empirical work reported below these are allowed to be freely determined. Estimating this equation using perannum average rate of growth allows some comparison to be made with the following Barro approach (Barro, 1995).

The Barro specification is an alternative that is more flexible, less data-demanding and can also be used both to assess the drivers of average productivity change and to test for convergence in such productivity across EU member state and the candidate stateregions. This approach is also derived from the neoclassical tradition, where, assuming constant technical progress across regions, one can derive the Barro regression form as:

$$\left(\frac{1}{T}\right) ln\left(\frac{Y_r^t}{Y_r^0}\right) = \beta_0 - \left[\frac{(1-e^{-\beta T})}{T}\right] lnY_r^0 + \lambda x \qquad (8)$$

where the average annual growth rate of productivity1 in region r from year 0 to t, over T years, is related to the initial level of productivity. β_0 is the steady state rate of technical progress, usually assumed constant across all regions and β is the rate of convergence per year in productivity (Martin, 2006).

3. DATA AND METHODOLOGY

The concept of regional competitiveness tries to measure the level of economic prosperity of the regions. Thus, it is proposed a model that correlates regional development to the development determinants. It has been analyzed the CANE sections of the regions taking into account the following indicators that we consider representative for regional competitiveness: active local units from industry, construction, trade and other services, by development region, activity of national economy at level of CANE section; turnover of active local units from industry, construction, trade and other services, by development region, activity of national economy at level of CANE section; investments of active local units from industry, construction, trade and other services, by development region, activity of national economy at level of CANE section; staff of active local units from industry, construction, trade and other services, by development region, activity of national economy at level of CANE section, where staff mean average number of employed persons = total number of persons salaried and not salaried) who worked in the enterprise during the reference period, including temporarily transferred staff (who works outside it), paid by the enterprise (Negru-Strauti, 2008).

After the statistic were taken data from Romanian Statistical Yearbook (***, 2007), (***, 2008) it has been determined the values which can reflect more accurate the regional development potential.

It has been taken in account the differences concerning the area and population. Therefore the statistic data were processed with the number of population for each region. It has been used the utility theory to interpolate the values we obtain; in the end we get a value for utility from 0 to 1 at each section and region.

Finally it has been distinguished a hierarchy of the Romanian development regions from the point of view of regional competitiveness.

There were defined the following indicators:

I_1- Active Local Units/Total Population [number of units/persons]; I_2 - Local Units/Total Population [RON million current prices/persons]; I_3 - Investments of Active Local Units/Total Population [RON million currentprices/persons]; I_4- Staff of Active Local Units/Total Population.

The equation for utilities calculation is shown in relation (10):

$$U_{ij} = \sum_{j=1}^{n} \gamma_j U_{ij} \qquad (9)$$

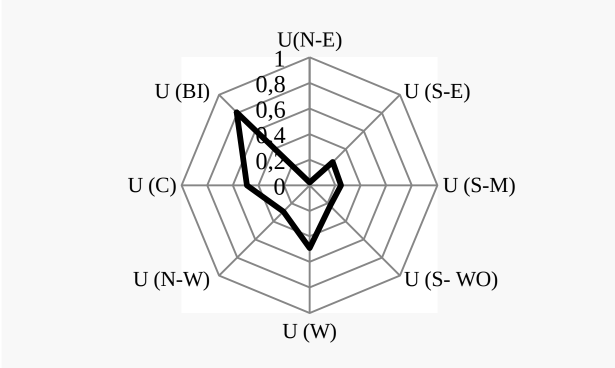

Fig.1. Evaluation of regional competitiveness for Romania

All these utilities were calculated based on the following CAEN sections: Mining and Quarrying, Manufacturing, Electric and Thermal Energy, Gas and Water, Construction, Wholesale and Retail, Hotels and Restaurants, Transport, Storage and communications, Real Estate Transactions, Renting and Service Activities mainly rendered to Enterprises, Education and Health and Social Assistance.

The values for global utility are as follows:U (N-E) =0.022; U (S-E) =0.257; U (S-M) = 0.246; U (S- WO) = 0.229 4;U (W) =0.491; U (N-W) = 0.290 6; U (C) 0.489 7; U (BI) = 0.806.

The results are presented in figure 1.

4. CONCLUSION

The objective of this research has been reached by designing a more affordable model, which still provide full information on the assessment of regional competitiveness and could be correlated with previous researches.

The variety of conditions and the local abilities represent the “gross material” for development that must generate value through public policies and business strategies.

Based on the obtained results it has been appreciate which are the development regions with high competitiveness. Also it has been determined which regions have potential and who are in a critical situation from this point of view.

It can be concluded that regional development must be seen from the point of view of different business practices that favor some mentalities, some better conditions in certainregions.

This study recognizes the existing of different practices concerning regional business initiatives, but the capacity of starting up of prosperous business can be use with success in any region.

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