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Abstract: *The territory affects how economic systems work, geographic proximity being a primary source of economic and social benefits. Generally speaking, territorial development is minimal determined by exogenous factors, while the main factors that influence the potential of local development are: endowment, resources, human and social capital, accessibility, infrastructure etc. These factors can be found in the regional growth theory which, by its scientific nature, is assimilated with macroeconomic theory.*
New economic geography emphasizes the importance of these factors, which focus on the lower production costs. At the same time, technological change and diffusion of technologies are considered endogenous variables which react to the market signals. Positive externalities are produced by using technological investment, employment and income redistribution in society. Research development, entrepreneurial skills, local production, innovation, knowledge, learning networks etc. are considered to be the engine of economic growth.
In this paper, there are presented the main theoretical approaches of endogenous growth, which have contributed to understanding the implications and the effects of this process upon regional development.

Keywords: regional endogenous growth, new economic geography, endogenous factors

JEL classification: R1, R10, R11

1.   Introduction

In general, understanding the relevant factors of economic development represents core of the economic analyses. The neoclassical theory tries to explain the process of growth through constant scale profits, competition and the mobility of production factors (labour, capital); the growth achieved on long- term, under the conditions of a free market, determines the achievements of territorial income per capita.

Reconsidering the role of territorial level in empirical analyses regarding the benefits and costs, the location has become the focus of many studies and research. Recently, we assist to amplification of the role played by regions in national and global context.

New economic geography is based on variables combination between geographical and economic factors. These combinations regard different approaches related to regional growth theory which has added the knowledge, innovation and economies of scale. This has led to decreasing importance of distances from one market to another (played by transport costs) and the market size.

Regional theoretical approaches assess the impact of transport costs on spatial distribution. Transport costs were considered real barriers to business (Krugman; Venables, 1993), their appearance being determined by physical causes, institutional arrangements (trade and fiscal policies) or cultural differences. As a rule, the regional clusters and scale economies are influenced by the emergent decisions of geographical concentration of production and the interaction of internal and external forces.

Economic integration affected, in its turn, the phasing out of trade barriers, the industries concentration and territorial revenues; the gradual reduction of trade constraints triggers the processes of agglomeration, mutually reinforcing (self-reinforcing), resulting the trends of activities concentration (Ascani, Crescenzi, Lammarino, 2012).

The economic integration emphasizes the market competition which influences the geographical distribution of production. Achieving a high level of economic integration is not a simple act; there are a lot of economic barriers such as: tariffs and quotas, rules, different cultures and languages, etc. (Krugman, Venables, 1990). Therefore, the complete economic integration, also, includes a large number of non-economic elements.

From theoretical approaches perspective, we can identify the processes that could lead to spatial concentration or dispersion of economic activities and, also, the way it reaches the steady status between certain processes. This can help regions to understand how their economies have emerged and how they might change over time.

2. Specific factors of endogenous regional development

Regional development represents the effect of internal and external economic forces, in different proportions. According to the theory of regional economic growth, the impact factors are grouped, as follows:

- Exogenous factors – these factors do not influence local context, and are transferred in fortuitous or deliberate manner (for example, the presence of multinational companies in the area, the installation of an infrastructure decided by external authority);
- Endogenous factors - appear and develop within the area, leading to a process of self-development (examples: entrepreneurial skills, local production, quality of local actors/institutions, innovation, knowledge, learning networks, the advantages of physical proximity, etc.).

The dominance of these forces (exogenous or endogenous) has led to the emergence of regional models and has supported the development of new visions. Thus, if in the 90's, the development of neoclassical theory had represented more than the result of some external force (growth of income per capita was dependent on savings rate and exogenous shocks), we are witnesses, in present, to a new type of approach based in particular (but not exclusively) on internal forces and their own capabilities development.

Also, known as the endogenous growth theory, the new approach is driven by scale economies (at national or regional level). The systematic analysis through explicit dynamic models was made prominent by Solow's famous paper (1956); he was following up and clarifying the earlier work, especially of Roy Harrod and Evsey Domar. He allowed for a wide variety of aggregate production functions and assumed both a fixed savings rate and an exogenously given rate of Hicks-neutral technological growth. Although the basic approach became widespread almost immediately, a number of economists felt both of these last assumptions were limiting. Some stressed the alternative assumption that the savings rate was itself rationally determined, to optimize some function of present and future consumptions. This led to the theory of optimal economic growth. Others were concerned that technological change was itself the result of economic and other decisions, not to be taken as exogenously given, leading to endogenous growth theory.

Considering the studies developed by Kenneth Arrow (1962), Uzawa (1965), Sidrauski (1967), Romer (1986), Lucas (1988) and Rebelo (1991), the process of economic growth is mainly due to investments in human capital, which causes a spillover and capital accumulation. In this process, the next resources are involved:

- natural resources: land, water, climate etc.;
- human resources: knowledge, experience and expertise, specialisation;
- material resources: roads, canals, irrigation systems, schools, hospitals, etc;
- economic resources: the market of goods, of food, work, property, credit system, prices, etc.;
- social resources: ethnic organizations, households, social institutions, leadership, decision-making mode, etc.;

- cultural and spiritual resources: rules, rituals, festivals, art, language, lifestyle, etc.

Endogenous growth promotes the idea that the process of economic development is, primarily, the result of the investment in human capital, innovation and knowledge (Romer, 1994). Positive externalities and the effects of knowledge distribution determine, to a very large scale, economic development. At the same time, political measures have a very important role in promoting long-term economic growth (for example, the subsidies earmarked for research and development, education, innovation etc.).

The endogenous regional growth processes involve the interest of specialists from various fields (economic, social, geographical, etc.). From the first attempts regarding the endogenous character of technologies (Romer, 1990) and of human capital (Lucas, 1985, 1988), we are witnessing, at present, to the emergence of regional concepts under the great umbrella of endogenous growth theory (Stimson R, 2009): innovative regions (Saxenian, 1994), knowledge regions (Simmie, 1997), innovation regional systems, new industrial spaces (Scott, 1988), competitive advantages (Porter, 1990) and the new economic geography (Krugman, 1991).

Recent contributions to the regional economy are considered endogenous problems of regional economic development (Nijkamp, Capello, Vanclay, Krugman, etc.).

At regional level, the endogenous development factors are:
• technical progress generates economic development - Rees (1979), Malecki (1991);
• the diversity of industry (Henderson, Kuncoro, McCann);
• the regional specialization - an important factor that explains the differences between levels of performance (Hanushek, Kimko, 2000; Goetz and Rapasingla, 2001);
• the agglomeration economies (Taylor, Ara, Gane, 2002; Duranton and Puga, 2000).

Additional factors of endogenous regional development are:
• leadership - Judd and Parkinson (1990); Bryson and Crosby (1992); Fosler (1992); Hansen (1992); Fairholm (1994); de Santis and Stough (1999);
• strategies/policies/institutions - Doig and Hargrove (1987); Gray (1989); North (1990); Fukuyama (1996); Putman (1993); Svara and Mouritzen (2000);
• entrepreneurship - Schumpeter (1934); Kirzner (1973); Acs (1999); Jessop (1998); Acs, Audretsch, Braunerhjelm and Carlsson (2004); Audretsch and Kreilbach (2004); High (2004); Stough, Kulkarni and Paelinck (2004).

One of the most known models that assess the factors which underline the endogenous development at regional level is Stimson-Stough-Salazar Model (Figure 1).

Variabile independente generale

Variabile de intervenție

Variabile dependente

Efecte directe

Resurse naturale (RN)
Condiții de piață (CP)

Relații dinamice ce acționează pentru a realiza cataliza necesară dezvoltării regionale

Competitivitate
Antreprenoriat
Sustenabilitate

Efecte indirecte

Măsoară și evaluează schimbarea în timp
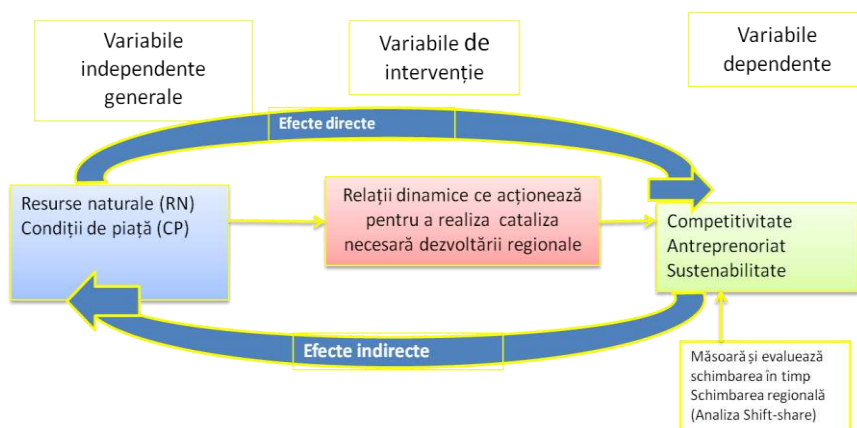Schimbarea regională (Analiza Shift-share)

Figure 1: Stimson-Stough-Salazar Model
Source: Aroca, P., Stimson, Stough (2011).

The endogenous potential factors at regional level can be grouped into four important categories:
(a) The endogenous factors specific to the East EU regions, being presented by the specialized literature in the form of driving forces (driving elements). In particular, the location on the border of the EU-15 and the presence of capital cities has been interpreted as support of the regional differentiated growth. The location next to the EU-15 has generated a higher market potential, while the presence of the capital-cities has represented the main economic and social assets, necessary for the growth pattern in these regions.
b) From the perspective of new economic growth model, an important role is played by knowledge and innovation (well-established in the economic theory). The factors bounded directly by the accumulation of knowledge and innovation have become the main sources of growth (Lucas, 1998, Bronzini, Alok, 2009). Also, the presence of FDI has been interpreted as an external source of innovation (Barrell and Pain, 1997).
(c) The third group of factors referring to the presence of the physical infrastructure and accessibility are interpreted as pre-conditions for obtaining the knowledge and information. Even when the knowledge and innovative process was accomplished, it cannot be replicated with the same intensity in another place/area. The accumulation of knowledge is strongly rooted and anchored in the characteristics of the economic, social, cultural and institutional process, thus some areas have a more an innovative character pronounced than others.
d) The fourth group of factors consists of the presence of certain sectorial components which explain regional growth (Perloff et al., 1960). Changing the sectorial structures may represent an important explanatory element, in particular, for new regions of the EU.
At present, the sustainability of regional development strategies is considered essential, and becomes even a more important territorial approach, from the perspective of endogenous factors.
An important element of regional performance is the internal ability of each region to develop.

Over the past decade, the interpretation of endogenous regional capacity has led to a change of paradigm (Figure 2):

- from the classical development factors to the innovative ones (Nijkamp, 1986);
- from the hard-factors to the soft or intangible factors (Becattini, 1990);
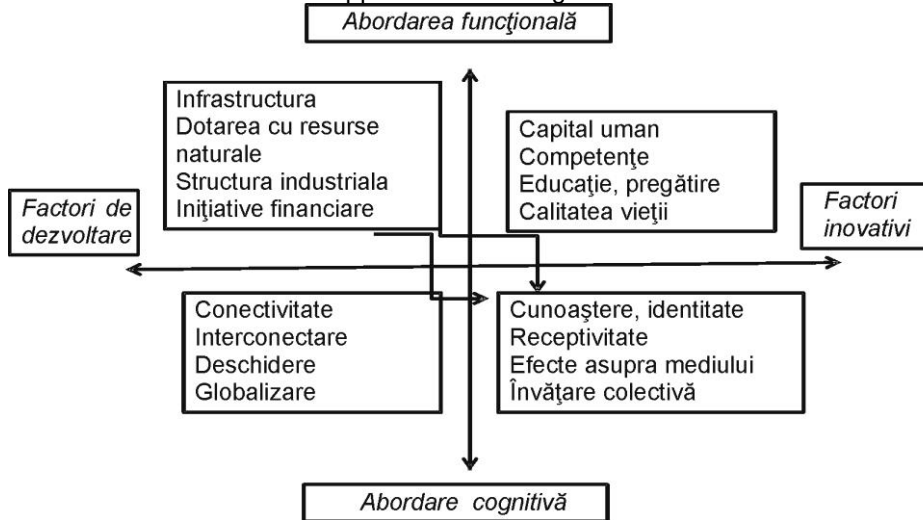- from the functional approach to the cognitive one.

Figure 2: Changes of paradigm in the regional development
Source: own processing

The recent studies aim to explain the implications of global financial crisis, and try to capture the catalytic effect of innovation and creativity which generate knowledge (Nijkamp). Furthermore, they try to identify the skills required for capturing the ideas and the innovations necessary to support a modern regional economy.

The critics regarding endogenous development are determined by the failure in explaining the hypothesis of conditional convergence, the reduction in capital gains and the explanation the divergences regarding the regions/countries income, at global level.

The implications of the endogenous growth theory take place in political context (market competition, open markets, promoting research and innovation etc.). Also, economic policies that promote market protection may lead, in time, to a slower growth process. Long-term growth process represents a process of continuous transformation of economies (Howitt P, 2005).

3. The main models of endogenous regional development

As a result of the major changes that occurred at global level, the theory of regional development had a rapid expansion, after the 1970s (the economic downturn had triggered the crisis phenomena in all industrialized countries etc.).

The theory of endogenous growth at regional level has two major components, namely:

• the selective autarchy - an action that aims to meet the regions needs as part of a whole territory, starting from the adoption of an appropriate economic policy implemented at the local level;
• the capitalisation of the strategic territorial advantages – assuming the development of products for which the region has a favorable market position, regardless of the political or economic requirements.

A model of endogenous regional development must be able to guarantee the autonomy of the process (and his sustainability), built on local characteristics/resources and which manages the fundamental variables.

The main endogenous development strategies are:
· the '50s – infrastructure development;
· the '60s - emphasis on attracting external activities and industrial export etc.;
· the '70s – increase of the SME s role and local workforce skills;
· the '80s - diffusion of innovation and technology;
· the '90s - knowledge, intangible factors, local culture;
· after 2000 - to the "relational capital", collective knowledge, interconnections, the territorial capital.

The new theoretical and practical approaches regarding the regional development have in the spotlight the following: rapid technological change, innovation, research, education, agglomerations and externalities, knowledge, entrepreneurship diversification and sectorial specialization etc.

The endogenous growth theory is heavily influenced by practical analyses on regional growth, policies and spatial development strategies and the actual economic processes: the trends of convergence/divergence at Member State level, the spatial polarization of incomes and the growing role of knowledge etc.

The endogenous growth theory is based on two important approaches (Howitt, 1998):

a) the accumulation of human capital represents a an engine of economic growth, and education is a critical force that generates progress; also, education and specialisation of human capital contribute to the differences in labour productivity (Lucas, 1988);

b) the second approach emphasizes the role of the human capital in the process of innovation. According to this approach, inventions can be considered the result of research and development activity and they have an essential contribution in the process of economic growth (Romer, 1990).

The first generation of endogenous growth models had predicted the convergence clubs based on the effect of the most important factors of production – innovation (Azariadis and Stachurski, 2006). Specifically, in these models, the aggregate function of production is associated with the effects of the capital accumulation and with the long-term dependency, compared with initial conditions (Funke and Niebuhr, 2005, Basile, 2008, 2009).

Other endogenous growth models are based on the total factor productivity, assuming that innovation leads to productivity growth by creating a new products (not necessarily improved) (Romer, 1990). One of the versions of these models is

the Schumpeter model, developed by Howitt (1992, 1998), and called the creative destruction process.

A key aspect of all the endogenous growth models is that the technologies create the contagion effects due to the nature of their non-rivalry and partially excludable goods.

According to endogenous growth theory, every economy is considered an island, and the regional economies have greater openness than the national economy and they faster interact one with another. The endogenous growth models should explicitly take into account the interactions between regions.

A special place in the regional literature is taken by the externalities. The models of endogenous growth allow international mobility, international trade and dissemination of knowledge, and have important implications on the integration and convergence.

The theoretical contributions of New Economic Geography that promote the endogenous growth models are, also, important. They are given by the mixture of economic growth models, in order to increase the interaction between regional analysis and the process of economic concentration (Baldwin, Martin, 2004). In this context, it can be mentioned the contribution of knowledge to capital development and innovation is a collateral cross-temporal effect (Romer, 1990). These endogenous growth models have important implications on regional policy.

Conclusions

The theory of endogenous regional growth is a result of the interaction of local processes, management and control of resources.

This model of growth is considered the effect of the collective action of public and private sector, in an attempt to meet the demands of local communities (the development of better services, promotion of local market, development of human resources and financial management, development of entrepreneurial initiative and environmental protection etc.).

In terms of local resources mobilization, the endogenous development is a continuous process of valorisation the strategic advantages.

The endogenous development strategy aims to reduce the dependence on external factors and ensure a greater autonomy in use of local resources.

Endogenous regional development becomes, thus, an important subject of recent territorial studies and analyses which refer to the global crisis.

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