other firms through strong inter-industry linkages. This view of the growth process leads naturally to another key idea in growth pole literature of an industrial complex in which the expansion of a dominant industry sets in motion a process of development sustained by a very high super-multiplier. Firms operating in such a complex grow quickly because of alleged advantages such as economies in investment expenditure – relative to what would be required for scattered development – proximity to markets and supplies, larger and more diversified labour markets, rapid diffusion of technological innovation and the benefits of specialization and the organization of common managerial and infrastructure facilities (Moore 1974, 1019–1020). The genesis of the growth pole idea was mainly in economic space, rather than geographic space, although geographical agglomeration was not excluded (Perroux 1950). A shift in emphasis from economic to geographic space soon came, however. Hirschman in 1958 noted that "an economy to lift itself to higher income levels should first develop within itself one or several regional centers of economic strength." He referred to growth poles as centers. Boudeville defined a growth pole as a town or city with a complex of propulsive industries. From the beginning, growth pole theorists have held that economic growth originated in interindustry, multiplier and accelerator linkages. In particular cost reductions due to productivity gains, innovations and other types of knowledge, and scale economies are viewed as providing the opportunities for propulsive industries to initiate growth and to pass growth impulses through the linkage chains. A second growth path is the local multiplier effect derived from local income expansion. However the linkage aspect has received the most attention (Campbell 1974, 43). Perroux emphasized that a leading industry induces the phenomena of growth on affected industries through interindustry linkages. If interindustry linkages are deemphasized in growth pole theory other processes must be stressed like impacts of rising employment and improving wage levels generated by an expanding industry which may serve as stimuli for growth in other industries. Service sectors may be dependent upon such intraregional income growth to support their expansion.

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1.0 Introduction

The main author of growth poles theory, created in the 1950s, was Francois Perroux (1903–1987). The key and the most important theoretical foundation of the whole concept was Perroux´s argument which explains the procedure of economic growth in the following way: "It is a blunt and indisputable fact that growth is not uniform in different places but growth has different degrees of intensity in different point, or poles, and then it spreads via channels and its final result for the state economy is different in different regions" (Vystoupil, 2003). He was concerned with the phenomenon of economic development and with the process of structural change.

According to growth poles theory the *propulsive pole is a business unit* (a company, industry) or a set of these units and these units are the main force of the economic development as they generate growth through the impact of strong input-output linkages (Adamčík, 2002). All other industries, which lack the strong character, are called *propelled*. To summarize, in this theory the economic development of a regions depends on the intensity of the propulsive industries on the propelled.

This classification then creates polarization of space. Perroux also identified the terms *dominant region* which is the region where poles of development are concentrated, and *dominated region* which is a region where side poles are concentrated and which develop economic activities affected by the demand from dominant region were labor comes from (Vystoupil, 2003).

He attempted to explain how modern process of economic growth deviated from the stationary conception of equilibrium growth. His arguments were based on Schumpeter's theories of the role of innovations and large-scale firms.

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References

Campbell J. (1974) A note on growth poles, Growth and Change Volume 5,
Issue 2, April. 3. Chien S., Yang M. (2007), The Tianjin Binhai new area as China's next growth pole, EAI Background Brief No. 331.

Christofakis M., Papadaskalopoulos A. (2011), The growth poles strategy in regional planning: the recent experience of Greece, Theoretical and Empirical Researches in Urban Management Volume 6 Issue 2 / May.

Doloreux D., Dionne S. (2008), Is regional innovation system development possible in peripheral regions? Some evidence from the case of La Pocatiére, Canada, Entrepreneurship & Regional Development, 20, MAY, 259–283.

Ganstho M. (2008), Cities as growth poles: implications for rural development, Annual meetings seminar held in Maputo, Mozambique.

Hansen N. (1990), Innovative regional milieu, small firms, and regional development: evidence from Mediterranean France, The Annals of Regional Science, Springer-Verlag.

Heijman W. (2009), Modern Location Theory of the Firm [w:] Space and Economics, Wageningen, the Netherlands.

Higgins B. (1983), From Growth Poles to Systems of Interactions in Space, Growth and Change, 14: pp. 3–13.

Hite A.B. (2004), Natural Resource growth poles and frontier urbanization In Latin America, Studies in Comparative International Development, Fall 2004, Vol. 39, No. 3, pp. 50–75.

McCann P., van Oort F. (2009), Theories of agglomeration and regional economic growth: a historical review [in:] R. Capello, P. Nijkamp, Handbook of regional growth and development theories.

McKee D.L. (1987), On Services and Growth Poles in Advanced Economies, The Service Industries Journal, Vol. 7, No. 2, April 1987, pp. 165–75.

Miyoshi T. (1997), Success and failures associated with growth poles strategy, http:// miyotchi.tripod.com/dissert.htm, January 2013.

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being directed to the developing regions (e.g. the south of Italy) to start the development of these problematic regions (Blazek and Uhlíř, 2002).

2.1 Contributions of the Theory

These observations do not object, according to Vystoupil (2003), to the theory as a whole but mean to show the possibility of exceptions. The same author then proposes that in spite of certain drawbacks the theory of growth poles makes several contributions:

- it uncovers inequalities in the economy of a country (region) and focuses our attention to the propulsive and propelled units,
- it offers a dynamic image of the economy in the country (region) which is based on a general tendency to spatial focus of manufacturing facilities on an interregional level,
- it presents a basis for careful decentralization by supporting the creation of new development poles (focused decentralization or decentralized focus).

2.2 Criticism of the Theory

The results, however, fell behind expectations with the reasons for this failure being (according to Blazek, 2008):

- Failing to differentiate between natural and artificial growth pole or between a spontaneously created center and an attempt to affect the center from the outside,
- Implementation of the concept vary in different contexts - these being (a) neglected regions, (b) cities to moderate the process of suburbanization as well as (c) achieving the modification of urban structure,
- Underestimation of the critical amount of initial investment to create new growth center,

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2.0 The Growth Pole Theory

Perroux's theory is based on Schumpeterian theory of development and theory of inter-industry linkages and industrial interdependence. According to him, "Growth does not appear everywhere and all at once, it appears in points or development poles, with variable intensities, it spreads along diverse channels and with varying terminal effects to the whole of the economy". It is related to Perroux's idea of an economic space as a field of forces consisting of centres, "from which centrifugal forces emanate and to which centripetal forces are attracted. Each centre, being a centre of attraction and repulsion, has its proper field which is set in the field of other centres."

Growth poles theory thus documents the contribution of polarization to the development of poles as well as peripheries and this theory identifies 4 basic types of polarization (Adamčík, 2002):

- **Technological and technical** - based on the concentration of new technology in the growth pole,
- **Income** - the growth pole contributes to the concentration and the growth of income due to expansion of services and dependence on demand and profit,
- **Psychological** based on the optimistic anticipation of future demand in the propelled region,
- **Geographical** based on the concentration of economic activity in a geographically determined space.

This theory reached the height of its popularity in the 1950s and 1960s as it was used in regional politics of many countries (e.g. France and Italy). The propulsive industries included automotive industry, steel and chemistry with the location of new manufacturing facilities

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In Schumpeter's analysis, development occurs as a result of discontinuous spurts in a dynamic world. The cause of discontinuous spurts is the innovative entrepreneur whose activities take place in large- scale firms. These firms are able to dominate their environment in the sense of exercising reversible and partially reversible influences on other economic units by reason of their dimension and negotiating strength, and by the nature of their operations

Scale of operations, dominance and impulses have close relationship to innovate. This is the most important feature of Perroux's theory and leads to the concepts of dynamic propulsive firm and leading propulsive industry. The dynamic propulsive firm is relatively large and belongs to a relatively fast growing sector. It has a high ability to innovate and intensity of its interrelation with other sectors of the economy is important enough for the induced effects to be transmitted to them.

A leading propulsive industry has highly advanced level of technology and managerial expertise, high income elasticity of demand for its products, marked local multiplier effects and strong inter-industry linkages with other sectors. There are two types of linkage—forward linkage and backward linkage. In backward linkage, an industry encourages investment in the earlier stages of production by expanding its demand for inputs.

In case of a forward linkage, an industry encourages investment in the subsequent stages of production either by transmitting innovation or effects of innovations forward. As a result of innovations, costs of production in the industry decline. It results in a fall in the price of its output. In this condition, the demand for this industry's output by those industries which use its output as input, will increase.

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Möhring J. (2005), Business Clusters: Promoting Enterprise in Central and Eastern Europe, OECD, Paris.

Moore B. (1974), Review: Growth Poles and Growth Centres in Regional Planning. Edited by A.R. Kuklinski, (The Hague: Mouton & Co., 1973, pp. x + 306. Guilders 32–00.), The Economic Journal, December.

Parr J.B. (1973), Growth poles, regional development, and central place theory, Twelfth European Congress of The Regional Science Association Papers of The Regional Science Association, Vol. 31.

Perroux F. (1950), Economic Space: Theory and Applications, The Quarterly Journal of Economics, Vol. 64, No. 1 (Feb., 1950), pp. 89–104.

Perroux F. (1955), Note sur la notion de pole de croissance, Economie appliquee, p. 94 after Cambell J., A note on growth poles, Growth and Change Volume 5, Issue 2, April 1974, p. 43.

Quigley J.M. (2008), Urbanization, Agglomeration, and Economic Development Working Paper No. 19, The International Bank for Reconstruction and Development / The World Bank.

Raspe O., Oort F. van (2011), Growth of new firms and spatially bounded knowledge externalities, The Annals of Regional Science, Volume 46, Number 3, pp. 495–518.

Rodell M.J. (1975), Review Article: Growth Centers – Two Recent Contributions, Economic Development and Cultural Change 23.

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(Parr 1973, 175–176). Perroux most certainly calls attention to the crucial role of innovations and innovators in the process of economic development. Perroux notes that the expansion of output by the propulsive industry induces subsequent expansion in the outputs of affected industries – those which are directly connected to the propulsive industry by technological interdependence or forward and backward input-output linkages. Perroux suggests that constellations of tangible and intangible innovations can stimulate and involve all agents capable of creative expectations and thus create an emotive state which is conducive to growth and progress (Parr 1973, 175–176). Perroux shared Schumpeter's belief in the role of innovations as "the prime causal factors behind economic progress". Presumably these innovations are introduced in "large economic units which are able to dominate the environment" (McKee 1987, 168). For Perroux, a growth pole is relatively large in comparison to the whole economy and that is the reason for its strength. Although the source of this strength is the ability to control conditions for buying and selling, the pole influences the economy in other ways. The pole induces changes and growth in the economy. Comparatively, centers are places where changes start and later on are experienced by people in the wider area. According to Rodell (1975, 524–525) the growth pole is a single enterprise or industry, while an economic center should consist of different types of firms – it is a geographic unit aggregated around different producers. If we observe that some areas develop quicker than others, then we presume that they are the main points of innovations in production, trade or social and political practices. Innovative processes are crucial conditions for growth. They are the basis for polarized growth theories. Information about innovations diffuses from the place of its origin to peripheral areas. Changes in the peripherals depend on the strength of linkages between the center and peripherals. Growth centers are hence untypical places in comparison to surrounding areas (Kuehn, Bender 1969, 435). Investments in propulsive industries are based on innovations and perspectives for future profits, that shift the growth to the surroundings. Perroux perceived growth and structural change as happening

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linkages in clusters cause better productivity of the cluster's firms and hence should enhance the situation of the regions in which they are located (Porter 1990, Möhring 2005, Wojnicka 2003). Clusters may be also engines of regional and/or national growth, hence they may form a kind of sectoral growth poles. In comparison to propulsive industries of the mid-20th c., in today's engines of growth, knowledge spillovers and innovation are important as well as linkages to universities. Probably stagnation in innovation processes in industries considered as growth poles in the mid-20th c. might be the main reason for many unsuccessful experiments in influencing regional growth using growth pole theory. With favorable conditions an environment can foster interactive learning capacity by facilitating relations between a firm and the external inputs it requires in order to innovate (Doloreux and Dionne 2008, 262). Hence a growth pole with a type of modernizing linkages with other industries and local territory will stimulate creation of favorable conditions for innovation in the whole region. In today's terms innovative branches – growth poles should be active elements of innovation systems both regional and other (such as domestic or sectoral). The interaction aspect of growth pole theory has been recently developed in systems of innovations and networks theory as has its impact both on innovativeness and competitiveness of firms and territories (Andreosso-O'Callaghan, Lenihan 2008, Wojnicka 2004). As Andreosso-O'Callaghan B., Lenihan H (2008, 561) state "seen as an essential dynamic of the regional growth process, a network benefits from transaction cost minimization and knowledge exchange leading to higher performance." Hence the growth pole should participate in innovative networks both of regional and domestic or international levels. Characteristics that should be possessed by an urban center before it can be considered a growth pole include the existence of a propulsive firm or propulsive industry, the possession of an assemblage of linked industries whose growth is induced by the propulsive firm (industry), the potential for technical and administrative innovations, the ability to achieve self-sustaining growth, and the capacity for growth impulses to be diffused over the pole's environment or periphery

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Moreover monetary and non-monetary external economies may be attractive to new industries which are not necessarily linked technologically with the initially expanding industry (Campbell 1974, 44). Propulsive industries contribute to the prosperity of all the surrounding firms through increased flows between suppliers and customers and contribute also to an increase of activity in the tertiary sectors because of the new income they generate. They also attract new enterprises to take advantage of new marketing and production facilities (Campbell 1974, 44). According to McCann and van Oort (2009), the growth pole theory of Perroux, subsequently embedded in geographical space by Boudeville (1966), is based on an assumption that economic growth, manifested in the form of innovations, is spread throughout a growth centre's periphery to lower-order cities and localities nearby. Innovations and knowledge once generated in a certain central location are expected to spread among regions from one locality to its neighbours. Innovation was perceived as crucial also for Perroux. According to Parr (1973) "in seeking to explain the emergence of the growth pole, Perroux laid particular emphasis on the innovating entrepreneur, the propulsive industry, the subordinate (linked) industries, and the complex of industries." However, tradition, based on Perroux' work, is more about regional poles built around "industrializing industries", sectors such as transportation equipment, that attract upstream manufacturers of parts and components, as well as metal, primary metals, rubber, plastic products and glass manufacturing attracting downstream producers using these materials. Such regional agglomerations do not require supporting institutions like universities or government laboratories. In the postwar period, European governments (particularly in France and Italy) applied this concept of Perroux poles in an effort to develop backward areas. Knowledge externalities, in this tradition, do not play a major role; agglomeration is more an input–output fact, based on demand created by prime contractors (Niosi and Zhegu 2005, 3). However this approach was also used for analysis of high tech firms, as well as the concept of clusters. Clusters are mainly supported due to the fact that cooperative and competitive

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the basis for polarized growth theories. Information about innovations diffuses from the place of its origin to peripheral areas. Changes in the peripherals depend on the strength of linkages between the center and peripherals. Growth centers are hence untypical places in comparison to surrounding areas (Kuehn, Bender 1969, 435).

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