# The International Competitiveness of National Regions: Conceptual and Practical Dimensions<sup>\*</sup>

IRYNA BRYKOVA\*\*

ABSTRACT. The article examines the conceptual evolution and development of the international competitiveness of national regions. It systematizes and describes the main theories of regional competitiveness. By identifying key factors in local dynamics, the author singles out three stages of the theoretical principles of the international competitiveness of regions and their perspectives.

KEY WORDS. International competitiveness of regions, theory of regional competitiveness, concept of international competitiveness of regions, competitive advantage, competitive status, directions of development of the concept of international competitiveness of regions, stages of formation of the concept of international competitiveness of regions

### Introduction

The current stage in the evolution of the world economy is distinguished by its dynamism and a deepening globalization. This is evidenced by the emergence of a global information, financial, trading and infrastructure space resulting from the expanding and more sophisticated interrelations and interdependencies of countries. The intensification of globalization considerably enlarges the spectrum of businesses competing internationally, thereby transforming individual territories — regions, cities, local entities — into strategic players on the world market. In the process of this global competition, individual regions of certain countries strengthen their positions; as well, due to their strong resource base and an efficient managerial system in the local economy, they represent their countries internationally and pursue an independent policy (e.g. Silicon Valley in California and Isle de France in Paris among others).

<sup>\*</sup>This article was translated from its original in Ukrainian.
\*\*Iryna Brykova is an assistant with the Department of International Economics at Kyiv National Economic University. She has several research publications to her credit. Her areas of academic interests are international competitiveness of regions, globalization, regionalization, and global competition. She was a participant in the Young Scholars competition held on 17 May 2006 by the Kyiv National Economics University and co-sponsored by the Centre for Trade Policy and Law at Carleton University and the University of Ottawa (Ottawa, Canada) and funded by the Canadian International Development Agency (CIDA).

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In the 1980s John Naisbitt, one of the founders of the «information society» theory, recorded a trend in regions striving for greater autonomy and higher roles in the development of national economies. Thus, the famous Naisbitt paradox states: «The bigger the world economy, the more powerful its smallest players<sup>1</sup>.» More specifically, the more diverse and stable the preferences of a society, the more intense its economic and social consolidation, the more comprehensive the use of its internal resources, and the more efficient its advantages in integrating with and adapting to the conditions of the global market. By using the new opportunities presented by globalization and creating local competitive advantages, regions not only strengthen their own international competitive status, but also increase the competitiveness of the national economy.

A new phenomenon thus emerges, whereby regions turn into «regional-enterprises<sup>2</sup>.» They are more frequently analyzed as quasienterprises that actively use their own resources to raise the level of economic, social and environmental competition in order to attract investment and highly skilled employable labourers. Of special importance precisely within this context is the region's competitiveness as a feature of its ability to determine, develop and protect local competitive advantages.

In the opinion of the Russian researcher N. Kaliyuzhnova, «a region's competitiveness is one of the first issues that could be called a contemporary global issue, i.e. inherent at different regional (localities) levels in different countries of the world<sup>3</sup>.» Some aspects of local development are drawn from classic economic theory (Adam Smith's theory of absolute advantages and David Ricardo's comparable advantages), agglomeratic economics (Alfred Marshall's theory of industrial districts, Francois Perroux's growth poles, Alfred Weber's theory of industrial location), theory of internal economic growth (Michael Porter's cluster theory), and Joseph Schumpeter's<sup>4</sup> theory of innovation development. Considerable study of the dynamics of regional development is carried out by such well-known Ukrainian and western economists as L. Antoniuk<sup>5</sup>, O. Bilorus<sup>6</sup>, D.Lukianenko<sup>7</sup>,

<sup>&</sup>lt;sup>1</sup> John Naissbitt. Ten New Directions Transforming Our Lives, 1982, p.34.

<sup>&</sup>lt;sup>2</sup> Kothler Ph., Heiner D.H., Rein I. Marketing Places. — New York: The Free Press, 1993. — p.46. Konkurentnosposobnost rossiyskikh regionov v uslovijakh globalizatsii [N.Kaliuzhnova. The Competitiveness of Russian Regions under Conditions of Globalization. Moscow. TEISs Pulbishers, 2004, p.56].

Schumpeter, J. (1934), *The Theory of Economic Development*, Harvard University Press, Cam-

bridge \*\* Mizhnarodna konkurentospromozhnist krain: toeriya ta mekhanizm realizatsii. [L.Antoniuk. International Competitiveness of Countries: Theory and Mechanism of Actualization. Kyiv. National University of Economics of Kyiv. 2004, p.276]

A.Poruchnyk<sup>8</sup>, S. Sokolenko<sup>9</sup>, V. Chuzhykov<sup>10</sup>, R. Martin<sup>11</sup>, I. Begg<sup>12</sup>, and R. Camagni<sup>13</sup>. However, it should be pointed out that the transformation of some regions into independent participants of a multi-level economic world system requires the design of new theoretical approaches in studying regional development at a time when global competition is intense.

The purpose of this article is threefold: to systematize and generalize existing approaches to international competitiveness under globalization; to classify the theories underlying the concept of the international competitiveness of regions; and to identify the current paradigms of regional development.

## Regions as Independent Participants in Competitive Global Relations

As the dominant trend of world economic development, globalization does not contradict, but rather catalyzes the dynamics behind the development of individual regions and enhances their roles in national and world economic processes. Regions are analyzed ever more frequently as independent participants in international competitive relations. In 2005 experts of the International Institute of Management at Lausanne included in a yearbook of competitive countries nine regions worldwide (Bavaria, Catalonia, Ile de France, Lombardy, Maharashtra, Rhone-Alpes, Sro Paulo,

<sup>&</sup>lt;sup>6</sup> Konkurentospromozhnist u suchasnomy globalnomy sviti. [O.Belorus, Y.Matseiko. Competitiveness in the Modern Globalized World. Economic Journal. XXI, 2002, No.9, pp.7-13].

Globalizatsia ta bezpeka rozvytku. [O.Bilorus, D.Lukianenko et al. Globalization and Security of

Development. Monograph. Kyiv. Kyiv National Economics University. 2001].

\*Venchurny kapital: zarubizhny dosvid ta problemy stanov-lennia v Ukraini. [A.Poruchnyk, L.Antoniuk. Venture Capital: Foreign Experience and Problems of Evolvement in Ukraine. Kyiv. National University of Economics of Kyiv. 2000, p.172].

9 Klastery v globalniy ekonomitsi. [S.Sokolenko. Clusters in Global Economy. Kyiv. Logos

Publishers, 2004, p.848].

Regionali intehratsiyni stratehii possotsialistychnykh krain Yevropy

V.Chuzhykov. Regional Integration Strategies of the Post-Socialist Countries of Europe. Kyiv. National

University of Economics of Kyiv. 2001].

11 Martin R., Sunley P. Slow convergence? Post-neoclassical Endogenous Growth Theory and Regional Development. Working Paper 44, ERSC Center for Business Research. University of Cambridge. Cambridge, 1996.

Begg I. Cities and competitiveness. — Urban Studies. — Vol.36. — 1999. — p.795-809. Begg I. Clies and competitiveness. — Grown Studies. 1973. — Program of Camagni R. On the concept of Territorial Competitiveness: Sound or Misleading? — Urban Studies R. 1975. — 1975. ies. — Vol.39. –No13. — 2002. — p.2395-2411.

and Che Yang), with most of them ranking much better than the countries they represented (Bavaria - 18, Germany - 23; Che Yang - 20, China - 31; Catalonia - 32, Spain - 38; Lombardy - 41, Italy - 53; Sro Paulo - 43, Brazil - 51)<sup>14</sup>. Thus, there is reason to consider that regions can become strategic players in the world economic space. What merits special importance is the design of a concept of international competitiveness of national regions that analyzes the interaction of regions as independent economic agents taking part in global competitive relations.

Five reasons can be singled out to justify the need for a concept of international competitiveness of national regions<sup>15</sup>:

- the emergence and development of a «new competition<sup>16</sup>,» which reveals the effect of the law of uneven economic development under intensified globalization;
- changes in the international division of labor, namely: deepening functional specialization, proliferation of subjects (market players) and development of territorial-functional specialization, stronger vertical division of labor into intellectual and other types of activity among individual regions;
- the impossibility of using existing instruments and methods of designing efficient national competitive strategies at the subnational (regional) level;
- the emergence of the phenomenon of «new regionalization<sup>17</sup>» whereby regions are unbounded by the existing administrative division of a country and hold a high international competitive status; and.
  - the formation of a new knowledge-based economy.

In this respect a single, generally used definition of the concept of international competitiveness of a region is lacking, which explains why its meaning is so controversial and multidimensional.

This study maintains that international competitiveness of a region stems from its capability for global competition based on the efficient use of traditionally available local resources as well as the creation of unique resources from local development that promote

2005, No.15].

<sup>16</sup> M.Best. New Competition. Institutions of Industrial Development. Translated from English. Mosçow. TEIS Publishers, 2002, p.356.

Moscow. TEIS Publishers, 2002, p.356.

17 Novy regionalizm v Zapadnoi Yevrope. [M. Kiting. New Regionalism in Western Europe. Logos maga-zine. No.6[40], pp. 67—116].

http://www01.imd.ch/documents/wcc/content/overallgraph.pdf
 Teoretychni osnovy minarodnoi konkurentosporomozhnosti re-gionu. [I.Brykova. Theoretical Foundations of International Competitiveness of regions. Economics and Entrepreneurship magazine.

higher levels of production and living standards of the local population and, accordingly, ensures a high competitive status in the global economic space over the long term.

### **Evolution of the Concept** of the International Competitiveness of Regions

Growing attention to regional aspects of global competition favors the formulation of a concept of the international competitiveness of regions. The underlying foundation of such a formulation rests on the postulates of classical 18 and neoclassical economic theory<sup>19</sup>, the «theory of new trade» and internal (endogenous) growth<sup>20</sup>, Schumpeterian evolutionary economics<sup>21</sup>, as well as on the elements of economic geography (theory of localization and economic zoning)<sup>22</sup> and sociology (analysis of cultural and managerial aspects of competitiveness)<sup>23</sup>.

Three stages of the evolution of the concept of international competitiveness of regions are singled out, an evolution which includes the following three orientations of regional analysis:

- regions as centers of export specialization;
- regions as sources of growing profits;
- regions as epicenters of the accumulation of knowledge.

Theories of regional development can be systematized according to factors in local dynamics: advantages (first stage); the development of international competitive advantages (second stage); the region's leadership in the global economic space in long-term innovation (third stage). It should be emphasized that this classification is to a certain extent arbitrary, since the three orientations of a region's international competitiveness do not evolve in stages and with successive changes, but rather mutually influence and logically supplement one another simultaneously.

<sup>&</sup>lt;sup>18</sup> Smith, A., An Inquiry into the Nature and Causes of The Wealth of Nations, 1776.

Simul, A., An inquiry into the Nature and Causes of The Wealth of Nations, 1776.

19 Samuelson, P. A. (1953), «Prices of Factors and Goods in General Equilibrium», *Review of Economic Studies*, 21(1), pp. 1—20.

20 Romer, P. M., «The Origins of Endogenous Growth», *Journal of EconomicPerspectives*, Winter 1994, pp. 3—22.

21 Schumpeter J. (1934) *The Theory of Economic Development*. Harvard University Press. Cam-

Schumpeter, J. (1934), The Theory of Economic Development, Harvard University Press, Cam-

Osnovy ekomicheskogo rayonirovaniya. [N.Kolosovsky. The Fundamentals of Economic Zoning.

Moscow. Gospolitizdat Publishers. 1958, p. 200] Florida, R., 'The Economic Geography of Talent', SWIC Working Papers, September 2000.

			Evolution	n of the co	oncept of	the inter	national co	Evolution of the concept of the international competitiveness of regions	regions				
Related areas of research	Classica	Classical economic theory		Economic geography	eography		Theory of «new trade»  Y. Krugman) and of "ne growth»(P.Romer)	Theory of «new trade» (P. Krugman) and of "new growth»(P.Romer)	Evolutionary economy (J. Schumpeter)	nary ny neter)	Theory of endogenous growth	Sociology	
7 800	1776	1817	1919— 1933	1826— 1909	1933	1940	1956	1927—1941	1929— 1963	1974— 1990	1980	Main orientations of the concept of	
STAGES	Theori	Theories of international trade	national	Т	Theories of localization	l localizati	on	Theories of economic zoning	conomic zoni	gu		international com- petitiveness of re- gions	
Formulation of theories of export specialization of regions and theories of localization	Theory of absolute ad- vantages (A. Smith)	Theory of comparable advantages (D.Ricardo)	Theory of relation of pro- duction factors (E.Hecksher, B.Ohlin)	Theories of Standorts (J.Tünen, V.Laundhart, W.Weber)	Theory of central cities (V.Kristaler)	Theory of economic land- scape (A.Loche)	Regional studies (U.Izard)	Studies on economic region?  gions (J.Alexandrov, M.Kolosovsky)	Studies on Geographic di- vision (M.Baransky)	Models of territorial- industrial complexes (M. Bandman)	Theory of regional export specialization (H.Armstrong and J.Teylor)	Regions as centers of export specializa- tion	
	1890	06		1984			1994	4		1998			
Development of theories explaining the formation of competitive advantages of regions	Theory of ir dustrial dis tricts (A. Marshall)	of indis-	Theory of «flexible cialization»(M.Piore. C.Sabel)	Theory of «flexible cialization»(M.Piore, C.Sabel)	le spe-	Theory ness of terfield)	of cumulati regions (M	Theory of cumulative competitive- ness of regions (McCombine, Set- terfield)	Theory of regional inte growth (R. Martin, P. Sunley)	of regional R. Martin, P. S	nal internal . Sunley)	Regions as sources of increasing profits	
	1950	1953	1969	1979	1987	1988	1992	1993	1994	1994	1996		
Design of innovation models of territorial de- velopment	Тheory of "growth (F.Perroux)	noitsvonni to ytoohT noizuttib (T.Heggerstrand)	Theory of urbanistic growth (1.1acobs)	Theory of industrial districts (G. Becattini)	Theory of localized production system (M.Brouchrare)	Theory of new indus- trial space (M.Storper, A.Scott)	Theory of technology districts (M.Storper)	Theory of innovative (Maillatt)	Innovation cluster theory (M.Enright, M.Porter)	Theory of regions that study and regional in-	(B.Asheim, A. Ledecom).  Typology of Industrial districts  districts  (A. Markusen).	Regions as epicen- ters of accumulation of knowledge	
Region as a quasi-corporation	ration	R	Region as a quasi-state	quasi-stat	e.	-	Region as a market	market	<b></b>	Region as society	ociety	Modern para- digms of regional development	
													1

Fig.1. Evolution of the concept of the international competitiveness of regions (constructed by the author)

The *first orientation* of the concept of international competitiveness of regions is based on the theories of international trade and the theories of localization and economic zoning. The theoretical principles of production specialization of regions were highlighted for the first time in the classic works of English political economists, Adam Smith<sup>24</sup> and David Ricardo,<sup>25</sup> as well as by the Swedish economists Eli Hecksher<sup>26</sup> and Bertil Gotthard Ohlin<sup>27</sup>.

On the basis of the theories of absolute and comparable advantages, the following two conclusions can be made: all participants gain advantages from international trade, but those whose product costs are lowest will be more competitive; and the main factors of competition are prices. However, these theories do not reveal the competitive advantages in science-intense sectors in which efficient development is ensured by technological and innovational factors.

In the 1920–1930s, Hecksher and Ohlin modified Ricardo's principles of comparable advantages and proved that the basis for foreign trade is the difference not in conditions, but rather in production. However, this theory did not explain the mechanism of accrual of competitive advantages in countries (regions) that were endowed with the same factors of production, because these economists assumed that all countries were using the same technologies. Neither does this reflect the reality of today whereby under conditions of global competition only a region's innovation and technical leadership can ensure it a high internationally competitive status in the long run.

In the early 19th century theories of localization, a new area of geographic science, had considerable influence in shaping the concept of the international competitiveness of regions by linking for the first time the specialization of manufacturing ventures with their location.

But in the early 1950s the limitations of these theories became evident, in particular their study of individual «isolated» subjects of market relations (states, cities, regions, enterprises). While isolation foresaw the pursuit of economic activity under conditions of market equilibrium, it does not accurately reflect the true market situation and the practical value of the theories of localization are reduced considerably.

In contrast to the development of the theories of localization, regional science emerged as a new area of social science that extensively used and synthesized the discoveries and achievements of

<sup>&</sup>lt;sup>24</sup> Smith, A., An Inquiry into the Nature and Causes of The Wealth of Nations, 1776. Ricardo D., On the Principles of Political Economy and Taxation, 1817.

Hecksher E., The effect of foreign trade on the distribution of income, 1918. Ohlin B., Interregional and International Trade, 1933.

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other spheres of social knowledge. According to the ideologue of regional science, U. Izard, this is a field that concentrates on the study of the spatial aspect of human activity and its importance for understanding social behavior<sup>28</sup>. It aims to reveal spatial interrelationships not only between individual persons and their activities, but also between people and the geographic environment. Unlike theories of localization, regional science is aimed at dealing with concrete practical objectives<sup>29</sup>.

In the USSR, the idea of concentrating production forces on a certain territory to optimize the use of a region's natural and labor resources and to comprehensively develop it under a planned economy materialized in the models of territorial-industrial complexes (TIC). At the time it was introduced into scientific circulation (1920) Soviet scientists identified the term TIC with an economic region: «an economic region is a territorial-industrial complex that ensures the full and rational use of the natural and labor resources of a region<sup>30</sup>.» From 1923–1929, the Soviet scientist M. M. Baransky studied zoning in the cases of one industrial (Ural) and one agricultural (Northern Caucasus) region. These regions had to specialize in the output of certain products and exchange them with other regions on the basis of a division of labor<sup>31</sup>. In the 1960s the economic geographer M. M. Kolosovsky for the first time used the concept of a power production cycle to explain the production structure of each economic region<sup>32</sup>. As the territorial-production system of the USSR was becoming more complex, the need arose to divide economic regions into sub-regions to better plan their development. From this moment on, TIC was analyzed as an initial cell of an eco-

Osnovy regionalnoy ekonomiki. [A.Granberg. Fundamentals of Regional Economy. Moscow.

Nauchnyie printsipy geografii. [N.Baransky. Scientific Principles of Geography. Moscow. Mysl

Publishers, 1980, pp. 240]

issledovaniyakh. Methody i modeli regionalnoho analiza.

[M. Bandman. Initial Positions of Methodological Premises for Applying TIC Models in Pre-Planned Studies. Methods and Models of Regional Analysis. Edited by Zvereva. Novosibirsk. 1977, pp. 98—112]

<sup>&</sup>lt;sup>28</sup> Methody re-gionalnogo analiza. [U.Izard. Methods of Regional Analysis. Moscow. Progress

<sup>2004,</sup> pp. 493].

V.Lenin i territorialnaya organizatsiya proizvoditelnykh sil SSR. Territorialnye proizvodstennye kompleksy. [N. Kazansky, P. Stepanov. V. Lenin and the Territorial Or-ganization of Production Forces of the USSR. Edited by N. Kazansky. Moscow. Mysl Publishers, 1970, pp. 3—17].

Osnovy ekonomicheskogo raionirovaniya. [N.Kolosovsky. Fundamentals of Economic Zoning. Moscow. Gospolitizdat Publishers, 1958, pp. 200].

33 Iskhodnye positsii methodicheskikh polozheniy po ispolzovaniu modelei TPK v predplanovych

nomic region and gradually transformed from a scientific concept into an object of economic planning and a concrete form of territorial organization of production forces. The Soviet scientist M. K. Bandman identified TIC «as a planned aggregate of objects of different economic sectors, which are interrelated and created for dealing jointly with one or several economic problems and are distinguished for their size of production and clear specialization in the dimensions of the country and its economic region; concentrated on a limited and necessarily compact territory and possess the required sets and volumes of resources; efficiently use local and external resources and protect the environment; and have a single production and social infrastructure<sup>33</sup>.» After the successful application of TIC models to regions in Siberia, Bandman singled out three other applications of TIC as a form of organizing production forces: to solve intersectoral regional problems of general importance to the Soviet Union; to restructure radically the economies of old industrial or highly developed regions in order to modernize the established industrial base important to the Soviet Union; to create new intersectoral territorial-production entities also of importance to the Soviet Union<sup>34</sup>.

Notably, despite the TIC models being clearly bound to the conditions of a planned economy, most of the resource-intensive enterprises built within the TIC frameworks in Ukraine today represent the main export potential of the country. In addition, the main ideas underlying the design of TIC models served as a spur for the development of the cluster concept in the latter half of the 20th century.

In the 1980s English researchers H. Armstrong and J. Taylor elaborated the theory of regional export specialization based on the principles of the theory of comparative advantages: regions specialize in those areas of activity in which they enjoy relative advantages. Special attention is centered on the analysis of export-oriented sectors, since the rates of regional growth are proportionately dependent on the dynamics of exports. Armstrong and Taylor maintain that external demand in a region's exports is a function of the price for exports, standards of profit and prices for commodities-substitutes on the world market, as well as the quality of products

<sup>&</sup>lt;sup>34</sup> Proizvodstvennaya and prostranstvennaya struktura Sayanskoho TPK. Ekonomiko-geograficheskiye problemy formirovaniya territorialno-proizvodstvenykh compleksov Sibiri. [M.Bandma, M. Malinovskaya, V.Malov. Production and Spatial Structure of the Sayany TIC. Economico-Geographic Problems of Forming Territorial-Production Complexes of Siberia. Edited by M.Bandman. Part 2. Novosibirsk. 1974].

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and aftersale service. In addition factors that determine production costs (wages, raw materials, depreciation deductions, technological development rate, operating expenses) also affect the position of a region on the international market. As regional exports grow in part due to such factors, the level of gross regional profit gradually increases and, accordingly, the living standards of the local population improve<sup>35</sup>.

Thus, the first orientation of the concept of international competitiveness of regions, i.e. regions as centers of export specialization, combine theories that identify the principles and factors of the industrial specialization of regions within the system of an international division of labor. The undoubted achievement of scholars of regional competitiveness, referred to in this section, lies in the research into the process of forming comparative advantages by business entities in direct relation to local conditions. At the same time, however, this group of theories does not examine individual regions as independent participants in international economic relations, but rather as an environment for the activity of business actors.

# Regions as Sources for Increasing Profits

The second orientation of the concept of international competitiveness of regions took shape in the 1980s-1990s. This period saw an enlargement in the dimensions of regionalization whereby individual regions were gaining greater autonomy and roles in the development of national economies on the whole. As a result, the phenomenon of «new regionalism» appeared. New regionalism combines a number of different processes behind the formation of regions that are not related to official administrative boundaries and enjoy prominence in international competition<sup>36</sup>. M. Kiting, the English author of new regionalism, emphasized that the concept is distinguished for two interrelated specific features: it is unrestricted

<sup>37</sup> Novy re-gionalizm v Zapadnoi Yevrope. [New Regionalism in Western Europe. Logos. No.6(40), 2003, pp. 67—116].

<sup>35</sup> Armstrong H. and Taylor J. Regional Economics and Policy, Blackwell, Oxford, 2000.
36 Kontseptsia novogo regionalizma v kontekste povysheniya mezhdunarodnogo konkurentnogo statusa regiona. Sbornik materialov IV mezhdunarodnoi nauchno-prakticheskoy konferentsii "Dinamika nauchnykh issledovaniy 2005". [Concept of New Re-gionalism within the Context of Raising a Region's Competitive Status. Collection of Papers of the 5th International Workshop "Dynamics of Scientific Studies 2005. "Dnipropetrovsk, June 20-30, 2005. Dni-propetrovsk. Science and Education, vol.19. Regional Economics — 2005, pp.15-18].
37 Novy re-gionalizm v Zapadnoi Yevrone [New Regionalism in Western Europe, Logos, No.6(40)]

by the boundaries of a national economy; it does not grant regions a new role in the system of international division of labor despite their contending against each other<sup>37</sup>.

The development of new regionalism initiated and advanced a number of theories that consider how individual national regions behave as independent participants in global competition. These include in particular: the theory of «flexible specialization» of M. Piore and C. Sabel<sup>38</sup>; the theory of cumulative competitiveness of regions of J. McCombie and M. Setterfield<sup>39</sup>; and the theory of regional internal growth of R. Martin and P. Sunley<sup>40</sup>.

Of significance is that A. Marshall was the first to analyze regions as sources for increasing a country's profits when he elaborated his theory of industrial regions in 1890. According to his theory, the competitiveness of individual industrial sectors is determined by the degree of their geographic localization and, vise versa, the level of industrial specialization affects the development of local economies. Marshall singled out three key factors in the development of local entities: highly skilled workers, efficient partnerfirms, and additional opportunities for the division of labor between enterprises. The interaction of these elements creates a specific «local industrial atmosphere» that invigorates activity in innovation <sup>41</sup>.

Elaborating on Marshall's idea on the existence of a special industrial atmosphere within the boundaries of individual local entities, Italian researchers M. Piore and C. Sabel concluded that the economic growth of certain regions is explained by the efficient operation of a substantial number of small and medium-sized enterprises that are geographically concentrated and enjoy considerable competitive advantages because of «flexible» specialization and the effect on the scale of production of savings<sup>42</sup>.

The authors of the cyclical theory of cumulative competitiveness (J. McCombie<sup>43</sup> and M. Setterfield<sup>44</sup>) maintain that an increase in

<sup>&</sup>lt;sup>38</sup> Piore M., Sabel C. The second Industrial Divide: Possibilities for Prosperity. N.Y.:Basic Books,

<sup>1984. —</sup> pp. 234.

39 A Study on the Factors of Regional Competitiveness. A draft final report for The European Co-

mission Directorate-General Regional Policy, pp. 2—16, 2002

\*\*Martin, R. and Sunley, P., 'Slow Convergence? Post-neoclassical Endogenous Growth Theory and Regional Development', Working Paper 44, ERSC Center for Business Research, University of Cambridge, Cambridge, 1996.

Marshall A. Principles of Economics. Variorum edition overseen by C. Guillebaud. L.: MacMillan

Press, 1961. — 450 p.

42 Piore M., Sabel C. The second Industrial Divide: Possibilities for Prosperity. N.Y.:Basic Books, — 234 p.

McCombie J., Productivity Growth and Economic Growth: Essays on Verdoorn's Law, Editor (with M Pugno and B Soro), Houndmills: Palgrave, 2002.

Setterfield M., A model of Kaldorian traverse: cumulative causation, structural change and evolutionary hysteresis, 2002

the gross regional product (GRP) is a function of the demand in the region's exports determined by the interrelation of world and export prices. By studying the interaction of the above-mentioned factors, the authors revealed a cycle in the region's competitive growth: GRP growth — labor productivity growth — reduction of relative expenditures for wages — reduction of prime cost of exports — higher demand in exports. The key element of the theory of cumulative competitiveness of regions is what is called the Verdoorn effect, which explains the mechanism of mutual influence of GRP growth and labor productivity growth. The increase in GRP encourages local companies to introduce technological changes and invigorate activity in innovation, resulting in an increase in the productivity of labor<sup>45</sup>.

Martin and Sunley's model of internal regional growth is a neoclassic model of internal growth adapted to the local level. In other words, dynamically developing regions attract highly skilled workers which, in turn, promotes higher labor productivity and speeds up economic growth rates, while the localization of technological innovations promotes long-term leadership in innovation of these regions<sup>46</sup>.

Thus, the second orientation of the concept of international competitiveness of regions embraces theories that analyze individual regions as independent subjects of international economic activity and concentrate on the formation of local competitive advantages. Moreover, the authors of the theories of this orientation emphasize the positive effect of a specific inter-firm environment (atmosphere) that promotes prompt dissemination of information between them and, as a result, the timely introduction of required innovations which, in the final analysis, raises productivity of labor and the GRP.

### Regions as Epicenters of Knowledge Accumulation

The intensification of the process of globalization modifies the tools of competition: it minimizes the role of material and power methods of production and transforms information into a fundamental resource. Therefore, the ability to apply innovations (as a permanent process of producing new knowledge and its efficient appli-

<sup>&</sup>lt;sup>45</sup> A Study on the Factors of Regional Competitiveness. A draft final report for The European Commission Directorate-General Regional Policy, 2002, pp. 2—16

<sup>&</sup>lt;sup>46</sup> Martin R., Sunley P. Slow convergence? Post-neoclassical Endogenous Growth Theory and Regional Development. Working Paper 44, ERSC Center for Business Research. University of Cambridge. Cambridge, 1996.

cation in practice) is a significant source for creating long-term competitive advantages at the current stage of development of the world economy. The process of a region's long-term leadership in innovation is the objective of theories of the *third orientation of* the concept of international competitiveness of regions.

In the 1950s and 1960s, at a time when scholastic and technological progress was advancing and exerting an increasing influence on economic activity, H. Heggerstrand's theory of «innovation diffusion» was itself widely diffused. According to the theory, under a market economy technological achievements and discoveries are not introduced evenly, but disseminated haphazardly. The theory of innovation diffusion is an attempt to prove the inevitability of the market economy's inherent territorial disproportions that appear as a result of the effect of the law of uneven economic development<sup>47</sup>.

Inseparably linked to the theory of innovation diffusion is the concept of dynamic propulsive sectors. The French economist F. Perroux, author of the theory of «growth poles,» maintained that the process of dissemination of innovation determines and speeds up economic progress, departing completely from the principle of homogeneity and evenness of development. Innovations create concentrated groupings around key sectors that, in turn, produces a positive multiplication effect and creates growth poles<sup>48</sup>. Therefore, for Perroux growth poles is a functional concept. His student, J. Boudville, formulated for the first time the thesis that individual regions (but not countries as a whole) are capable of accumulating all the required resources, creating conditions for local innovational development, and representing their own countries on international markets<sup>49</sup>.

Jane Jacobs<sup>50</sup> further elaborated the idea of uneven development by conceiving the theory of urbanistic growth. She introduced the term «region-city» — a local agglomerate as an arena for creating regional prosperity. The urbanistic system creates conditions for interaction among firms, companies, institutions and organizations engaged in completely different activities, which increases the probability for the emergence of progressive forms of business.

<sup>&</sup>lt;sup>47</sup> Konkurentnosposobnost stran i regionov v mirovom khozaistve: toeriya i opyt malykh stran. [I.Pylypenko. Competitiveness of Countries and Re-gions in the World Economy: Theory and Experience of Small Countries. Smolensk. *Oikumena* maga-zine, 2005, pp.38].

<sup>48</sup> Perroux F. Economic Space: Theory and Applications // Quarterly Journal of Economics, Vol.64, 1950.—p.p. 89—104
49 Darwent D., Growth poles and growth centers in regional planning--a review, *Environment and Planning*, vol. (1969), pp. 5—32 Jacobs J., The Economy of Cities, New York: Random House, 1969.

In the 1970s, on the basis of the «Third Italy» Italian economist G. Becattini examined the phenomenon of the growing competitiveness of small and medium-sized enterprises owing to local concentration. At that time Italy's industrial North («First Italy») had been in a state of crisis for a long time while the less developed South («Second Italy») demonstrated growth rates below its potential. Becattini proposed to form fundamentally new paradigms for organizing production by elaborating on the theory of Italian industrial districts. Becattini singled out two principal conditions from among those required for the emergence of an industrial district: the existence of local supply and the existence of general demand, under which he understood the differentiation of demand to have deepened during the development of Western countries. Italy's industrial districts had three specific features<sup>51</sup>:

- 1. Family businesses. Firms founded on family interrelationships are part of the history of Italy's development. Family business has a large number of horizontal linkages between firms, a specialization of each individual manufacturer at a certain stage of production, and subordination of small companies to a large end-product manufacturer who, in turn, contacts the external market. Becattini called such an organization a socioeconomic identity.
- 2. A system of prices supported by all small and medium-sized enterprises, which, though corresponding to world prices for similar products, took into account the level of income of a definite region of Italy.
- 3. The presence of industrial districts only for certain industrial sectors, such as manufacturing textiles (Capri, Prato), leather (Arzignano), ceramic tiles (Sassuolo), and furniture (Manzano). They belong to traditional industrial sectors where production is much more efficient not in large companies, but rather in small and medium-sized firms.

Today Italy numbers 260 industrial districts, the most concentrated of which are located in the country's northeast (65) inhabited by 36.8 % of Italy's population; these industrial districts generate 42.5 % of the country's GDP. In comparison, the traditional West (the industrial Milan-Turin-Genoa triangle) generates 31.1 % of GDP<sup>52</sup>.

The conclusions of Becattini's studies were actively used by American economists when they formed the concept of regional and local clusters.

<sup>&</sup>lt;sup>51</sup> Becattini G. From Marshall's to the Italian "Industrial districts". A Brief Critical Reconstruction [http://www.competitiveness.org/newsletter/files/becattini.pdf].
<sup>52</sup> Klastery v globalniy ekonomitsi. [S.Sokolenko. Clusters in the Global Economy. Kyiv. Logos Publish-ers, 2004, p. 206].

Since the mid 1970s, Switzerland has been forming its own French-language school under the leadership of D. Maillat to study the causes and implications of territorial concentration of production under the conditions of post-Fordism. Maillat is one of the main members of the research group GREMI (Groupe de recherche Europäen sur les milieux innovateurs — Research Group for Innovating Milieux), which designed a distinctive system of terms for identifying the current process for concentrating production.

The key term in the concept of the Swiss school of territorial industrial systems is the innovative milieu, which is defined as «a group of players capable of perceiving the changes in the process of globalization and promoting the development of a localized territorial production system, to which the milieu relates. The innovative milieu exists at the cognitive level and consists of, on the one hand, interaction between the participants of a group, technological and market environment, and, on the other hand, of a localized territorial production system.<sup>53</sup>»

Maillat singles out two types of industrial districts: districts with a «flexible specialization» which were described by Piore and Sabel; and Marshallian industrial districts specializing in the use of local know-how as well as scientific and technical resources. Precisely in such districts is does the innovative milieu play a significant role—the motivating force behind the district's endogenous development. Five characteristics of an innovative milieu are distinguished<sup>54</sup>:

- spatial unity geographic space without clear boundaries but with a certain unity revealed through the behavior of its subjects;
- milieu players firms, academic and educational establishments, local bodies of state authority, people;
- specific elements both material (infrastructure) and non-material (know-how, rules of interaction of players);
- organizational logic, i.e. the ability to cooperate with one another, rationally using available resources;
  - ability of the players to improve.

By using its local experience and encouraged by an innovative milieu, a territorial production system is capable of effectively joining the international division of labor.

Thus, the theory of the innovative milieu is closely linked to the theories of Marshall's industrial regions and Becattini's industrial districts, as well as Piore and Sabel's «flexible» specialization. The linkages and even a certain similarity of these theories required their

Maillat D. From the industrial district to the innovative milieux: contribution to an analysis of territorialized productive organizations. Working Paper 9606b, Université de Neuchâtel, 1996. — 28p. — p. 4
 Maillat D., Grosgean N. Globalization and territorial production systems. Working Paper 9906b, Université de Neuchâtel, 1999. — 19 p.

systematization and the creation of a general classification of industrial districts, which was done by American researcher A. Markusen in the late 1990s.

To identify the districts of industrial production concentration, she used the term «sticky places in slippery spaces.» According to Markusen, such places possess the following characteristics:

1. Ensure the highest level of a district's economic growth com-

pared to the average for the country;

- 2. Protect the district against unemployment, firms against bankruptcy over the short and long-term, as well as against political instability;
- 3. Create new jobs and minimize the possibility of uneven distribution of income;
- 4. Stimulate the participation of workers in the process of decision-making; and,
  - 5. Facilitate interaction between firms and local governments.

On the basis of her analysis, A.Markusen singled out five types of spatial organizations of enterprises<sup>55</sup>:

Type I — Marshallian new industrial districts, in their modern

guise — the Italian industrial districts.

Type II — hub-and-spoke districts where the entire structure develops around several main corporations engaged in one or several industrial sectors. Such types of districts are developing in the automotive industry as, for example in Toyota (around the Toyota Motors works), Detroit (the «Great Three» car corporations), in the agglomerate of Stuttgart (principal Daimler Chrysler enterprise manufacturing Mercedes engines in the suburbs of Unterturkheim and the assembly works at Sindelfingen producing Mercedes cars). Such a spatial organization of production is observed in the aerospace industry (in Seattle where the main production capacities of Boeing are located). In the long-term outlook, such districts depend very much on the efficient and stable operation of district-creating

Type III — satellite industrial platform, on which operate exclusively the subsidiaries of transnational companies (TNCs) and are set up in all countries regardless of the level of their economic development. For instance, the Research Triangle Park, established in North Carolina in 1950s, is today a huge industrial district with subsidiaries of large TNCs operating on its territory. To such types of districts also belong free economic zones, such as Shannon in Ireland, Kanaus in Brazil, as well as Kumi and Annan in South Korea.

<sup>55</sup> Markusen A. Sticky Places in Slippery Space: A Typology of Industrial Districts // Economic Geography, vol.72, Issue 3, July 1996. — pp. 293—313.

Industrial platforms lack a synergetic effect inherent in local production systems, since the main source of financing new technologies, management and ideas are beyond the limits of the districts, i.e. at the headquarters of parent companies.

Type IV – state-centered districts in which the main role is played by state organizations. They provide districts with infrastructure, finance, technologies, control the migration of labor, and buy locally manufactured products. Such districts belong, in particular, to the military-industrial complex (Albuquerque, Santa Fe, Colorado Springs in the US) or the research sphere (the area around the Tsukuba technopark in the Republic of Korea). To these can also be added a number of cities that were mainly engaged in research for the defense industries in the former Soviet Union.

Type V — districts of a mixed type. One example is Silicon Valley that differs from Italy's industrial districts by its genesis (purpose-minded creation of a technopark at Stanford University), operation structure of companies (presence of subsidiaries of large TNCs), and principles of ownership of companies (absence of family firms). In the Silicon Valley, we can single out a Marshallian industrial district in electronics with companies closely cooperating with the Hewlett Packard TNC and Stanford University, as well as the «platforms» for the subsidiaries of such gigantic TNCs as IBM, Oki, Hyundai and Samsung.

In the early 1990s, the American economic geographer M. Storper expanded Markusen's classification. Studying reasons for the high competitiveness of commodities from the Triad countries, he concluded that special technology districts existed where optimal conditions are created for the manufacturing of high-tech products<sup>56</sup>.

In the 1980s and 1990s, in-depth and extensive studies of the cluster model of raising competitiveness were conducted in the US under the guidance of M. Porter, who initiated the introduction of the term «cluster» into the system of socioeconomic sciences. A cluster is a group of geographically neighboring interdependent companies and related organizations that operate in a certain area in joint activity and complement one another<sup>57</sup>. Porter gives preference to industrial clusters as a new form of spatial organization of production for ensuring a country's competitiveness. A cluster uses the advantages of two methods of market system coordination — intra-

<sup>&</sup>lt;sup>56</sup> Storper M. The Limitations to Globalization: Technology Districts and International Trade // Eco-

nomic Geography, Vol.68, Issue 1, January 1992. — pp. 60—93.

57 Mizhnarodna konkurentospromozhnist krain: teoria ta mekhanizm realizatsii. [L.Antoniuk. International Competitiveness of Countries: Theory and Mechanisms of Actualization. Kyiv. National University of Economics of Kyiv. 2004, p. 276].

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corporate inaction and the market mechanism — to intensify and raise the efficiency of diffusion of new knowledge and technologies. With a cluster, innovations — the products of activity of several companies or research centers — are distributed through a network of technological interdependencies in the general regional economic space. Moreover, the diversification of sources of new knowledge simplifies the combination of production factors and invigorates innovation activity. Therefore, an innovative cluster is not a haphazard concentration of diverse technological ideas, but a definite system of dissemination of new knowledge and technologies. An important precondition for transforming discoveries into innovations (discoveries that found their practical application) is the establishment of a network of sustainable links — «technological networks» between all cluster participants. Financially, innovations are introduced into production through the system of venture funds. In the US, for instance, over 50% of biotechnology firms are financed by venture capital at startup<sup>58</sup>. Porter unfolds the means by which clusters achieve competitive advantages through the «diamond» model of competitiveness, principally, conditions of demand, status of production factors, related and support sectors, level of corporate strategy, and two additional factors, government and opportunity.

The model of industrial clusters was further developed in research by American economist M. Enright, who studied the geographic dimensions of competitive advantages and concluded that regional clusters, geographically agglomerated companies working in one or several related sectors of the economy, existed<sup>59</sup>.

In summarizing the studies of Porter and Enright, three positive effects of the development of clusters are singled out: scale, coverage (expansion), and synergy.

As to the cumulative experience of the development of cluster systems among the world's leading countries, such systems served as significant stimulants in the development of regions in those countries where these principles were applied. For instance, in the US there are approximately 380 clusters embracing a broad spectrum of

<sup>&</sup>lt;sup>58</sup> Mizhnarodna konkurentospromozhnist krain: teoria ta mekhanizm realizatsii. [L.Antoniuk. International Competitiveness of Countries: Theory and Mechanism of Actualization. Kyiv. National

University of Economics of Kyiv. 2004, pp. 73].

<sup>59</sup> Enright M.J. The geographical Scope of Competitive Advantage // Stuck in the Region? Changing scales for regional identity / Edited by E.Dirven, J.Groenewegen and S. van Hoff. Utrecht, 1993. —

Klastery ta ikh ekonomichne znachennia. [V.Chevhanova, I.Bryzhan. Clusters and their Economic

Importance. *Economics of Ukraine*. No.4, 2002, pp. 35—41.

Asheim, B. and M. Gertler (2004) Understanding regional innovation systems. in Jan Fagerberg, David Mowery and Richard Nelson Handbook of Innovation. Oxford: Oxford University Press,

services and processing industrial sectors. They employ 57% of the American workforce and manufacture 61% of the country's industrial products. Three of the world's most efficient high-tech clusters (the «Silicon Valley of the 21st Century») are located in Germany, specifically in Munich, Hamburg and Dresden. In Denmark — the world's leader in clustering to date –29 principal clusters operate, accounting for 60 % of the country's exports and embracing 40 % of its companies.

For Ukraine the global experience in the application of the theory of innovation clusters is of special importance in the context of improving competitiveness. To date this model is not only the best possible form of organizing production in the world, but also an opportunity to achieve stable competitive advantages and rapid economic growth of regions by setting up clusters in different locations.

The first step in this direction has already been made in Ukraine. In 1998, a cluster uniting about 25 construction enterprises was established in Khmelnytsky oblast. The close cooperation of all the participants in the production process — from suppliers of raw materials to consumers of the end products — reduces the prime cost of products and services and creates a single information environment, which decreased the cost of housing in the oblast by 15 %<sup>60</sup>. Moreover, the oblast also has efficiently operating clusters engaged in sewing, food manufacturing and tourism. Yet it is too early to speak about the emergence of national or international clusters, because the competitiveness of the products they manufacture is still too low. But if the first clusters perform successfully, then, according to the cluster theory, positive changes in technologies and production factors will likely follow.

Of ever-growing importance is the approach that links innovation with interaction among workers, companies and the surrounding business environment. A number of economists identify such an alternative approach as «innovation dialog model» or «innovation interaction model<sup>61</sup>.» B. Asheim and M. Gertler<sup>62</sup>, Scandinavian authors of the theory of regional innovation systems, maintain that the creation of new knowledge is focused precisely in the regions that have an adequate structure of its accumulation and further extension. Transfer of knowledge is more efficient in the process of face-to-face contact than through long communications channels, thus transforming the regions into key economic subjects of international competitiveness of countries. According to the evaluation of

<sup>64</sup> European Competitiveness Report 2003. — Commission of the European Communities. Brussels, pp. 136—139.

<sup>&</sup>lt;sup>62</sup> Asheim B., Isaksen A., Nauwelaers C., Todtling F., Regional Innovation Policy for Small-Medium Enterprises, Edward Elgar Publishing, 2003.

the World Economic Forum, the key innovator of the past ten years is the US, although half of its research and development is carried out in six of fifty states, while 20 states account for only 5 % of all R&D.

Today there does not exist a generally accepted definition of a regional innovation system (RIS). According to this article, a RIS is an aggregate of private firms, state companies, NGOs, agencies of state authority, and centers for creating and disseminating new knowledge (such as universities, research institutes, experimental laboratories, innovation development agencies, and the like) that are unconstrained by specific trust-based partnerships to promote innovation activity and, as a result, raise the region's competitiveness. Of particular importance is the need to establish an efficient mechanism for funding and subsequent commercialization of research and development through, for instance, the system of regional venture funds.

The level of RIS development is determined by two key criteria: the type of innovation management system and scope of innovation business.

By types of innovation management system we distinguish among spontaneous, network and guided RISs, and among scales of innovation business — local, interactive and globalized RISs<sup>64</sup>. Different combinations of the above-mentioned characteristics create nine types of regional innovation systems:

Typology of regional innovation systems

Innovation management system	Spontaneous	Network	Guided
Dimensions of in- novation business			
Local	Tuscania (Italy)	Tampere (Finland)	Tohoku (Japan)
Interactive	Catalonia (Spain)	Baden-Wbrtemberg (Germany)	Quebec (Canada)
Globalized	Silicon Valley (California, US)	North Rhine- Westphalia (Ger- many)	Singapore

Adapted by the author according to European Competitiveness Report 2003. Commission of the European Communities. Brussels, pp. 136-139.

Thus, it can be asserted that the level of innovation activity of individual companies is determined not only by their inner potential, but also to a considerable extent by the validity of the regional

innovation system, namely: the existence of a developed mechanism for technology transfer, an efficient infrastructure and institutional structure for innovation, as well as the establishment of specific partnerships among economic subjects, which promotes the diffusion and dissemination of new knowledge. Indeed, the development of a regional innovation system as a significant catalyst for local innovation activity is a necessary precondition for improving a region's international competitiveness under conditions that shape the economics of knowledge.

Therefore, the third orientation of the concept of international competitiveness of regions embraces the theories that consider individual regions as epicenters of the emergence of new knowledge. Moreover, authors of the theories of this orientation concentrate on the impact on the dynamics of the innovation process of additional effects arising from the development of informal partnership relations between the participants in the current local production entities and ensuring their higher international competition status over the long term.

### **Conclusions**

After analyzing and systematizing a broad spectrum of theoretical sources on the international competitiveness of regions in the global economic environment, we have arrived at the following conclusions:

- 1. As a dominant trend of world economic development, globalization not only does not contradict, but rather stimulates the dynamics of development of individual regions and enhances their roles in the national and world economic processes.
- 2. In the opinion of the author, there are at least five factors that justify the need for designing a concept of the international competitiveness of regions:
- the emergence and development of a «new competition» as an effect of the law of uneven economic development under intensified globalization;
- changes in the system of international division of labor, namely: a deepening functional specialization, an enlargement of subjects of specialization, the development of territorial-functional specialization, a stronger vertical division of labor into intellectual and other types of activity exactly between individual regions;
- the impossibility of using existing instruments and methods for designing efficient national competitive strategies at the subnational (regional) level;

- the emergence and development of a «new regionalization»;
- the formation of a new economy based on knowledge.
- 3. The international competitiveness of a region derives from its capability under global competition, based on the efficient use of available traditional resources and the creation of unique resources from local development, to promote high productivity of labor and living standards of the local population and, accordingly, ensure its high competitive status in the geo-economic environment over the long term.
- 4. Stages of evolution of the concept of international competitiveness of regions: Stage I (1970-1980s) covers the theories of export specialization of regions and the theories of industrial enterprise localization; Stage II (1980-1990s) covers the development of theories explaining the formation of competitive advantages of regions; and Stage III covers the innovation model of territorial development. Thus, theories of regional development can be systematized according to factors in local dynamics.
- 5. Contemporary orientations of the development of the concept of international competitiveness of regions analyze them as centers of export specialization, sources of increasing profits, and epicenters of accumulation of knowledge.

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