

# The City-Region A Challenge to Globalization\*

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## **Abstract**

To the extent that globalization proceeds, increased external demand will require the mobility of production factors and the specialization in intensive technology production, which covers several areas of knowledge to meet the great needs of the global markets. The result of this emerging historical strength will prompt institutional changes and proclaim rational actions of investment and innovation in the production centers to transform their level of specialization. In this way, the centers of regional production, such as Bogota and its neighboring areas or large national capitals and its area of influence will have to adapt to new production processes, to meet the requirements that are attributed to the change of external demand. In this global environment, production for reasons of competition tends to be more specialized and geared to the production of goods with higher added value. A rigorous analysis of empirical samples resulting from the opening

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of the economy and the figures of foreign competition, as noted by the theoretical devices, suggests that the national economy experienced progressive convergence in signs as evidenced by found development indicators. The so-called convergence theory considers that at various stages of globalization the sources of capital and labor or shipping costs, show results that indicate that the convergence speed increases after making investments in infrastructure, education, and technological change. In an open economy historical forces and the movement of production factors, tend to move the production function and lead to a change in the slope of the function of growth. The test commonly accepted convergence sigma which refers to the standard deviation of the dispersion of income per capita or regional product shows a slight decrease as time passes. And convergence beta which is an index that shows the speed of convergence of the product of poor regions tend to grow faster than the prosperous in some particular cases. Analyzed evidence also points to comply with the postulates presented by authors such as von Thünen or Weber as occurred during the 19th century and according to the model of Sala -i- Martin also recorded signs of convergence.

Keywords: Convergence, City Regions, Globalization, Exchange Economies.

## Resumen

A medida que avanza el proceso de globalización, la demanda extranjera exigirá la movilidad de los factores productivos y aquellos intensivos en tecnología que abarquen diversas áreas del conocimiento. El resultado de esta fuerza histórica suscitará cambios institucionales y llevará a los centros productivos a transformar su nivel de especialización sus tareas y funciones. Los centros de producción regional, tales como Bogotá y sus zonas vecinas, u otras capitales y su zona de influencia tenderán a adaptarse en cuanto a sus nuevos procesos productivos, o responder a las exigencias atribuidas al cambio de la demanda externa, actuando como un fuerte estímulo proveniente del dinamismo del mercado global. En este ambiente universal, la producción tenderá a ser mucho más especializada y estará dirigida a la producción de bienes intercambiados en los mercados extranjeros. Un análisis riguroso de muestras cifras resultantes de la integración y apertura de la economía y la competencia extranjera, llevará a la economía nacional a experimentar muestras de convergencia en los indicadores entre las regiones menos avanzadas y las desarrolladas. La teoría de la convergencia económica considera que en diversas etapas de la globalización de las fuentes de capital, mano de obra y transporte, y los costos de transporte tienden a declinar cuando se alcanzan las inversiones adecuadas en infraestructura. En una economía abierta las fuerzas históricas y el movimiento de los factores de producción, tienden desplazar la función de producción o suscitar un cambio en la pendiente en la de crecimiento del producto. La llamada prueba de convergencia sigma que se refiere a la desviación estándar de la dispersión de la renta per cápita y la de las regiones económi-

cas, tiende a disminuir conforme pasa el tiempo. Mientras que la beta-convergencia que es un índice que muestra la velocidad de convergencia del producto de los países pobres o de regiones económicas retrasadas de un país, contrasta con la velocidad a la cual los más ricos se desempeñan en situaciones de apertura económica. Así las cosas, un espacio aparte merece el desempeño de las regiones más pobres que tienden a crecer más rápido que las regiones o los países más ricos. Desde el punto de vista histórico y también desde la estructura de la teoría del crecimiento convergente, modelos expuestos por autores como von Thünen o Weber durante el siglo XIX o Sala-i-Martin en los últimos tiempos, puede verse como un esfuerzo teórico para buscar estudios históricos y comparativos sobre el desempeño y aparición de determinadas industrias y lugares, frente a leyes generales que rigen la economía del intercambio.

*Palabras clave:* convergencia, ciudades región, globalización, economía de intercambio.

From the historical point of view and also from the frame of the theory of convergent growth, model exposed by authors such as von Thünen or Weber during the 19th century or Sala-i-Martin in recent times, can be seen as theoretical efforts to search for historical and comparative studies of particular industries and places versus general laws governing the exchange economy.

## 1. Transition to the world economy

Andre Layshon and other authors in the work “*Economic Geography*” observe that some historical schools concentrated on comparative studies and specificity about geography economics show how and why cities and regions developed. The author Roscher “... rejected universal theories in favor of particular theories based on simple description on specific phenomena...” and supported the idea that “...by induction we could establish general regularities and laws...” about city formation regional development and “... emphasized that comparative methods as means of theoretical study of the phenomena studies about how a country urbanization proceeds...” Other aspect considered by theoreticians and as a matter of permanent study among economic geographers to achieve a new form of development is the problem of convergent growth.<sup>1</sup> In the same work the author Johann Heinrich von Thünen was responsible of the advancement of a new notion of a location theory in regional science, and proposed an analytical device conceived as a historical-evolutionary approach to location of towns and also as an element that relates distance and area to focus different aspects of the so called productive investments in space economy.

<sup>1</sup> See Jurgen Essletzbichler. “Location Models” in Andre Layshon, Roger Lee, Linda Mc Dowell and Peter Sunley. 2011. *Economic Geography*. London, Sage Publications. P. 27.

Abstract and formal analysis alongside historical case studies are not easily placed on either side of the formal or deductive approach at one extreme of the analysis procedure, while at the other flank the purely contingent and inductive view ordered to identify causal forces such as transport cost and location patterns brought dynamism to competitiveness and increases in productivity (Essletzbichler, 2011, pp 24-25).

The particularity of von Thünen model is that he expects the emergence of a differentiated concentric rings or belts around an existing town, each with a staple product. From ring to ring the staple product and with it open farms to production is the change that will bring specialization of towns, encouraging in the various concentric rings different patterns of production. The work of James Parsons (1997, pp. 120-122) "*La Colonización Antioqueña en el Occidente de Colombia*" shows in chapter VI that the government of the republic issues favorable laws to encourage settlement in "valdios" or litigious properties to open around western Colombian towns lands to coffee production and as time passed, around new founded towns by concentric rings around provincial capitals like Medellín or Pereira their links encouraged diversifying their coffee economies that merged with the capital industries of the activities of manufacturing, banking and trade.

### ***1.1. Theoretical framework to regional development***

Recent empirical developments obtained from different countries statistics about GDP and per-capita income show that opening the economy or local economies, for some years, to world competition, leads to factor price convergence of regions and countries.<sup>2</sup> The "Convergence of growth" theory considers that in stages of globalization capital or open market practices, labor and transport costs tend to decline and the consequence of this historical fact leads growth of emerging market economies to grow even faster than gross domestic product in advanced and industrialized countries.

According to this new theory, an open economy forces migration of factors of production to diversifying regions or sectors, event that lead to rapid economic growth in developing countries, even at rates faster than in rich countries. This situation might also occur within countries-regions that diversify as the economy tends to be more open and competitive. The so defined sigma-convergence test relates standard deviation of per-capita income dispersion of economic regions with time. While beta-convergence shows the speed of convergence of poor countries, or a country's economic regions, index contrasting with rich ones when subject the economy to openness. The theory of convergent growth

2 See Williamson, Jeffrey G. "Globalization, Convergence, and History". *The Journal of Economic History*. Vol 56. June 1996. N° 2. Pp. 277-306. Navarrete, Juan. *Convergencia: Un Estudio Para los Estados de la República Mexicana*. Centro de Investigación y Docencia Económica. N° 42. México D.F. 1995. Sala-i-Martin, Xavier. "The Classical Approach to Convergence Analysis". *The Economic Journal*. N° 106. 1996. Barro, Robert y Xavier Sala-i-Martin. "Convergence". *Journal of Political Economy*. Vol 100, N° 2. 1992. Barro, Robert y Xavier Sala-i-Martin. *Economic Growth*. Mc Graw-Hill International Editions. 1995.

proclaims that poorer regions must grow faster than the richer in terms of real per capita income if some liberal conditions to trade are fulfilled. This quick view about the theory of convergent growth suggests that in a process of globalization the relative importance of regional economies and city-region approach to free movements of factors of production leads growth as a real possibility.

Of paramount importance for an emerging country's development is this consideration as suggested by Paul Krugman's theory, where shortened of distance to factors of production and complementary firms among them conglomerating lead to increases of productivity and competitiveness. These two variables are considered as important factors to sustain for permanent economic growth, where imperfect competition, scale economies and a rational location of firms within regions help a significance of transport costs reductions leading to increasing firm's activity an economic returns.<sup>3</sup> However the transition towards this stage of development may take years to be achieved and rational public and private investment has to be substantially increased.

Imaging how things happened in Colombia in the late nineteenth-century is possible to consider that if we did not have convergence at least in some coffee regions at least rapid accumulation of capital occurred in some other regions. However, in main producing areas determining an important development in some regional markets and city regions during mid-twentieth century after several firms clusters gathering around Medellín, Barranquilla, Bogotá and later on in other mid-size department capitals, concluded the stage of modern development achieved in Colombia.

Other type of proofs for convergence are those to determine permanent changes or not reversible or "path-dependent" as suggested by Douglas North in his notation about lock-in effects of institutional changes, element that uses as a methodological device call, the co-integration tests leading to fix those stochastic-convergence situations, and measure its effect by unitary roots of discrete series variables. In cases as this where income per capita shocks affect the sustainability of the growth rate lead also the production function to permanent changes as in the case of regional economies affected by open market stimulus after technological change. A historical national example well documented is the one case of coffee producing regions where constant immigrations encouraged the expansion of aggregate demand inducing structural change and the catching-up economic phase of these producing local regions compared with whole Colombian rate of growth. In defect of these tools we make conjectures or try to imagine how the Colombian economy linked its productive regions to world markets during expanding phases of the world commodities economy, or help to exploring other earlier experiences where conditions inherent to this development stage as of the coffee sector led to now explicable faster regional development pace and to cities expansion, process occurred just after initial

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3 Martin Ron and Peter Sunley. 1996. "Paul Krugman's Geographical Economics and Its Implications for Regional Development Theory: A Critical Assessment". *Economic Geography*. Vol. 72, N° 3, July, pp. 259-292. P. 263.

conditions of Colombian export market allowed for permanent changes in the regional emerging modern national economy development.

### ***1.2. Colombia gradually enters into the global market***

Colombia has historically experienced difficulty in linking strongly with international economy dynamics at least during nineteenth century exporting experiences with tobacco, indigo or quinine. During its nearly two centuries of constitutional history, it had to depend on the stability and credibility that a centralist government inspired in order to preserve national union thank to centralist policies. Only during the first half of the 20<sup>th</sup> century was it possible to allocate within the economy a stable stream of savings coming from export markets into the economy diversification. Industrial production gradually flourished to allow for competition coming from world markets. Industrial transforming activity progressed under the shelter of economic and geographic protectionism. And the advance of this economic activity, although convenient for earlier phases of economic growth as occurred in earlier 20<sup>th</sup> century, in circumstance, due to lack of foreign exchange and protectionism abroad, could not orient production to diversify and compete in world markets. Reaching international markets required the achievement of high quality standard products<sup>4</sup>. The particular cases of Colombian coffee, bananas and oil export production were associated with a steady increase in income growth and technological achievements. The structural change that followed and long term growth was the consequence of the formulation of long-term policy schemes to diversify the economy out of manufactures, commerce and banking. Market forces in Colombia developed after failures in the export activity of gold, tobacco, quinine and other export staple attempts during mid-19<sup>th</sup> century. With coffee exports, savings in foreign exchange and aggregated demand that spurred sustained growth, as perhaps happened in some other successful developing countries, also linked ours to industrialized markets where demand for raw materials was steady. Lack of an efficient and reliable transport system made export activity a difficult commitment and also an expensive one. The decade before 1930's Economic Crisis, was for the Colombia economy an exceptional one for initial conditions for growth as transport networks enlarged and improved wages and salaries increased creating a market demand in coffee producing regions.

### **Earlier colombian regional development prior to globalization**

The Colombian market economy, in its attempt to integrate into the world trading market economy, had to remove structural constraints and this was only a first step before succeeding in long-term growth. Before the era of large-scale foreign coffee trade expansion, structural transformations occurred within the economy to support an ex-

4 See the best work written on Colombian development of the Industrial Sector. Ospina Vásquez, Luis. *Industria y Protección en Colombia*. Editorial Santa Fe, Bogotá. 1955. Several pages.

port-leading sector. Attempts were made in the gold extracting activities, tobacco industry and quinine to mention a few, to succeed in the world markets as stable exporters. Political instability, continuous civil wars, regional geographical detachment and precarious production techniques within the traditional sector made the accumulation of capital a difficult process. So, Colombia had to first remove structural barriers that hindered competitiveness and link or interconnect regions, before allowing for a real national and integrated market economy<sup>5</sup>. World commodity price fluctuations since the mid-nineteenth century, hindered deep movements in total factor productivity after better combination of factors of production, before accomplishing sustained growth path and full integration into the world market-system. Shifts in world demand and consumer tastes affected producing countries determining recurrent export crises, both in the 18<sup>th</sup> and 19<sup>th</sup> centuries.

So the open economy model inspired in the spirit of nineteenth century liberal tradition that praised the advantage of the price as ideally the country was attempting to link the economy to the world market was merely a matter of hopeful expectations. A national interest in connecting the Atlantic and Pacific Oceans through an inter-oceanic canal acquired extraordinary dimensions by the decade of 1850, as a result of Alexander Von Humbolt's attention for forty years as registered in the several memories he wrote. The Free States of Spanish America requested him to write in such terms a geographical survey to foresee improvements in the communication system. Scientific literature discussed possible traffic lines and topological shortcomings to unite to oceans through Panama, especially the terrain east of the Portobello-Panama line<sup>6</sup>.

This institutional change for better communications attempted future improvements oriented toward trade expansion in the Atlantic. Seriously concerned with integrating into this enlarging market were the American West Coast States. Future economic expansion was highly dependent on maritime trade currents. South American southern tip route generated uncertainty and high travel costs. Panama communication improvement certainly implied new conditions for a further and larger trade expansion. Profound institutional arrangements were required to assure stable trading activities

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- 5 See the works of Beyer, Robert C. 1947. *The Colombian Coffee Industry:Origens and Major Trends 1740-1940*. Ph.D Thesis. University of Minnesota. Bergquist, Charles, W. *Coffee and Conflict in Colombia, 1886-1910*. Ph.D. Thesis Durham. North Carolina University. Harrison, J.P. 1952. *The Colombian Tobacco Industry From Government Monopoly to Free Trade. 1776-1876*. Ph.D. Thesis. University of California, Berkeley. Horna, Hernán.1970. *Francisco Javier Cisneros: a Pioneer in Transport and Economic Development in Colombia*. Ph.D. Thesis. Vanderbilt University. Bernhart, Donald S. 1953. *Colombian Transportation Problems ans Políticas 1923-1948*.Ph.D. Thesis. Chicago University. Neal, James Harold. 1971. *The Pacific Age comes to Colombia: The construction of The Cali-Buenaventura Route. 1854-1882*. Ph.D. Thesis. Vanderbilt University. Ocampo, José Antonio. 1998. *Colombia y la Economía Mundial. 1830-1910*. TM Editores. Bogotá. Parsons, James 1948. *Antioqueño Colonization in Western Colombia*. Ph.D. Thesis. University of California.Berkeley. Palacios, Marco. 1979. *El Café en Colombia 1850-1970. Una Historia Política y Social*. Bogotá.
- 6 See the work of Efraín Sánchez. 1999. *Gobierno y Geografía. Agustín Coddazi y la Comisión Corográfica de la Nueva Granada*. Banco de la República. Ancora Editores. Bogotá. Colombia. pp. 324-329.

between East and West Coasts of the United States. President Mosquera of Colombia first attempted uniting Pacific and Atlantic Oceans in Panama by means of constructing a railway<sup>7</sup>. The consequence of this institutional improvement was associated with a rapid fall in transport costs and in the increasing comparative advantage of export activities including world-traded commodities<sup>8</sup>. The political consequence of this North American initiative was highly expensive for Colombian stability and for Nation-state sovereignty. The French Panama Company went bankrupt in 1889 having concluded less than half of the trajectory, creating a difficult relationship with the United States, due to its emerging geopolitical and economic interests. This emerging difficulty concluded with the secession of the isthmus. In 1902 the Wisconsin Treaty signed on the ship of the same name ended the Panama Revolt and in Washington the Herrán-Hay Treaty concluded with the secession of the territorial stream where the Canal would be constructed. Colombian's lack of political commitment to the agreed treaty terms concluded November the 3rd of 1903 with the Panama Revolt. Panamanian animosity towards the Colombian Central Government was said to have originated with tax distribution of "Compañía del Ferrocarril de Panamá"<sup>9</sup>.

The last century's moral order, political space, economic theory and entrepreneurial spirit, which seems to repeat itself, was impregnated with a delirious feeling derived from the Rionegro blossoms of 1863, when we launched our most liberal Constitution of the 19<sup>th</sup> century. That historical experience was probably successful as a political projection, but misleading from a practical point of view, given that the country at that time was still regionally disjointed and the volume of exports per-capita was quite low to assure initial conditions to sustained growth.

There was not then an agency to organize national public priorities or take advantage of propitious initial conditions for growth or selective investment in productive investment for larger local market and expanding world demand. Communication channels for knowledge diffusion were imperfect or disconnected. The low level of savings and investment impeded incorporation into world trade markets in manufacturing or modern agriculture, and world demand for goods concentrated on other products not already available in Colombia.

Therefore, access to dear modern technology caused the process of successfully competing with goods produced in Europe to remain incipient. Neither did we possess ideal mechanisms for removing obstacles to growth, capitalizing companies and adequately in-

7 The work of León J. Helguera. 1958. *The First Mosquera Administration in New Granada, 1845-1849*. Ph.D. Thesis University of North Carolina. Contains details on the discussion about railway programs in Colombia during the Mosquera regime.

8 See the work of Douglas C. North, 1968. "Economic Growth of the United States before the civil War. In Theberge, James D. *Economics of Trade and Development*. John Wiley & Son. New York. Pp. 71-73.

9 Bushnell, David. 1996. *Colombia una Nación a Pesar de si Misma*. Planeta. Santafé de Bogotá.



corporating modern technologies into production. River and seaports were deficient and thought by North (1966) to be inconclusive. Railways failed to form any kind of network for initial conditions, as they still do today making transport costs a heavy burden for competitiveness. The financial fabric, although not speculative, after the fashion of Don Judas Tadeo Landínez, still failed to satisfy investment needs excepted for companies able to compete on a regional level or perhaps world basis. The low savings level deterred San José de Suaita traditional textiles from growing and developing industrial linkages according to the expected path to derive into productive clusters to later compete with foreign markets<sup>10</sup>.

It is difficult to presume that if market forces are allowed to operate on a larger scale, while abiding by simple rules, like free determination of prices, autonomous establishment of market rates of interest, and liberal rates of exchange determination, will lead markets to behave as a world-system. Needless to say, a world market defined in this simple manner will behave predictably, thus scientifically allowing the prediction of the future growth path. Thus, questioning the validity of trade as the engine of growth of the whole economy requires more than a simple econometric prediction<sup>11</sup>. The economic policy framework established by many nineteenth-century countries and by more than thirty different countries at the end of the present century is believed to be the best political economy model able to endure dynamic consequences for growth, as current literature attributes to 19<sup>th</sup> century open world market country economy.

Colombia's economic policy framework has experienced some trials in opening the economy and allowing market forces to operate. Nineteenth century governments appealed to the liberal expectations especially after the 1863 Liberal Reform, and on the verge of the 21<sup>st</sup> century to what is denominated neo-liberal policies to improve competitiveness of the country as trading blocs and global market economic rules seem attractive enough to accelerate development. Foreign trade gains and free movement of capitals encourage businessman to organize for profit without much thought to the long-term impact on growth and welfare of the real economy. World market access sometimes has been unstable for business activities mainly for political reasons, one of the immediate effects of which has been to diminish external encouragement for growth. Lack of government administrative experience or entrepreneurial talent, fluctuating world commodity prices and intermittent flows of capital affected proper institutional development to induce

10 Brew, Roger. *The Economic Development of Antioquia from 1850 to 1920*. Ph.D. Thesis Oxford 1973. Bell. P.L. Colombia, a Commercial and Industrial Handbook. Washington. 1921.

11 See Krugman, Paul. "Emerging Market Blues", *Foreign Affairs*. Vol. 74. N° July/August 1995. p.30. and "Depression Economics Returns". *Foreign Affairs*. Vol. 78. N° 1 January/February 1999. p. 56. The second payment crisis in Mexico in almost a decade, together with Argentina's, Venezuela's, Brazil's and Asian Economies in the nineties and the 2008 global financial crisis as observed in this work's corresponding chapter, with financial debt, exchange and financial difficulties, present an invitation to reflect on the "advantages or difficulties" of the neo-liberal economic model and how this crisis affect integration to the global market.

economic variables to sustained economic growth. Needless to say that the 20<sup>th</sup> century experience helped to accelerate changes in regional economic development and city-region processes lead to the appearance of more than one thousand municipalities scattered around the country geography and more than fifty regional capitals with more than one hundred thousand inhabitants at the turn of the 21<sup>st</sup> century. So now explore what in geographical economics terms means this gradual country's transformation process encouraged by a systematic approach to globalization.

## 2. The role of geography

Despite this one century's political efforts to integrate the country into a single unit and to develop a systematic political discourse to interpret how the State and the private initiative could integrate missing parts of the Colombian Geography, the advantage of exploring emerging developments via geographical economics tools allows us to see how or at least what conditions were and are required to achieve development targets in the early and actual globalization era both for regions and towns. After exploring emerging theoretical considerations we will search some empirical evidences developed that may allowed policy makers to attempt lines of policies to be followed by governments just to make out of regions and city-regions competitive on a global world basis.

As an element of analysis useful for policy making purposes, we reviewed current literature including first of all Krugman's works (1995, p. 39 and 101; 1996, p. 23) to examine his theoretical view on geographical economics and contrast how his idea coincide with Colombian historical development in these matters. And secondly, advance considerations on competitive advantage suggested by authors like Porter (1998; p. 82) who regard issues like specialized clusters as very encouraging for regional and city-region policy making in regards to furthering growth. Following these proposals and as third aspect, some institutional arrangements are considered, such as the creation of specialized investment banking, not only to promote policies to face opening the economy to foreign trade, but also to attract risk and venture capital to create world competitive advantages within firms. Development projects and modernization of existing firms' thorough capitalization, mergers and research and development activities allow for world standard competitiveness.

Concrete policy recommendation have to be based on empirical work where a discussion may open wider possibilities for development in a region of a country, such as the city-region of Bogota or Medellín and their corresponding zones of influence. This event, viewed in the light of the effects and opportunities that the global economic liberalization produces both, in the dynamics of current trade and investment trends. More empirical and policy oriented tools need to be developed to orient clusters creations that will make of the productive chain internationally more competitive. Risk venture capi-

tal and new modes of technology transfer are necessary for increased investment flows as suggested by Lall<sup>12</sup>.

We will trace as a research approach the principle conceptual and theoretical elements developed with respect to what is called first the new geographic economy, second the theory of convergence, and finally will examine new aspects related to global competitiveness attributed to the city-region approach to long range sustainable growth. On the latter point, the aim is to frame the meaning of the city-region within a new sphere of discussion leading to regional development and preparing competitive centers as platforms to compete internationally.

The new theoretical principles developed in economic geography, such as the theory of the location of centers has been explored by Krugman (1995, p. 39 and 101. 1996, p. 23), and the assumptions of the theory of convergence developed by Barro and Sala-i-Martin (1995) allows for competitiveness and endogenous growth. Regarded this model initial conditions are considered as a fundamental to accelerate growth at a pace faster than in developed countries and to generate via agglomeration scale economies and increasing returns to scale. Other factors that determine regional and urban growth as formulated by authors such as Perroux and lately Porter (1998; p. 82), search for the impact of better working markets under conditions of competition. Porter with other authors who advance institutionalist economics suggests that it is the accumulation of technological knowledge that determines progressive endogenous growth in an urban economy.

## Colombia faces regional and urban development

A brief note on the history of Colombian regional development trend that deepens the introductory section is useful to understand changes in economic development. This change has been the consequence of a process of political confrontation, economic policy experiments, and demographic transition and of emerging infrastructure conditions among others that make Colombia development so unique. The economic conditions imposed by the outside world and by a growing interdependence among local markets facilitated increased trade flows and productive investment on a national level. This long and complicated process was possible thanks to historical factors that allowed regional specialization and the learning of new activities as explained by authors such as Ospina Vásquez (1955), Parsons (1997), López Toro (1976) and Sáenz Rovner (1995).<sup>13</sup> Departmental capitals, in the case at hand, are a good example of regional

12 See Sanjaya Lall. *Investment, Technology and International Competitiveness*. In John H. Dunning and Kahlil A. Hamdani. 1997. *The New Globalism and Developing Countries*. United Nations University Press. Tokyo. P. 235.

13 López Toro, Alvaro. 1976. *Migración y Cambio Social en Antioquia Durante el siglo XIX*. Bogotá. Cede. Ospina Vásquez, Luis. 1974. *Industria y Protección en Colombia*. Medellín. Oveja Negra. Parsons, James, 1976. La

development in which mining, coffee and industry led to acceleration in the process of capital accumulation.

The dimension of the process required a formidable pace of private and public investment and wise allocation of profits in productive activities and deepening of investment in public infrastructure works, a venture that had always been accompanied by private initiative. This strong productive effort helped bring the department or regional communities into a closer commercial relationship with other markets. This process was like a virtuous cycle or self-sufficient and happily complemented on a reinvestment of the economic surplus generated by trade and industry in which associative investment policies helped increase production with the thought in mind of reaching an extended national market. Since the decade of the 30s, more dynamics was impressed on 19<sup>th</sup> century's regional development, so government economic policy oriented its activity toward supporting social and productive development in the principal urban centers and regional capitals through the use of economic surplus generated in the countryside. This transfer of surplus took place through the tributary route, but also through readjustment of relative prices with which the real income of coffee farmers and other crops was more or less sustained. Since then, the transfer of part of national savings generated in farm and livestock activity and from foreign trade business became a source of financing and the development of the urban sector in which productive activities associated with the modern sector of the economy prospered. This act imposed by policy gradually favored the modern sectors to the detriment of traditional agricultural activity in the countryside, with which the performance of many townships was retarded, delaying the process of productive incorporation of many agricultural zones and bordering zones into the national productive process. Many regions, cities, small communities and vicinities experienced since the 30's crisis a slow growth rhythms and social progress, there being a higher degree of welfare in the large cities and rich departments, which thereby emphasized the social dualism that today concerns and astounds so many people.

We must remember that with colonization, the regional model was based on the principle of "progress is to colonize". Therefore, expansion of the regional development and settlement process affected the redistribution of income in coffee producing regions. As a consequence of exporting activity, some important development of railway, transportation and industrial manufacturing activity was generated in the principal regions and cities of the interior of the country (McGreevy, 1976). As large urban centers appeared, a consolidation and interconnection between national regions became evident, as did the continual process of industrialization throughout the country (Ospina Vásquez, 1976), concentrated in the regions that are today the richest ones, generating productive activities associated with manufactures, trade and finance. Development of the modern sector stimulated asymmetric growth causing the relationship between the development of

urban centers and that of the regions to be unequal. For this reason, some regions were unable to integrate into the national market, remaining relatively or absolutely poor as they continued to be subsistence economies. This is a reality that still affects the identity of the nation and the solidity of the nation-state. To adopt open economic models such as those existing prior to 1930 is nothing less than placing the various regions and economic sectors of the country in competition for capital and investment opportunities and search for convergent growth.

During the period in which this model of competition was in force at the beginning of the century, following culmination of the Thousand Day War, there could be seen a greater degree of productive efficiency of the regions specializing in productive activity for foreign trade, favoring trade and exchange. It also became evident after this conflagration that there was an improvement in the levels of education and managerial capacity leading to an improvement in the possibilities of strengthening capital reproduction processes. It is obvious that these very slow improvements became a requirement for greater regional and urban growth. Modern development theory suggests that it is social investment and improvement in education and technological change indicators that provide the basis for pronounced and sustained growth in regions in the long run (Barro, 1995, p.27)<sup>14</sup>. These criteria give some faint hope, since it is expected that with their application and perhaps complement of a transfer of resources by the State and Private Investors toward regional economies and public utilities investment should become the mechanism that would promote in the future new signs of social progress.

Let us not forget that Colombia, like many other countries particularly in Latin America, opened in the decade of the 90s its economy to trade and foreign investment and made institutional reforms for the purpose of competing in foreign markets. The 1991 Colombian Constitutional Reform allowed for the development of an extensive political program of economic liberalization, the orientation of which is well known to all. The prevailing concept with respect to regional policy was to stimulate economic, administrative and political decentralization inspired by the strengthening of a territorial development process. Since then, regional autonomy has been conceived of in terms of granting greater “independence” to regional and municipal governments in their decision-making process for budget allocation, and later establishing that institutionalization of investment would promote municipal and regional development. This modern view of Regional Development was taken from three different lines of argumentation the aim of which was to suggest new policy alternatives in the area of regional investment, supported by new constitutional mandates<sup>15</sup>. First, it was taken into account that

14 Opening the economy to new financial sources and the incorporation of local and international risk capital sources and relegating State subsidized credit lines to attend some other humanitarian pursues, opens opportunities to encourage the new regional development model where private investment should take the lead.

15 Correa, Nestor Raúl. *De la Organización Territorial*. Comisión Colombiana de Juristas. 1996. Ver los Artículos 285 a 331 sobre disposiciones generales, régimen departamental, municipal y especial.

the Political Constitution granted powers to foster new social investment that would stimulate regional development and welfare, based on fulfillment of some proposals, scopes and limits. Secondly, powers were granted to the private sector so that, based on its entrepreneurial capacity, it would undertake investment that would be complementary to that made by the policy prevailing prior to liberalization of regional entities, so as to stimulate the development of peripheral regional economies. The idea was to accelerate the rhythm of growth in the poorest regions of the country, reaching rates of growth higher than those achieved in developed regions during periods of prosperity. The third line of argumentation suggests that according to new trends in investment policy in social sectors, regional growth indices could be increased-with which poor regions could soon catch up to the rich ones-thereby validating neo-liberal assumptions of convergence of economic growth on both a worldwide and regional level.

From an institutional point of view, government policies proposes to link the different sources of public and private savings to the regional and urban capitalization process, in an attempt to promote activities related to an improvement in competitiveness. In this area research points toward policy guidelines, such as establishing financial mechanisms, like the creation of the Regional and Urban Development Bank (*Financiera de Desarrollo Teritorial-Findeter*), institution that attempted broadening its functions of credit bank into an investment bank and opening of new credit lines to regional development through Law 141 and 142 of 1991. Its purpose and further institutional developments would be associated to foster the sustainability of regional capitalization, supporting risk capital investment into public utilities. However, despite those government efforts, regions lacked a similar kind of institution specialized in encouraging productive activities that associate new technologies, stimulate exchange and raise levels of education in the regions. National economic growth, therefore, must in the era of globalization come from the impetus and expansion of the domestic market as well as access to other overseas and distant markets and the linking of regional investment that generates externalities, economies of scale and closer ties to the international economy. Deepening competitiveness culture among investors as has been suggested will allow that the international economy that demands goods and services with high added value and an extensive technological base on opening opportunities for new knowledge economy investment.

## Theories of regional development

Economic history shows many examples of successful regional development experiences. Deeper theoretical research approaches to regional development adapt macroeconomic models used in aggregate growth theory and on interpretation of a region's growth in terms of the dynamics of industrial structure tending to formalize regional development. A larger and appreciable set of theoretical approximations tend to explain and

link the problem of regional and urban development, a framework within which certain determinants are established that condition growth and development as a phenomenon within which geography and economics intervene. Regional development, as a theoretical conception, has acquired several supports from physics in order to clarify or relate forces of attraction and repulsion among factors and even extend this view to international trade relations searching for virtuous growth circles.

The most notable of those theories deal with *gravity analysis-where time-space and market size are leading variables*, is an approach based as we said on an analogy with physics models. Here the movement of people and factors is positively correlated to the mass of two urban points that are separated from each other, and inversely proportional to the degree of friction to movement between the two points. This friction is understood or measured according to the distance that separates the population centers, time and the cost consumed in this movement. The effective existing demand among regions and urban centers that act as “attractors” relates to stratified purchasing power, effective demand and commercial and industrial influence of these poles on the rest of the population mass. The interest concentrated on this approach derives from some type of correspondence between international trade theory and regional development. Linking this apparent different view shows that the greatest exchange exerts a multiplier effect that improves living standards in cities and rich regions that undertake commercial exchange operations amongst themselves (Meyer J.R, 1965, pp. 247-248). These structural elements used by many regional and urban development analysts, establish how attraction between population groups takes place from the regional periphery toward the urban centers and explain causes about excessive and rapid growth of urban centers.

The general model based on classical criteria of trade theory suggests that in the face of a lack of duties placing limits on goods and services traded among producing regions, the comparative analysis of factor costs as well as the effect of a reduction in costs of inputs and even transportation, simplifies the basic concept of the traditional trade model. With this, it is possible to undertake certain empirical verifications, that tend to determine if there is or not a multiplier effect associated with the larger degree of trade of factors among cities and regions in a market that we could call or define as broad. Models such as this have been taken into account by authors such as Gouëset (1998, p. 13) in order to analyze the origin and expansion of trading cities. Furthermore, to determine why different size cities develop in a country according regional development factor endowments, finds its answer in a quadri-cephalic development of Colombian cities as announced and registered as so closely tied to the evolution of the very particularities of economies of the different Colombian regions. Perhaps one of the reasons that explain this autonomous growth of city-regions derives from the need to satisfy, on the one hand, the minimum requirements of self-consumption in each of them. Then, this growth on attributed to the need to overcome obstacles ascribed to the demands of outside markets. Or to the attraction or economic complementation that is generated

between city-regions that are distant and geographically isolated from each other. The current regional model in Colombia apparently seeks to cause the propagating effect that technology has on productivity in modern production schemes to increase substantially the volume of trade exchanged among regions that are or were historically separated by distance, culture and institutions.

### 3. Theoretical developments on regional and urban economics

Some of the most widespread traditional or conventional theories on regional and urban development that have attempted to make progressive approximations or explanations to actual situation, and which at their time were very complete, now appear to be partial are:

- Localization theory
- Economic geography
- The approach of cumulative causes and location for growth.
- Regional development and sustainable growth

#### Localization theory

A brief review of this first theoretical initiative seeking answers to the theme of regional development, attempts to clarify why specialized and conglomerate economies that locate themselves only in some geographical areas in each country have progressively arisen within the economic activity of regional and urban development. From a collection of experiences, this model interestingly proposes to study the reason production and labor cluster together or agglutinate in certain regions of the economy more than in others that are apparently well equipped or endowed with productive factors. We may also ask ourselves why in larger urban centers, when there are special conditions, the companies or economic sectors progressively specialize, particularly in certain very characteristic parts of each one of the cities<sup>16</sup>. In these models, like North's the topic of investment location has been one case of study and interest, particularly for the observers that appreciate the occurrence of decaying activity in city centers<sup>17</sup>. Other analysts join the theory of localization with competitive advantage criteria, a notion particularly useful to connect our

16 See work of Michael Porter who has been developing new criteria that attempt to explain the nature of the causes of cities' internal development in diverse contexts. Among his works the following are pertinent: Porter, Michael, "New Strategies for Inner-City Economic Development". *Economic Development Quarterly*. Vol 11 N° 1. February 1997. pp. 11-27.

17 It is interesting to take into account the work of Douglas C. North. 1955. "Location Theory and Regional Economic Change". *Journal of Political Economy*. Vol. 63. pp. 243-58. It aids in understanding the development of this scheme of thought and points out the origins of the role of institutions in this new approach.



initial conditions for success in linking the economy into a world-system. From these extended criteria, they justify how accumulated investment in cities and metropolitan areas becomes a motor of its development and how on occasions the profit derived from them becomes an important element that promotes the creation of new investment for world competitiveness. With this incentive, an ideal element to attempt in-extenso sustained competitiveness of the regions is recovery of city centers, maintenance of the rhythm of expansion of the cities and impetus to other urban segments seeking for knowledge economy signals.

## Economic geography

The theory of localization has been subject to new theoretical input since its formulation by authors such as von Thünen, Weber, Christaller and Lösch, that were concerned with establishing the reason for a consistent type of relationship between location theories and investment. In the first case the town is the only market for sale and there is a uniform system of transport over a flat surface. The second has a uniform culture, climate and area in the same area, perfect competition exists and there is a uniform system of transport. The third model, suppose that there is plain homogeneous unbounded and limitless surface and consumers have a similar purchasing power and there is a uniform system of transport over a flat surface. The third is similar in the subject of surface and transport possibilities but technical knowledge is disseminated throughout the plain and production opportunities are available to all of them (Essletzbichler in Leyshon *et al.*, 2011, p. 31).

Von Thünen deduce the results of historical-evolutionary approach to location theory noting a sharply differentiated concentric rings or belts around the towns exists, and each ring with its own particular staple product, and with it the entire farming system. The various rings are completely different from farming systems (Essletzbichler in Leyshon *et al.*, 2011, p. 25).

Years later on a different theoretical approach that includes conditions of optimization in the production function as proposed by Krugman (1993, 1995 and 1996) he concludes advancing a theory in these topics and in his survey on economic geography by finding that this location and distance becomes an important factor explaining regions and finally countries economic growth. In his work "*Increasing Returns and Economic Geography*", proposes a revised view on Thünen and Albert Hirschman theoretician interpreters of economic development, after considering that when transportation costs are minimized, it is possible for firms to reconsider their decisions to locate investments thinking in the possibility to change sites, especially if a sufficiently large demand for goods and services can be identified to justify these changes in their investment structure.

In his exploratory analysis, Krugman suggests that the criteria pointed out by Marshall on external and agglomeration economies is the fundamental reason that determine the

reason for relocation of firms in the geography. First, because the location of a firm in a developed region obeys to the fact that there is an abundant pool of trained labor there and that this reason is what determines change in investment. Second, the industries located in a particular region, are supported by the production of specialized inputs that are not found outside. Third, spill-over effects increase the formation of a niche where the production of other goods is more favorable than when they are located in an isolated place<sup>18</sup>. He suggests that under certain circumstances, income distribution objectives and geography's own objectives combine better in particular regions of a country, which acts as a factor that helps sustain the development and capital accumulation process. Commerce and trade depend, therefore, on the level of industrialization, specialization and support among regions or city-regions (Martin, 1996, p. 1).

One apparent consequence of this scheme is that in the long run, sustained development in large urban centers, such as the cases of Bogotá or Medellín have depended on continuous improvements in the internal and external transportation system, having connected them to the outside and with important regions within the country. This theoretical approach indicates that hinterland cities may conserve its growth rhythm none withstanding that they tend to specialize production to compete abroad. When transportation costs are reduced in a city, among cities or among city-regions, it is possible to generate economies of scale in production and trade costs. Based on these cost reductions, economic agents will invest more in those city-regions where they can attend to a greater demand and where the supply and access to inputs they need are lower priced and therefore their accumulation is justified and their acquisition facilitated. The creation of this or these new conditions is propitious to investment in the regions which will reinforce the development of new productive activities that consolidate the specialization of regions (Martin, 1996 p. 5).

Krugman considers that in order to sustain uniform growth of one or several cities, the regional economies must form interlocking poles of growth, so that productive investment can reach higher levels of efficiency. The generation of chain effects or as it is called "backward and forward linkages" as suggested by Hirschman, or value chains proposed by Porter means that the advantages being generated in a specific region will produce cumulative effects that sustain the development process. The author named argues that investment in social sectors, such as water systems or schools, improves social welfare. But that it does not in and of itself, contribute to raising and sustaining the rhythm of growth in the long run, nor the accumulation of capital in a city-region. He concludes by stating that it is necessary to complement these investments with commercial initiatives that promote trade with other regions or abroad.<sup>19</sup>

18 For the origin of this concept see Krugman, Paul. "Increasing Returns and Economic Geography". *Journal of Political Economy*. Vol 99. N° 3. University of Chicago. 1991. p. 485.

19 Traditional regional development theory attempts to explain some elements that define regional trade, particularly taking into account the causes that explain the level of exports or trade in goods and services. Growth in trade flows is

Other authors such as Porter, have gone even further on the topic of chain effects, sustaining that region and city-region development is associated with the formation of clusters or conglomerations of companies thinking more on generating scale economies. In these cases, the function of governing powers is related to determining, establishing and promoting new investment opportunities while the entrepreneur is the agent that takes the business risks. In the new business theory proposed by Krugman, specialization of economies depends on particular historical circumstances or accidental factors, but also rescues the fact that when there is imperfect competition and growing yield, policies can be adopted to promote regional trade and production of goods that will generate economies of scale that favor the appearance of externalities. It is in this way that technology, which does not always act as a public good, but rather a tradable one, can become concentrated to induce greater endogenous growth of urban centers by generating high added value.

### **The approach of cumulative causes and location for growth**

Krugman's works on economic geography, *Development, Geography and Economic Theory* (1995, p.88) and *The Self-Organizing Economy* (1996) offer a better view of previously presented works and are rather suggestive as to inquiring into the relations that may exist between economic development and economic geography. These works discuss the innovative role of Albert Hirschman's theories of linkages and unbalanced growth. This theory relates the aspects of growth via circular and cumulative causation, old view on economic development, aspect that has theoretical weaknesses in that its mathematical focus is not sufficiently rigorous, and for that reason it has not gained the credibility that such an approach would deserve within the guild of formal economists. He connects these ideas with what he knows about economic geography, such as the spatial relationship between cities. The author mentioned considers that this link is a starting point that has no turning back for the development of empirical work by formalizing it through the development of a mathematical theoretical framework in which integration mechanisms are established between two theories rich in discussion, but for the moment poor in predictive power. In these works criticism is based on the fact that it does not appeal to suppositions derived from the growing profits of competitive monopolistic industries that manufacture non-tradable inputs.

The point here is that there is an attempt to explain the principle of agglomeration as a consequence of the interaction between growing profits at the level of individual production plants, decreasing transportation costs and the influence of factor mobility

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associated with higher levels of growth and improvement in local employment levels. The theory of decentralization and regional development incorporates criteria such as comparative advantage and factor endowment into its analysis, as factors that explain the causes associated with growth. Analysis is more complicated when criteria of geographic and spatial distribution are included to confirm the causes of urban growth.

on the model. For this reason, the analysis is complemented with the following reasoning on backward and forward linkages that join traders and suppliers, making them more efficient with respect to the process of resource allocation in order to promote transportation and to stimulate the administrative process toward a reduction in the costs of production and transactions. The model referred to suggests that the market potential acts as an incentive to the installation of new factories in urban centers or peripheral regions, the dynamism of which comes from the weighted sum of purchasing power in all locations, involving relative weight of these, and making it depend inversely on the distance that separates them (Krugman, 1995, p. 89). Its relationship established with the traditional development model of cumulative causation depends on the fact that the initial advantages come from historical accidents. Such is the case of the location of Bogota, as capital of the Viceroyalty, and Medellin as the capital of the province in a specific strategic location at different moments in historical time, with which we attempt to explain the origin of their locations.

Another interesting aspect of Krugman's model is that it proposes a solution to the absence of microeconomic bases for the traditional geographic theory. To this end, it first suggests that the model's externalities come from market interactions in which economies of scale play a role in the area of individual companies. Second, with respect to the effect of wages on the cost structure, it accepts as a normal occurrence that on the average, the labor force linked to modern sector has higher salaries. Thus, he builds and integrates a dynamic model that incorporates parameters, such as the following in his analysis:

- Proportion of expenditure dedicated to the production of industrial goods.
- Transportation cost of each good from one point to another.
- Substitution elasticity between agricultural and industrial products.

This scheme integrates the labor force in a matrix of distances, and proposes a proportional allocation of workers in each sector. The construction of the model is complemented with the articulation of a set of relations that incorporate short and long-term equilibrium. The model ends, by drafting the existence of scenarios in which it warns that when the proportion of expenditure dedicated to industrial goods in any economy is large, industrial concentration becomes accentuated, such that it can grow in a self-sustaining way due to the strengthening of backward and forward linkages suggested by Hirschman. We can expect the concentration of companies to be greater when the proportion of expenditure is devoted to the generation of industrial goods. The decisive factor that introduces instability into the model is the cost of transportation. This is needed for movement of agents and for economies of scale through the effects of agglomeration and for labor costs to remain lower than transportation costs. In no other way will the virtuous effects of concentration remain over time.

For our dissertation work, these principles are very important, since they are an invitation to think about the content of the city-region as the basis of a process in which factors and markets are integrated, transportation costs reduced and synergies generated from the agglomeration of companies that export or sell outside the city-region. As soon as this process comes to a halt, the crisis of the colonial and industrial substitution models affects the future of urban development.

The foregoing considerations are important in order to find some transcendental meaning to the future development of cities and strategic regions and especially linking their economies to foreign trade activities and world investment currents as claimed by globalization principles. Possibly not as an unlimited process of growth of urban centers or city regions, but rather in terms of finding new and appropriate economic functions for these cities and regions reorganize its development process. That is, it is necessary to think in terms of a new regional and world division of labor and specialization in the productive activity. To exploit these points, it is necessary to first take off from notions such as that part of the trade between countries and regions is due to specialization, which is promoted by generation of growing profit scales, even when there is a scarcity of endowment of factors. Second, when specialization induces growing profit and economies of scale, the profits from trade originate from the reduction of costs and the increase of the production level. Third, specialization is originally the fruit of an historical accident that can generate cumulative gains from exchange and yields from scale. Fourth, retribution of factors in imperfect competition conditions is a function of technological change to guarantee self-perpetuating growth. Fifth, the existence of imperfect competition and growing profits from scale becomes the new stimulus to designing strategies aimed at promoting regional and international trade through activities that generate economies of scale.

Once these basic principles have become integrated we can reach preliminary conclusions about policies susceptible to promotion. We can see that in various cases, the State is the agent that can play a decisive role in the sustainability of growth of the economy of an urban center or a city region, such as it is doing in China, or in the process of promoting the development of the technopolis, an idea to compete in and with global markets. In these cases, political action is aimed at promoting a change in the pattern of specialization, seeking with this to generate competitive advantage. By limiting public investment to the rendering of basic public services, its action is reduced to granting economic stimuli, which in any other case would serve to lend impetus to specialization and improvement in the level of trade between regions and the outside, forgetting that businessmen need a renewed atmosphere to compete in faraway markets that are infinitely more demanding.

*In conclusion*, in the new trade theory proposed by Krugman and other economic geographers, although the emergence of the city regions it may be the result of accidental factors it is no less true that conglomeration of complementary investment activities it induces growth of those previous backward economies on a new pattern of cumulative

causation profits. The new theory vindicates the fact that when there is imperfect competition and growing profit, policies can be adopted that promote investment and complementarities and regional trade and the production of goods that now generate economies of scale and externalities. With respect to the topic of free mobility of productive factors, in the case of technology, it does not always act as a public good, but rather as a tradable one. This means that postulates of the theory of convergence do not always occur in all cases, showing the divergence of the model although this trend might be changes after government pronounces infrastructure investments. According to these general criteria, it can be concluded that the new theory of trade establishes: first, part of the trade between countries and regions is due to specialization which promotes the generation of a growing scale of profit, even when there is an abundant endowment of factors. Second, when specialization induces growing profits and economies of scale, the profit of trade originates in the reduction of costs and increase in the level of production. Third, specialization is the fruit of an historical accident. This accident generated cumulative profits from trade and profits of scale. Fourth, compensation of factors under conditions of imperfect competition is the function of technological change. Fifth, the existence of imperfect competition and growing profits of scale becomes the new reason to stimulate the design of strategies aimed at promoting regional and international trade, particularly in those activities that generate economies of scale or technological breakthroughs, or profit income that helps to sustain a high rhythm of regional development.

Therefore, the State can play a decisive role in the sustainability of growth of regional economies by promoting a change in the pattern of specialization, seeking with this to generate competitive advantages. Thus, in regional economies, just as in the theory of international trade, the fact that trade and integration are beneficial to strengthening the degree of development, increasing trade and mobility of capital and labor is an attractive alternative to improve regional competitiveness. For this reason, specialization in regional production for trade and commerce, promotes economies of scale and externalities (Martin, 1998, p. 10).

## **Regional development and sustainable growth**

There are many conceptual reference frameworks that try to elaborate theories that can explain regional development and its connection to urban development, or the opposite to global markets. The importance of these considerations link to fact that the expansion of the world-system open opportunities to globalization. Deeper insight is required to understand how develops the linking conditions of local markets to access to world trade. Each one of them offers a part of the explanation of the origin of our principal problems and policy developments in the globalization era. For example, the theoretical approach of unbalanced development proposed to seek an explanation for the fact that there are many regions in a country that grow under adverse economic conditions and others that are unable to take off, even with a good factor endowment

and even less able to accelerate and uninterruptedly continue their process of capital accumulation, or develop and modernize their agricultural activity or lend dynamism and innovation to the industrialization or mining process with transforming complementary activities. This retardation may even be greater under favorable conditions of world trade rules where exchange occurs among modern sector activity. The unbalanced growth and development model proposes, for example, the promotion of activities that pull other sectors along, sometimes being the government one of the principal promoters, introducing policies that artificially unbalance relative prices by means of subsidies and reference prices or induced investment<sup>20</sup>. On this topic, the literature warns about the existence of obstacles that must be removed first in order to grow or strength links to world markets, one of them being “economic and social dualism among regions”. It may be considered that this factor, so wide spread in many regions, retards investment activity (Meyer, 1965, p. 247).

The obstacles approach coincides with modern discussion which advances to the point where it suggests that with regard to the importance of rescuing proposals and investment criteria to progress in the selection of regional development projects that facilitate the accumulation process. This in order to overcome problems related to poverty and the low level of regional and urban capital accumulation and even lack of real possibilities to compete in the world market. There are other economic trends that suggest that the State can contribute to solving poverty by mobilizing savings resources toward regions by appealing to social investment criteria.<sup>21</sup> Under this assumption, it is extremely difficult to identify the exact causes and remedies of poverty and of lack of world competitiveness. Therefore, fitting regional and urban development policies to considerations of equality and distribution of benefits requires a very deep institutional analysis. When the analysis involves factors such as the growth of population, nutrition, development of the work force, mitigation of poverty groups, elimination of depressed regions, measurement of development or the selection of appropriate policies, what is needed for conclusive analysis and structuring of policies is something more than the participation of the private sector.

More precisely an enormous concentration of combined forces is needed so that civil society and government action can be turned into signs of progress. To make the right policy decisions when there is such heterogeneity and a dispersion of the factors of poverty requires a broad institutional commitment. The World Bank and other philanthropic organizations promote growth through the adoption of structural reforms. It is hoped that these measures by increasing the speed of economic convergence will mitigate the signs of poverty in regions or in the long run faster or sustained growth. In the

20 See the work of J.R. Meyer, 1965. Regional Economics: “A Survey”, in *Surveys of Economic Theory*. Growth and Development. Volume II. MacMillan. London. P. 241

21 See also the work of Johan Van Zyl, Tulio Barbosa, Andrew N. Parker and Loretta Sonn. 1995. *Decentralized Rural Development and Enhanced community Participation*. A case Study from Northeast Brazil. Washington. World Bank.

case of Lewis' model on the mobility of excess labor in the countryside, suggests that during some of its early phases the symptoms of poverty in the rural zones became more pronounced, until the best skilled workers were lost and the process of regional investment did continue.<sup>22</sup>

One interesting example of the continuity of the poverty problem and unequal development in the country happened in Brazil, a nation that is structurally similar to Colombia in that 19% of the country's area experiences levels of poverty and 30% of the population spread out through such a large country, adds up to as many as 140 million people. Twelve million rural inhabitants in Northeastern Brazil live in conditions of absolute poverty, where the level of their income is less than US\$214 per capita<sup>23</sup>. Evidence there indicates that the poverty problem and backwardness require a reformulation of institutions and policies that are more elaborated, so that more direct action by the State is justified in order to accelerate growth and compensate for the signs of inequality. A good set of stimuli and of institutional reforms that bring the State closer to the process of decentralization and investment help balance growth. Infrastructure projects, water, electricity, health and telephone and telecommunications projects help accelerate growth and capitalize poorer or lagging regions. The nature of the problem gains increasing degrees of complexity when considerations regarding trade advantages are considered.

For Colombia, which is a country of very diverse regions, to design a set of productive investment strategies at the municipal level or even wider regional level requires a timely response by governmental institutions, the governing class and the investment sector, particularly if deep economic activity is to follow to have access to global markets. New investment policies help stimulate regional development, making it an interesting and timely priority objective. But for this to happen, policies that promote long-term growth, ensure regional competitiveness with respect to economic centers and allow wealthy regions to help others become integrated into the national market must be identified first (Ramos, 1995, pp. 13-19). This simple criterion is urgent, serious and interesting, since the analysis of data by the Departamento Nacional de Estadística- DANE, has warned that regional development in Colombia is still unbalanced and unequal. Between 1980 and 1994, years of freer trade and open market the twenty four departments economy grew at a numerical average rate 3.18%, while fifteen departments grew at averages lower than the national and among the regions there are still some that are not even reaching rates anywhere near

22 Lipton, Michael and Martin Ravallion. 1995. *Poverty and Policy*. Handbook of Development Economics. Vol IIIB. North Holland. Holland. P. 2560.

23 See the work of Johan van Zyl, and Tulio Barbosa, *et al.*, 1995. *Decentralized Rural Development and Enhanced Community Participation. A case study from Northeast Brazil*. World Bank (RPO 679-68). P2. Poverty indicators alone are eloquent. Life expectancy is 58.8 years *vs.* 64.9 as the national average. 34.5 percent of the population under 10 is illiterate. Work productivity is 50% of the national average. Infant mortality is growing and 19% of the children suffer problems of malnutrition. 57.9% of poor housing as no running water *vs.* 27.9% for the national average. 84% of the housing in poor zones has no access to minimal sanitation facilities.



the rate of population making it very difficult to attain objectives of convergence or benefit from the impetus of globalization. During the period 2000-2011, thirty two regions grew at a rate of 3.862% while departments like Meta grew at a rate of 11,45% per annum others did less well like Arauca that did grow at an average annual rate of 0,229%.

Other empirical results come from the fact that economic growth and convergence as doctrine suggests that growth between countries differs and depends on the level of production of each. It establishes that if growth is below the “Steady State” on a country as given a range of “Catching Up” is a process or phenomenon that occurs if is accelerated under the transfer of technologies in the production process. In theory, there may be a rapprochement or closing gap of 2.5%, phenomenon subject to developing countries to eliminate some obstacles that slow development. Other empirical surveys to explore the behavior of the factors that determine economic growth among countries over time corresponds to the case of China, which grew at average rates of 9.5% during the past decade, while advanced countries such as the United States and the United Kingdom grew around 3.5%. This behavior although predicted by convergence theory still generates concern for introducing corrective measures in policy guidelines<sup>24</sup>.

#### 4. Discussion on regions and convergent growth

In a discussion of economic liberalization and the behavior of economic growth, the topic of convergence acquires renewed interest given that we suppose under conditions of economic liberalization, the least developed regions even in a developing country like Colombia with regional institutional disparities and differences in factor endowments tend to have higher growth rates than the wealthy economies in some particular cases. The validity and universality of the model must be proved both at the international level when comparing country experiences and at a local level where regions should show signs of convergent growth. In order to delve deeper into the criteria of convergence, three principle concepts must be described in reference to the topic. A more detailed analysis of these theoretical developments goes beyond the scope of this exploratory research work and it is suggested that the pertinent bibliography including recent cases be analyzed<sup>25</sup>. The *first* case refers to the concept of *Sigma Convergence* that considers the

24 Barro, Robert y Xavier Sala-i- Martín. *Economic Growth*. Mc Graw-Hill International Editions. 1995. Sala-i-Martin, Xavier X.. 1996. “The Classical Approach to Convergence Analysis” *The Economic Journal*. Vol 106. July. Pp, 1019-1036. P. 1020. Xavier Sala-i-Martin. “The Clasical Approach to Convergence Analysis”. *The Economic Journal*. Nº 106. 1996. Barro, Robert y Xavier Sala- i-Martín. “Convergence”. *Journal of Political Economy*. Vol 100, Nº 2. 1992. Navarrete, Juan. *Convergence: A study for the States of the Mexican Republic*. Center for investigation and economic teaching. Nº 42. México D.F. 1995.

25 Navarrete, Juan, 1995. *Convergencia: Un Estudio Para los Estados de la República Mexicana*. Centro de Investigación y docencia Económica. Nº 42. México D.F. Sala-i-Martin, Xavier. “The Classical Approach to Convergence Análisis”. *The Economic Journal*. No. 106. 1996. Barro, Robert and Xavier Sala-i-Martin. “Convergence”. *Journal of*

dispersion in a transversal cut across per capita incomes. It is said that *Sigma Convergence* occurs if the dispersion in per capita income, expressed in terms of the per capita income variation coefficient declines over time. The numerical analysis takes into consideration the standard deviation of regional populations expressed in terms of the logarithm of per capita income in the different time units. The *second*, refers to *Beta Convergence*, which occurs when per capita income of poor regions within a universe of countries or regions of a nation grows more quickly than the group of wealthy countries or regions, such that the poorer regions catch-up to the wealthy ones in terms of per capita income over time.

Empirically this convergence is portrayed as the set of points representing the annual average real income rates at each point in time during a particular period. The line of regression, thus obtained, of the sample population must be negative in order to establish the degree or speed of convergence. Otherwise, there is divergence. It is said that Beta convergence usually behaves in the same manner as Sigma Convergence, but said behavior can be affected by disruptions that tend to increase the dispersion of the transversal cross sample<sup>26</sup>.

The third case refers to *Stochastic Convergence* the definition for which uses notions of single root and co-integration. In this model convergence in per capita income has as a condition that the permanent shocks in the economy be associated with the permanent change of the regional economies. The convergence condition of this model is that deviation in regional per capita income relative to national per capita income, and shows a stochastic process where the mean of which is not zero<sup>27</sup>.

The work of the authors Barro and Sala-i-Martin called "*Determinants of Economic Growth, at Cross-Country Empirical Study*" slogan reads "Lionel Robbins Memorial" at the London School of Economics, and exposed aspects of economic growth and convergence. They offer explanations about the interrelationship between economic and political development, and finally consider the effects of inflation on growth.<sup>28</sup>

To define these concepts various authors makes the following distinctions first between the two major definitions:

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- Political Economy*. Vol 100, N° 2, 1992. Barro, Robert and Xavier Sala-I-Martin. *Economic Growth*, Mc Graw-Hill International Editions. 1995.
- 26 Sala-i-Martin, Xavier X. (1996). "The Classical Approach to Convergence Analysis" *The Economic Journal*. Vol 106. July. Pp, 1019-1036. P. 1020.
- 27 In analysis of convergence it is indicated that the evidence of time series along, is insufficient to explain the concept of convergence, even if the hypothesis of unit root of regions within a country is rejected. There may be dynamic externalities that influence regional growth. Regions with abundant human capital can act as agents that lend incentive to innovation with which the rate of regional growth is raised in relative terms to a greater proportion than those regions with less human capital endowment. One cause of divergence that may appear stems from the fact that agglomeration economies are positively associated with per capita income and growth of regional income. When growth has exogenous causes Beta convergence is not necessarily guaranteed.
- 28 Barro, Robert J. (1999). *Determinants of Economic Growth. A Cross-Country Empirical Study*. The M.I.T. Press. Cambridge.

1. The known as *sigma convergence* or **Convergence**  $\sigma$  relates to standard deviation of income per-capita and deviation standard of the rich countries along time line.
2. The change in the *beta convergence* or **Convergence**  $\beta$  refers to the index that shows the speed to which poor or failing countries converge along other richer regions or countries, argument measures by the reduction of the standard deviation between them.
  - a. One of the conditions of this model is that economies are open to trade and investment.
  - b. Convergence believes that in a State of globalization and open trade, markets international, prices of factors like capital, labor and transportation costs decline over time, and tend to balance out.
  - c. In an open economy, the migration of the factors of production forces lead to a rapid process of economic growth, even greater than that of the industrialized countries<sup>29</sup>.
3. It is said that there is **Convergence**  $\beta$  when a group of countries or regional economies converge, that is, experience a long-term trend to decrease the dispersion of the per-capita income, until match point.  $\beta$  measures the speed of convergence that is the time in which the dispersion of capita real income reaches its long-term trend. The rate of GDP annual growth rate *vs.* the logarithm of the per-capita real income<sup>30</sup>.

*Thirdly*, important distinction is the observed in the relationship between  $\sigma$  and  $\beta$  as suggests by the theory. If the convergence beta  $\beta$  tends to be a declining index respect to the convergence range of the dispersion  $\sigma$  important thing is to say that occurs only if the variance of the error declines since:

$$S^2 = S^2 e / (1 - (1 - b^2)).$$

Insofar as the variance of the error comes up, decrease  $\sigma$  and  $\beta$  may occur and at the mean time it can increase a variance of the disturbance term, where the sign problems in  $\beta$ , may lead to convergence  $\beta$ , although in this particular case there might be a *necessary but not sufficient condition* for the convergence of  $\sigma$ .

29 See the methodology of Ron Martin and Peter Sunley. "Do Solow Convergence? "The New Endogenous Growth Theory and Regional Development". *Economic Geography*, Vol. 74, N° 3. July 1998. pp. 2001-227 Page 205. The calculation of the Betas is carried out based on the regressor:

$$(1/T)\ln(y_{t,t+1}/y_t) = \alpha - \beta \ln(y_{it}) + \varepsilon_t$$

30 Sala-i-Martin, Xavier X. (1996). "The Classical Approach to Convergence Analysis" *The Economic Journal*. Vol 106. July. Pp, 1019-1036. P. 1020.

#### 4.1. Further evidences of convergent growth

As stated the model of economic convergence has the following purposes to measure and compare the development and speed of growth per-capita. First, it allows determine under free market conditions, income real capita of countries in the process of development-or regions of a country, that tend to grow faster in terms of real income against the economies of advanced countries-or regions within the same country. Under free market conditions, countries with lower degree of development have a speed of convergence greater than the developed countries.

In the *Mexican* case, there is also no consensus with respect to the convergence hypothesis among researchers (Navarrete, 1996, p. 26). The first conclusion of this work indicates that there is no clear evidence of convergence conditioned on the specified variables, and that the speed of convergence is too slow. In the model when budget transfers and federal public investment are included as variables the results show greater negative convergence and greater speed. Upon separating the information on poor and wealthy states, the results are significant for the variables and the participation of physical and human capital as would be expected. However, the increase in the convergence coefficient showed no significant change. The speed of convergence was about thirty years for the two cases. There is some evidence that the State is in the process of convergence toward greater levels of welfare, but this is a slow process for 32 states.

It also concluded that wealthier economies converge among themselves over a period of thirty years. Poorer economies adjust to the model, but nothing conclusive can be said about convergence within a specific time period. The distance between rich and poor can remain indefinitely. The difference between states is lessened, but only where the levels of product per capita are similar. The fact that allocation of public resources toward different economies does not propitiate convergence remains a concern. Unequal treatment by the State has generated unequal development in the country. Krugman's contribution in terms of economic geography tends to offer a clear explanation of the divergent behavior among regions, worthy of more careful study.

*Italy's* case as an industrialized country shows that after World War II author Paul Rosenstain-Rodan in his famous article on the problems of industrialization in southern Europe caused the academic community to realize that market stimuli alone were insufficient to spur the growth of poor regions. A "big push" was needed to spur growth. Recent studies (see Leonardi, 1997) suggest that in a considerable number of macroeconomic variables such as per capita gross product, levels of personal consumption, capacity to export locally generated products or to attract sources of foreign investment and capital continue to be greater in the regions of central and northern Italy, in fact the most dynamic in all of Europe. In southern Italy, economic growth occurs but is slow and this is not a phenomenon affecting the entire country. The evidence suggests that regional development still depend on local factors such as the community values and standards.

There tends to be a correlation among the effect of policies promoted by local economic and political institutions and economic growth. The local factors promoting productive investment exert an influence on sustained rhythm of regional growth in a more emphatic manner than the effect of policies and programs adopted by the central government. In spite of the fact that between 1994 and 1999 the European Community will allocate about 144 billion ECUs to regional development, there is a general consensus that this investment will lose its chance to accelerate and sustain the growth process if it does not involve the local communities, attract risk capital, promote the presence of social capital, emphasize civic culture, induce political agreement and support an institutional response.

Institutionally, the presence of the House for the Development of the Italian Mezzogiorno a type of regional development Bank contributed to rationalization and selection of investment priorities for regional level projects. In this sense, this is where it is important to introduce changes into Territorial Development policy, in order to make the institution into a project bank, aimed at managing, promoting, selecting projects, associated investors, marketing the actions of the companies, financing projects thus making these initiatives profitable and sustainable. Investment in water systems, sanitation and education are one of the priorities that must be complemented with other investment possibilities. The sole identification of projects is not enough to promote sustained development of regions, unless other managerial components become involved in order to accelerate growth and adapt regions to policy changes.

In the *India* case and as a consequence of regional diversity, they have tried to establish the causes of poverty and regional inequality. From the viewpoint of consumption patterns, the degree of inequality has diminished and in some cases is above the poverty level. However, recent evidence shows that at the regional level, disparity between regions has increased. In terms of consumption per capita, neither does evidence allow us to confirm tendencies that mean improvement, but rather what have been noticed are sharp fluctuations in the convergence indicator (Kumar, 1996, p. 365).<sup>31</sup> Within the context of economies open to international trade, it is argued that external competition eliminates national competition in production centers, which weakens backward and forward linkages. This is reason enough to justify emphasis on political support in a search for better distribution and promotion of commercial and entrepreneurial activity among regions (Kumar, p. 366).

Pioneer authors such as Nurkse, known for his argument about the cumulative causes in development processes, argues with good reason, that in under developed countries, the role of the State as an agent that promotes a decrease in regional inequalities is very weak. He insists that its participation can help the poorest regions to accelerate their growth,

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31 In India, the political cost of decentralization have been identified with the confrontation among rich and depressed regions. Nevertheless, they invest as much there as here in unproductive current expenses, coming from government transfers.

to the degree that the effects of a diffusion or spread of knowledge for these cases can be definitive in accelerating the accumulation process. The effect of this participation is particularly disturbing when the degree of regional inequality is accentuated. In this case, the Kuznetz effect must be taken in to account in the analysis of regional development, especially in the first stages of growth, when regional inequality increases. Later in the process and when certain conditions are fulfilled this phenomenon tends to reverse itself and the trend. The change only occurs when the poorest regions accelerate their growth rhythm. And, as a consequence of the capital formation and the accumulation process springs from better operation of the price setting mechanism more stable growth (Kumar, 1996; pp. 366-8). This theoretical argument requires a rigorous empirical proof, since it is not easy to determine the causes that relate national economic growth and a decrease in inequality in the distribution of income among regions. Kumar Das concludes in his argument stating that evidence on regional disparity in growth in India, generates disturbing expectations, precisely because there was cyclical behavior from 1970 to 1992. The experience there suggests that the variation or rather the decrease in the inequality indicators both for income and consumption is accentuated over the duration of the period studied.

In terms of sustainability, the regional growth model is more interesting, because it allows us to closely observe some elements that militate against the hypothesis of convergence, such as the transfer of tax resources collected in poor regions and channeled into the government treasury in amounts that exceed the sum of transfers. It frequently occurs that part of private savings generated by the financial sector is transferred to other markets outside the region. Situations often arise in which social investment in education and health in poor regions is unjust in terms of per capita with respect to the wealthier regions. Altogether, it must be warned that situations such as this justify the presence of the state apparatus in order to correct distortions. The State as a vehicle can correct defects in the market, which makes their participation worthy in order to promote the transfer and permanent participation of sufficient savings resources, contributing to setting criteria of fairness that will favor the poorer regions. It is interesting to note in terms of equality or fairness that in other cases the State, without trying to, can contribute to fostering inequality by urging the transfer of taxes toward regions with intermediate development, neglecting thus the urgent needs of the poorer regions.

Since the process of economic liberalization and openness to world markets began in India in the 80s, economic liberalism has not eliminated regional disparity in income mal distribution. Among regions and between non-organized sectors, disparity has grown, especially in terms of product and employment. Traditional agriculture due to its loss of dynamism in the sphere of liberalization has been the sector that has most greatly contributed to increasing the level of regional inequality. It is also worth clarifying that the effect of reduction in inequality has not been accentuated or evenly distributed among some regions, due to the fact that the more organized and productive industries locate

themselves as usually occurs in the wealthier regions. Much has been written on the topic of convergence in growth, and India as one case is not the exception.

One of the *conclusions* that Paul Cashin<sup>32</sup> reaches is that convergence in raising income in some regions was a consequence of the aid that was granted by government to the poor to undertake projects. Talles suggests that this was the case because the government took into account the explanation of the Solow model, which suggests that regions with an initially low ratio of capital to labor, are those that progressively raise their per capita growth rate more rapidly, or because by accelerating the migration to cities or wealthier areas, or by redistributing income toward the relatively poorer areas, by means of sustainable investment projects they help induce convergence. Furthermore, due to the fact that adding to the capital stock generates substantial increases in product, particularly when the regional capital stock is low. Another source of explanation lies in the fact that it was a deliberate step taken by government, which stems from application of the idea that by raising the intra-regional mobility of capital when its savings is invested in new sustainable projects, the speed of convergence is lifted; that is, the growth rate of the poorer regions exceeds that of the wealthier regions.

## The Colombian experience

At the end, it is argued that poor countries should grow faster than rich countries economy, measured in terms of real income per capita income proposition that not always occurs as observed with data we collected for periods 1980-1994 and 2000-2012 in Colombia. First, because to the **Convergence**  $\sigma$  to occur this phenomena depends on the dispersion of per capita income, and this dispersion must decline with the passage of time proved certain conditions. Divergence is the result by national figures, perhaps because the development conditions of distant Colombian regions from Bogotá, Antioquia or Valle del Cauca to mention the riches in Central Colombia is due to the fact that they enjoy difference in factor endowments like those provided by the provinces of Llanos Orientales or the Amazonian region. The empirical analyses provided by the DANE figures shows that the standard deviation of small regional population located in big geographical areas shows that in terms of the natural logarithm of income where the index is not very different from that of developed regions is due to the fact that the larger size of peripheral regions contraries the effect on smaller and wealthier ones. Evidence suggests that when we group large, medium and smaller populated areas in Colombia, the slope of the **Convergence**  $\beta$  tends to decline in the less populated areas even faster than in larger regions, where divergence is the constant observed. Therefore the catch-up assumption

32 See the work of Paul Cashin and Ratna Sahay. "Regional Economic Growth and Convergence in India". *Finance and Development*. March, 1996. Vol 33. N° 1 p. 49.

did not work well during the earlier phase of the globalization process when income per capita of poorer regions grew faster than in more developed Colombia regions.<sup>33</sup>

Some years ago the Colombian case has been analyzed by several authors including Mauricio Cardenas. His work offers an empirical explanation of the behavior of determinants of regional growth. He investigated income convergence by region and inhabitant in several regions of the country. His study answers three questions related to the existence of per capita income convergence in the different regions, the role of migration in this behavior and possible causes for more rapid growth in some regions than in others. He analyzed why from 1950 to 1989 production and income grow rapidly in poorer regions with respect to richer ones.<sup>34</sup> Twenty-four territorial units were studied and on the average a negative correlation can be seen between the per capita income logarithm and the average rate of growth in GDP per capita. The Departments of Chocó and Guajira demonstrated a higher rhythm of growth due to exogenous factors such as investment in Cerrejón, which partially explains why the convergence process was negative. Convergence was also present on an interregional level, so that the gap between per capita incomes in wealthy regions compared to the poor ones decreased. The correlation among average per capita GDP growth rates and per capita income is small, thereby indicating that full assumptions about convergence are weak.

In our empirical research analysis, we study another recent statistical base that gathers evidence published by the DANE for the period 1980-1994, with which comparison is interesting none withstanding the series is somewhat short. Some preliminary conclusions are offered based on these new figures that rather differ from those given by Cárdenas with respect to regional growth. First, it is shown that according to the figures in Graph N° 1, the real rate of average product growth in each of the twenty-four departments is calculated including the sample and this figure is related to the regional GDP for 1980. By associating these variables for the period under analysis and by performing the regression of this sample, it can be shown that the Convergence  $\beta$  test does not explain or conclusively shown if there is convergence. The correlation coefficient is very small and the variable coefficient is almost zero. Hence it may not be concluded that during the period of economic liberalization there was any growth in the per capita GDP for the departments which would confirm signs of convergence, that is, that departments with a lower per capita income had improved their real income over time, with respect to the more prosperous regions. The figures on Convergence  $\beta$  for the eight wealthiest departments, the middle income ones and the eight poorest ones show a very small correlation coefficient, meaning that it can-

33 Solow, R.M.. *Growth Theory. An Exposition*. Clarendom Press. Oxford. 1973. Romer, Paul M. 1990. "Endogenous Technological Change". *Journal of Political Economy*. N° 98. October. S.71-S.102. Xavier Sala-i-Martin. "The Clasical Approach to Convergence Analysis". *The Economic Journal*. No 106. 1996. Barro, Robert y Xavier Sala- i-Martín. "Convergence". *Journal of Political Economy*. Vol 100, N° 2. 1992.

34 See the work of Mauricio Cardenas, 1994. "Crecimiento y Convergencia en Colombia:1950-1990". In Steiner, Roberto. *Estabilización y Crecimiento*. T.M. Fedesarrollo. P. 218.



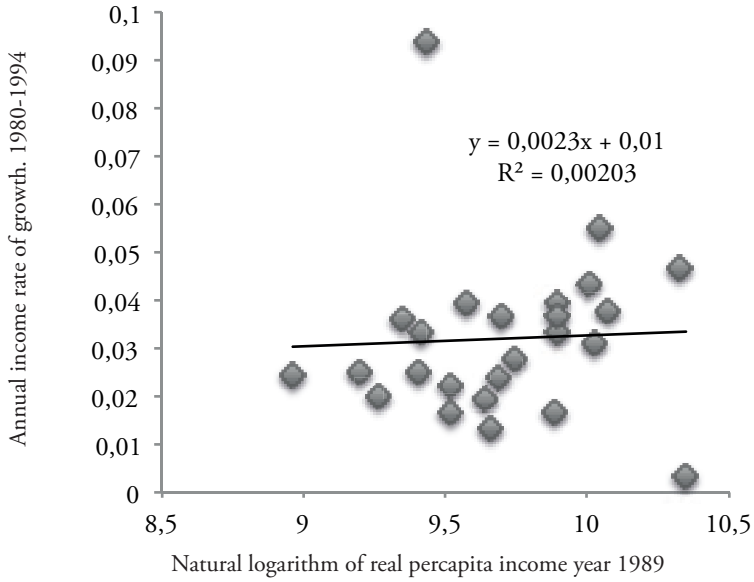
not be concluded that there was any strong convergence process during the period mentioned, that is that the poor regions had accelerated their per capita income growth rate in relation to the national average. Inasmuch as the sign of the coefficient is concerned, it is positive, except in the group of the poorest departments, indicating some convergence. However, the correlation coefficient lacks a sound degree of significance. Second, according to Graph N° 2 which lists the logarithm of standard deviation for GDP per inhabitant of each of the twenty four regions studied during the period 1980-1994, the coefficient of the variable for regression is positive. The correlation coefficient of the line showing trend is 0.94. In this case, some divergence can be seen, which would contradict a postulate of the convergence theorem, and therefore it may be concluded that over time dispersion of per capita income increases in poor regions for the period from 1980 to 1994. Third, in order to identify some causes of this behavior, a correlation analysis was done on the annual growth rates of the national economy and that of each of the regions and among the various regions for the period indicated. It can be seen in the matrix of regional growth correlations with respect to annual national average, that out of a total of 378 calculated correlations, there are 120 that are negative and only 26 over 0.5. Greater than zero and less than 0.5 there were 232 of them. Therefore, from the calculations referred to, there is very little correlation in the regional growth process taking into accounts the combinations of pairs of regions and the regions with respect to the national aggregate.

These results may be interpreted to mean that there is a very high degree of disjointedness and little interdependence among the growth rates of the national economy and those of the regional markets within a national environment. This raises the question whether we are becoming ever more distant from the possibility of achieving an integrated national market, one reason which makes it urgent that long term policies be designed to promote regional development. Hence, the effort that the country is still needs to exert in terms of regional investment is quite substantial, before being able to speak of an integrated national market. The investment that is made in basic infrastructure must be complemented with the association of private capital in the regions in order to raise the rhythm of regional growth, and to benefit the national economy to the degree that an integrated market is consolidated.

Years 2000-2011 show that Convergence  $\beta$  obtained from a 34 regional sample of Colombian Departamentos has a negative coefficient, meaning that there is a slight convergence tendency. However the correlation index of 0,1072 proves that both variable are poorly correlated, so regional income growth is not much related with per-capita income growth. Convergence  $\sigma$  has a strong correlation coefficient between dispersion of per-capita income with the time variable, however the sigma coefficient has a positive sign proving that divergence tends to occur instead of the expected convergence hypothesis provided by stated theory.

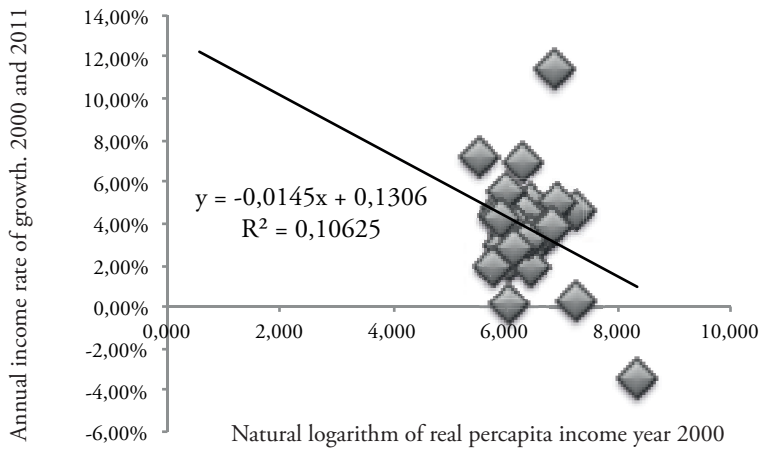
**Graph N° 1.**

Convergence  $\beta$  and convergence  $\sigma$   
 Years 1980-1994 and 2000-2001

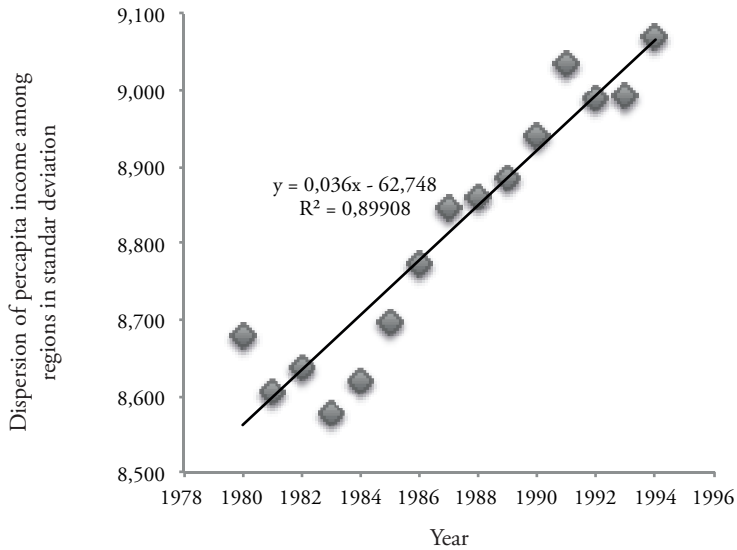


**Line of real percapita income - convergence in 32  
 Departments 2000-2011**

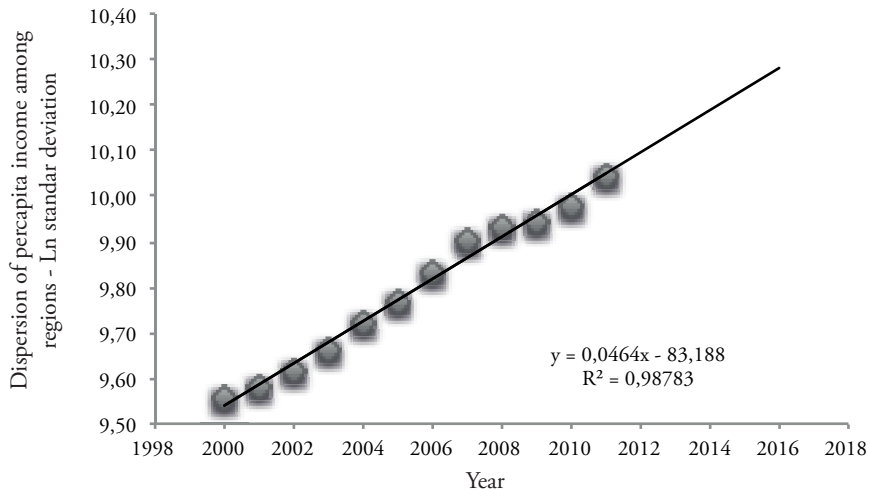
Convergence  $\beta$



**Inequality of percapita income among  
Colombian 24 regions 1980-1994**  
Convergence  $\sigma$



**Inequality of percapita income among 34 regions**  
Convergence  $\sigma$   
2000-2011



Source: "Dane-cuentas departamentales" and author calculations.<sup>35</sup>

35 Convergence  $\beta$  and Convergence  $\sigma$   
Methodology:

## Endogenous growth theory

Ron Martin and Peter Sunley study cases of slow convergence on regional Development as we observed occurred in Colombia particularly in isolated regions. They start the discussion arguing that Marxist models of uneven regional development and regional cumulative causation determine long-term trajectories. In the 1980s long term growth has reappeared back to economists' research agenda. In regions within a nation are much more likely to share similar structural characteristics. However, "in firms of different regions within a single country they tend to have access to dissimilar technologies although might share common central government and institutional set up". While a cause of slow growth of regions is ... "that they tend to be geographically dispersed". On the other hand "new endogenous growth shows to different sorts of increasing returns defined as endogenous broad capital and endogenous innovation may be a virtuous condition for growth" pattern that should be more homogeneous in all country regions to sustain even development.<sup>36</sup>

The first endogenous model refers to "capital investment as generating externalities and emphasize human capital and relate technological change to learning by doing and endogenous innovation". The second type "develops endogenous innovation growth the-

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Convergence of Real per-capita income in 24 and 32 departments. 1980-1994

Convergence  $\beta$

To find out the average growth rate of the departmental product during a period.

Use formula = TASA(14;;)-B5;C5).

That provides the years during which grows the product (14) and

where  $B_i$  measures at year one and  $C_i$  measures the final year of product of each Department.

Then take the inner product departmental capita of year zero and calculate the Natural logarithm.

Draw the Cartesian map of the Natural Logarithm of the domestic product.

As a diagram of departmental per capita income with the actual growing rate of the departmental internal product correlates during the period analyzed the speed of convergence  $\beta$ .

A positive slope of the coefficient measures if there is convergence b or divergence if the coefficient is positive.

A close to one correlation coefficient measures whether there is a close correlation between the variables.

Natural log of per-capita Real Income and the annual departmental product real growth rate.

Convergence  $\sigma$

Methodology:

Calculating the value of the gross domestic Departmental product per capita, at constant prices of year zero.

Calculate the departmental GDP at constant prices for years to analyze the situation of convergence.

Calculate the standard deviation of the average of the annually departmental GDP in study.

Calculate the Natural logarithm of the average of the departmental GDP of annually points in study

And perform the linear regression of Cartesian points of the Ln of the average of the departmental GDP for every year of study.

The slope of the regression measures the speed of convergence if negative or divergence if positive.

And the  $R^2$  measures the dispersion of the average points.

36 Martin Ron and Peter Sunley. 1998. "Slow Convergence? The New Endogenous Growth Theory and Regional Development. *Economic Geography*. Vol. 74, July, pp. 201-227.

ory and is labeled Schumpeterian because it emphasizes the returns to technological improvements arising from intentional innovation by producers". The endogenous model modifies the conventional neoclassical production function to include externalities to investment, learning by doing effects and spillovers of knowledge as knowledge becomes a public good with zero cost. Martin considers that the endogenous model portrays technological progress as a result of international research and education. Investment in human capital generates spillovers which increases productivity of physical capital and labor force. (Martin, 1998, pp. 208-209).

New Growth Theories are defined finally as:

- Augmented neoclassical- with human capital and exogenous technical progress available.
- Endogenous broad capital- with capital investment and knowledge spillovers.
- Intentional human capital- where convergence is dependent on returns to investment.
- Schumpeterian endogenous innovation-produced by oligopolistic producers with technological diffusion and imitation. (Martin, 1998, p. 209).

Other models of geographical economics proclaim for regional development the avenue of emerging firms to undertake research and development as new products to earn monopoly profits and when these firms cluster around complementary and competitive activities of other firms, international competitiveness arises. Imperfect competition allows firms to capture larger profits to cover costs of R&D. Innovations become the intermediate inputs to other firms as proclaimed by Hirschman (1957). Opening the regional markets to global competition helps to improve specialization in industries and sectors where there is scope for technology spillovers and specialization of labor intensive industries. These returns are based geographically on localization and in scale economies as predicted by neoclassical models.

- The author Clay found in a sample of one hundred countries from the year of 1965, identifying elements that influence the development, the adoption of:
- Public policies that promote capital formation.
- Orient the Human Capital production in the modern sector
- Spread the advances of technology between companies. Endogenous growth theories propose that based on the discovery of new ideas and methods of production is the economy's long-run growth<sup>37</sup>.

37 Barro, Robert y Xavier Sala-i- Martín. *Economic Growth*. Mc Graw-Hill International Editions. 1995.

## Krugman geography and growth model

Krugman in his extended works on trade seen in the foot note, we see he has developed the economic geography theory that analyzed his based concepts specifically on the theory of the location, and that related productivity gains to the regional growth with the reduction of transportation costs. The purpose of the work of Krugman “*Increasing Returns and Economic Geography*”, inquires about the reasons that generate increasing yields, which arise in the economy and the externalities generated by the agglomeration of investments. In Krugman (1993,1995 and 1996) is structured this material and their concepts of economic geography, enabling it to propose formulas to minimize transportation costs and relate them to the location of enterprises, with the places where they had more demand, better infrastructure and mobilization of the abundance of skilled labor.<sup>38</sup>

The idea of location as a business decision that depends on availability of specialized inputs and the effects of irrigation “spill-over” is an inspirational condition to form niches of production to derive gains of trade and increasing returns of capital.<sup>39</sup> The theory suggests that under particular conditions combine situations of distribution of income and regional comparative advantage that has a direct impact on capital accumulation. Trade

38 Krugman, Paul. *Peddling prosperity*. New York: Norton, 1994.

Krugman, Paul y Venables, Anthony J. Globalization and the Inequality of Nations. En: *Quarterly Journal of Economics*. 1995, November, Vol.CX, N° 4, p. 857-880.

Krugman, Paul. *Inestabilidad de la Tasa de Cambio*. Bogotá: Norma, 1991.

Krugman, Paul. *Development, Geography and Economic Theory*. Barcelona: Antoni Bosch, 1990.

Krugman, Paul. Increasing Returns and Economic Geography. En: *The Journal of Political Economy*. 1991, vol 99. N° 3. p. 493-499.

Krugman, Paul. *Geografía y Comercio*. Barcelona: Publicado por Antoni Bosch, 1992.

Krugman, Paul. La Organización Espontánea de la Economía. The Self-Organizing Economy. Barcelona: Antoni Bosch, 1996.

Krugman, Paul. The Return of Depression Economics. Bogotá: Norma, 1999.

Krugman, Paul. *Desarrollo, Geografía y Teoría Económica*. Barcelona: Antoni Bosch, 1995.

Krugman, Paul. *The Return of Depression Economics*. Bogotá: Norma, 1999.

39 Ver las siguientes obras de Krugman para el desarrollo del concepto. Paul Krugman. “Increasing Returns and Economic Geography”. *Journal of Political Economy*. Vol 99. N° 3. University of Chicago. 1991. p. 485. Paul Krugman. *Desarrollo, Geografía y Teoría Económica*. Publicado por Antoni Bosch. Barcelona. 1995. *Geografía y Comercio*. Publicado por Antoni Bosch. Barcelona. *Development, Geography and Economic Theory*. 1995, p. 88 y *The Self-Organizing Economy*. 1996. Además el trabajo de Michael Porter “New Strategies for Inner-City Economic Development”. *Economic Development Quarterly*. Vol 11 N° 1. February 1997. pp. 11-27. Porter, Michael. Douglas C. North. 1955. “Location Theory and Regional Economic Change”. *Journal of Political Economy*. Vol. 63. pp. 243-58.

and distribution depend on the level of industrialization, specialization, and support among regions and cities, which leads to further degrees of competitive specialization<sup>40</sup>.

## 4.2. Economic geography and city-region

Colombia, like many other countries in the emerging world has made an effort to incorporate itself into the international economic system by means of the expedition of various policy strategies. In the coming years where globalization and multilateral trade agreements enter into effect the result of policies designed to emphasize deeper penetration within the international context might be seen. Many countries intend to generate a supply of goods and services that will modify the productive structure and change the composition of production and employment at a world basis. Along with the development of this new division of labor, the function of production in the cities will be oriented toward producing

40 Ver también a Ron Martin y Peter Sunley. "Solow Convergence"? The New Endogenous Growth Theory and Regional Development". *Economic Geography*. Vol. 74. N° 3 Julio.1998. pp. 201-227. Pág 1.

In Development, Geography and Economics, Krugman has formulas for work:

1. Decision of location:  $M_j = \sum_k Y_k g^* D_{jk}$

Income depends on revenues from the location of company k and the distance D between j and k. The function g is decreasing.

2. Externalities that generate increasing returns arise from the interactions of the market that generate economies of scale at the level of the company, and the distribution of factors like labor in agriculture and industry-dependent expenditure on the production of industrial goods  $\mu$  and the proportion devoted to agriculture  $1 - \mu$  in a Cobb-Douglas function.

$$L_{Aj} = \varphi_j L_A$$

$$\sum_{Mij} L_{Mij} = \lambda_j L_M$$

3. Transportation costs that have higher incidence on the industrial goods because of the content on inputs. The cost is related to the distance that runs through the input until the factory. Something similar happens with labor that moves toward where there is better wages.

$$z_{ijk} = e^{-tD_{jk}} x_{ijk}$$

$$\partial \lambda_j / \partial t = \rho \lambda_j (\omega_j - \omega)$$

The parameters  $\mu, \tau, \gamma$  they point out the allocation of labor force, displacement, the matrix of distances and the allocation of workers at locations.

Rising yields come from:

Each product unique optimal shifting.

Of the generation of employment in each new location.

The addition of new products (Krugman, 1995, pp. 88-96).

goods with a higher added value and products highly dependent on knowledge contain. Gradually, in countries like Colombia the adoption of policies oriented toward competing on global markets will produce changes in the productive structure and improve access to foreign trade markets through higher degrees of specialization. The international division of labor will modify the productive structure of the country and cities and competitive regions will increase their share in this trade increase.

Foreign demand will place technology intensive productive factors and various areas of knowledge in motion to the service of competitiveness improvements. There will be institutional changes that will lead productive centers to modify their allocation of tasks and functions. Regional production centers, such as Bogotá, as a city-region, with its zones of regional influence will have to accommodate their productive processes to the requirements of foreign demand. Production will be far more specialized in diverse goods that are exchangeable in foreign markets. The changing trend in foreign demand opens opportunities to improve trade currents with countries like the United States. This opportunity derives from changes in political and commercial relations from the standpoint of the new generation of political agreements like those signed by Colombia with the United States or with the Latin American Regional Trade Agreements known as the “Alianza para el Pacífico”.

## **The new international atmosphere – global trade framework**

Colombia, like many other countries in the Latin American Region, is experiencing growing competition in the globalized market and a significant change must be adopted to improve access to financial and investment opportunities. This challenge undoubtedly offers possibilities for the national economy as well as for the regions and city-regions; opportunities oriented to tap competitive advantages and adapt the productive activity to emerging market demands. Hopefully, foreign markets prospects will determine the future development of our cities where the role played by modern activities will increase in importance. Clientele’s politics, inefficiency in production, corruption and wastage will find out that fierce competition will determined the emergence of modern productive activities. The basic challenge to the development of the city-region is to generate and put into practice a policy that will ensure strategic advantages in order to make these centers truly attractive agents for the development of business and investment. Microeconomic analysis indicates that competitive advantages needed by firms must be achieved by improving their commercial positioning with respect to competitors in outside markets. Macroeconomically, the important thing is to establish favorable conditions to restore path dependent growth particularly in the city-region to achieve sustainable long-run growth. These strategic requirements are conditions for convergent growth,

One of the reasons that make us believe that we are moving in the direction of a global economy is the progressive elimination of trade barriers, the freer of exchange rate, open-



ness to foreign investment and access to technologies. The theorems of globalization incorporate new elements that have repercussions on the evolution of trade, to the degree that the dividing line between internal trade and international trade is becoming blurred, subjective and a question of personal opinion. Globalization has become an element of geopolitics that brings about profound changes in our economies. Agents and possibilities come into being that modifies the productive process, making it impossible to escape from the determinants that condition the development of our city-regions. These deriving from liberal currents must be added to the idea of negotiations among blocks as put forth in the previous point. Such liberal currents consider the economic blocks when trading among themselves as areas that partially achieve levels of worldwide efficiency as a group. In order to overcome this problem of deviation of trade, Bhagwati, proposes that the TLCs, which are a sub-optimum initiative to trade since they tend to detour trade rather than generate it, still allows for attracting competitive investment in countries like ours. This author indicates that having to acquire more costly goods from the closest economic block is a direct and deliberate way to deteriorate welfare.<sup>41</sup> And for this reason the defenders of globalization “perse” about this geopolitical phenomenon remains as a firmer path toward modernization and development, as well as toward diffusion and consolidation of capitalism on a regional and world scale.

Globalization becomes a real element of international politics if it responds to social and political goals. Due to its economic manifestations in emerging countries for example, it merits greater study consideration and point of analysis for the purpose bringing development into the country. This historical development is considered a post-industrial phenomenon and brings into society three general spheres of change in power distribution. First, in the economic sphere because it has had repercussions on the structure of agreement in the field of world production, affecting the exchange, distribution and consumption of goods and services. Second, in the political sphere because it affects the way power is distributed among the different agents, establishing new negotiation conditions for decision making and because it introduces unknown patterns of control and coercion by the state. Diplomacy and public administration depend on their vision of politics. The new order requires greater control over populations, territories and resources for its operation, since within the global context and the large trading blocks, the demand for factors is enormous. Third, in the cultural sphere, because the structure of production needed to compete in an open environment requiring a new social contract, with differentiated symbols, beliefs, preferences, likes and values. Their incorporation into the political environment suggests profound institutional reforms.

This line of reasoning is fundamental to defining long run urban development policies. Just as internal migrations as Gouëset (1998) demonstrated obeyed a pattern of industrialization by substitution and deterioration of traditional agriculture it is foreseeable

41 Bhagwati, Jagdish. “Fast Track to Nowhere”. *The Economist*. Oct. 18, 1997. P 22.

that the economic forces in conflict are now others. For this reason the conditions to increase urban dynamics are different. We can see how in a globalized atmosphere, the large trading blocks are those that indicate the direction of exchange, stimulated by a diversity of agents that modify the social relations between producers and consumers, between regional blocks and alliances of countries, and between geographic zones within the same country. The exchange of goods will therefore take place between blocks and local markets and transportation over distances will fall into the hands of specialized intermediaries, while the cost of mobilizing such production will decrease as Krugman observed (1995). Barriers to trade will be relaxed due to spatial references and the symbols will be reproduced at almost no cost and be transferred with ease in this new environment without borders.<sup>42</sup> Lester Thurow, suggests that “any product can be made in any part of the world and likewise be sold wherever one wishes...and manufacture each component and develop each activity in the part of the planet where its production is the cheapest... and sell it where profits are greater.”<sup>43</sup> This conclusion is a way of visualizing the future conditions of demand that have so much effect on the evolution of urban development, given their productive composition.

With globalization, the division of labor and functions changes in each and every one of the countries. Technological innovation and ownership of knowledge will parade as the agents of the spread of power. The global strategy will be aimed at production and its financing, according to managerial concepts based on the application of planning, design, production and planet-scale distribution schemes. Financial transactions will occur in different currencies and types of credit, with which investments and administration of capital will take place in demanding and specialized markets<sup>44</sup>.

## Globalization as a world political phenomenon

Globalization is an unequivocal political phenomenon and manifests itself as a transformation of the legal framework for trade and investment in many parts of the world. Some authors, such as Bergsten (1997 Sept. 27; p.23) suggest that the United States, when it initiates the final negotiation for its global insertion, will modify the economic rules of the world market, as it is the principal country leader with the initiative to encourage trade agreements. Due to its power and influence can complement its leadership both in regional negotiations and on those geopolitical scenarios as was announced in

42 Waters, Malcolm. 1996. *Globalization*. Routledge. London. Pp. 4-10. s.

43 Thurow, Lester. 1996. *El Futuro del Capitalismo*. Vergara. P. 129.

44 Bretherton, Charlotte and Geoffrey Ponton. 1996. *Global Politics*. Blackwell Publisher. P.7. Globalization tends to change the international agenda very quickly and permanently since it incorporates new elements such as the topic of international security for peace, economic relations, development of poor countries and poverty, protection of the environment, protection of democracy, defense of human rights, the rights of woman, among others.

1999 by President Clinton before Congress on the convenience of supporting the Millennium Round<sup>45</sup>.

Participation in the globalization process attempts to decrease economic loss by improving levels of competitiveness for enterprise, in more than forty countries. In this way the danger of remaining isolated from the stimuli of world trade are avoided, and opportunities opened for the modern sector to capitalize and take advantage of the opportunities of the level of exchange occurring in the competitive atmosphere of globalization.<sup>46</sup> For this reason, the arguments given above take on unexpected importance, since they point out that the sphere of competitiveness of the new global enterprises is not their own country, but rather the world. The general challenge to economies is to improve investment conditions, research and development, as well as to adapt managerial routines to take strategic benefit of emerging opportunities on the business scene offers. One suggestive aspect to achieve that end is the use made to proposals made by location theory in the new global economy, to improve global city competitiveness.

## Urbanization and services

Authors, such as Cuervo (1997) and Gouëset (1998) try to find the causes that explain in their work that a city such as Lima, Sao Paulo or Bangkok generated about 40% of the total national product, due to easier access to services that incorporated modern technologies with which they were able to raise productivity by offering better managerial systems. The lack of equilibrium introduced by governmental policies in relation to the terms of trade between country and city, favored the increase in the rate of accumulation in the cities and this transfer of savings has caused opportunities to increase to the urban economy as modernization policies are claimed to have spill over.

Geographers and economic historians have tried to encounter the general causes that determine the origin and evolution of cities after capital has accumulated. There are some rules of behavior that offer explanations and on occasion make some predictions about the impact of emerging policies. For example, with the flow of excess labor from the countryside into urban centers and the introduction of productive activities in the centers, it can be understood how a high percentage of gross domestic product is generated in the cities by means of producing more goods and services like health education and banking. This argument also connects with the question about why the worker that arrives in urban centers from the countryside or other centers helping to develop new activities within the cities. One reason might be that it helps to combine the productive factors of cities

45 Bergsten, Fred. "American Politics, Global Trade". *The Economist*. September 27, 1997. p. 23-24.

46 Iglesias, Enrique. *Globalización e Integración Regional: Consecuencias para América Latina*. México. November, 1997. P. 4.

as occurred with house construction activity or increase the export services in accounting financial services or research and development.

There are usually numerous new factors that explain the diversification of urban activities and increase in productivity and accumulation in cities. In the era of economic services, the development of certain activities explains part of this increase in the growth rate and generation of employment in different fields. For example, the journal *Economist* (July 29, 1995) indicates that in 1974 the finance industry had capitalized in cities US\$900 billion, a figure that rose to US\$15 trillion in 1994. It is evident that the appearance of this new element suggests that it is possible to identify certain activities that promote employment and production other than that considered traditional. Many analysts suggest studying concrete policy mechanisms intended to promote strategies to further cities, taking into account for example new endogenous productive factors that involve knowledge creation. Large cities such as Tokyo, New York and London duplicated the number of jobs in the last decade through the development and growth of the services sector, emphasizing support to the creation of call-centers, hospitals, and diverse university sub-centers. The jobs offered there are growing, they are reiterative and complementary, generating chains of jobs and out-sourcing, by which the services sector begins to occupy a relevant position within the development of new economic activities in the cities. The foregoing means that traditional jobs such as trade and transforming industry face competition from the development of services, out-sourcing and work that is intensive in the use of intelligence.

In general, the development of services activity is changing the environment of urban development, an environment in which the large, extensive areas making up inter-urban circuits of interlocking cities and regions around a large business. Now, prosperous areas of trade or industrial relocation are combined, co-existing with deteriorated zones in the centers and in the peripheral zones. Analysts and policy makers inquire insistently into the ways to reconcile the interests found when the process of reconversion of cities takes place and certain traditional or decaying activities that tend to disappear, or in some cases have to coexist with the advance of various centers, suburbs and areas that must break their accelerated decadence. Recent evidence, principally on North American cities suggests that some centers of urban conglomerations begin to receive new permanent inhabitants and record a rise in employment levels after changing production pattern structure.

## **Increase of gross product and urbanization**

The different levels and stages of development in which the countries and cities are at conditions the urbanization and modernization processes. Just as there are cities and megalopolis in which the center is in the process of recovery, in countries like Colombia the topics of rehabilitation of the center, construction of modern transportation mecha-

nisms, adequate roadway systems or ambitious projects such as the design or creation of a technopolis are still elements that interest only a handful of officials and intellectuals.

Generally, these questions still have no formal response in terms of policies. Historical events and happenings advance without they're being any general frameworks of solutions offering an adequate response to these problems. For this reason the lag between the degree of urbanization and the adoption of modern solutions and proposals to transform centers into factors of competitiveness becomes prolonged over time. The problem of the cities is of such urgency that the problems of the marginal or peripheral areas are forgotten, as if it did not form part of the urban problem.

In 1990 the UN found that there is a direct relation between the level of urbanization in countries and the level of per capita income. And this situation would tend to become modified to the degree that the productive roles of the countries and cities change, and the countryside finds another productive function such as the preservation of the environment. International competition will cause changes in many urban and suburban centers specialized in the production of goods that cannot compete with imported products. There will be many cases in which the appearance of "clusters" will allow some subcenters or regions near cities to find a prosperous function in the new international division of labor. Cities that cannot adapt to the new circumstances will become depressed areas.

## 5. The city-region

Referred arguments of previous sections and Globalization phenomena we consider they are affected by inter-linking circumstances to all the markets in the world and gradually its effects are causing borders to disappear. Cities, like Bogotá, Medellín and Cali confront a double characteristic, in the sense those structural changes in the country as well as international ones exert an influence on it and affect its future development. The great opportunities to become global cities in many cases will depend on the degree to which they become inserted into the international economy<sup>47</sup>. For the moment, three mentioned cities have benefited from the disparities among regions and cities, since they attract a lot of the surplus population, generated a large portion of the industrial product. They also enjoy the highest income per capita in the country with some other regional capitals. The question that has not been suitably posed is how to develop synergy in a borderless world, in a world where the border between cities is an imaginary line just as it is between external markets and so to compete in this open world market.

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47 Sassen, Sakia. 2002. *Global Networks Linked Cities*. New York-London. Routledge. "A growing number of cities today play an increasingly important role in directly linking their national economies with global circuits". P. 2.

Today there is much talk of city-regions, which is nothing more than the juxtaposition of towns, neighborhoods and cities along a geographic belt. It is as if we were to speak of a city that extends from San Diego-Tijuana corridor, or in another geographic context, the Singapore urban triangle. That is, in many parts of the world there are natural economic zones, where the income per capita is higher than in the rest of the country. Ohmae (1993, p. 77) indicates that in the province of Guandong, the capital of which is Hong Kong there is a population of 65 million that will reach a per capita income of US\$5,000 while the rest of China may perhaps reach US\$1,000 in the next decade. The largest Latin American cities, very much aware of the opportunities of foreign trade, concretely stimulated by the opportunities open by freer regional markets. And other integration processes, it seems will aim their efforts at defining their new economic function, in order to reach the thresholds of development within the global context. China, on the other side of the world, is stimulating 14 new region-states to compete on the global market as in the coming millennium the stripe of Yunnan will become part of a Mediterranean zone that shares borders with Laos and Viet Nam. Along the straits of Malacca, three nations will share a common geographic zone. Between Boston and Washington you could say there is a city-region with good investment “opportunities”. Looking at things from this perspective, it is understood that our institutional and legal frameworks need to be modified.

The reference made to the evolution and development of regions-states is pursued in this paper because we understand its transcendence. The rules of the game in order to be able to enter the club of rich global market participants is that countries must accommodate themselves to the new mandate in order to find a new role for traditional cities and regions. One enters the global economy because the historical events determine it will be thus and because political organization pursues these goals, as well as a result of economically based reasons originating in a particular process such as the development of an agricultural export industry or manufactures involving technical innovation. But to the extent that cities find new functions in order to insert themselves into the international economy where there is greater demand than in the internal domestic market, other city-regions will flourish, such as perhaps, Cartagena-Riohacha; Medellín-Popayán; Honda-Neiva or Girardot-Sogamoso. We can clearly understand that legal schemes of territorial organization such as that developed by the Colombian Decree 879 of 1998 in its Articles 9 and 10 are still far from the broader visions of territorial organization mentioned above

As a consequence of globalization and the advancement of science, very modern cities have arisen that have a tendency to concentrate on activities associated with technological development. Many companies are grouped together that generate a high added value, with which the degree of industrial concentration is increased, attracting highly skilled labor to the area. When the proportion of expenditure devoted to industrial goods is very high in an economy, it is usually manifested in a rise in industrial concentration that can be self-supported due to the strengthening of linkages and agglomeration of productive

activity. The concentration or agglomeration occurs when the proportion of expenditure is greater in investment in technologically based industrial goods. The definitive factor supporting expansion of this process is a sustained reduction in labor costs, which in turn must be lower than transportation costs in order to allow the effects of concentration to continue indefinitely.

## Competing technopolis in the global market

On the road toward a Technopolis, the most notable characteristic of the process is intensive use of the technological component. The productivity factor plays an important role in justifying the concentration factor. And it is in these cases, where the market forces determine how to allocate resources. Castells and Hall (1994, p.20) suggest that planning and political circumstances can constitute elements that will help promote investments in specific geographic places. They agree that government action when there has been subsidized support to drive defense projects and the military industry facilitate the development of technology intensive industrial efforts. These authors suggest that the establishment of university and research centers help generate new knowledge, acting as an endogenous factor within the growth process, thereby stimulating the concentration and location of new entrepreneurial centers associated with knowledge. In these cases, the theory of location of the technopolis takes on interest as a pioneer effort for countries intending to compete in the global market. We can see in certain experiences how the production of software, induced the development of an information economy, which as stated, was generally created in the technopolis. This information constitutes a fundamental input for the development of new products and policies, the endogenous components of which explain the residual element of a growth function, but also a component to compete in the global system.

Castells indicates that the dynamics of the technopolis originate in tangible facts such as those that gave rise to processes such as the technological revolution, in which information technology is as important as the industrial revolution based on the use of energy. The onset of globalization commented on above as the element that accentuated the dynamics of the economic processes, is the seed of a new world fed by international competition and capital mobility. It is also fed by the fact that productivity and competitiveness are based in a decreasing fashion on the generation of new knowledge and in the access to information processing and transmission. Science, technology and information management are new factors, which recombined instead of adding together, multiply the wealth of the economy. The economy in the era of information is global because the capacity generated by the new productive forces needs constant expansion in the world market, dominated by new power forces that depend on information, technology and to a lesser degree on labor and raw materials, which constitute a dynamic element of human activity.

Not everything about the technopolis has been said, but one what is clear is that literature on urban development tends to confirm the fact that by the next century, cities can become important units of production whose social organization will be oriented around knowledge. For this reason, economic policy will be oriented toward planning actions that stimulate the creation of wealth and enlarge the global supply chain. Cities in the context of globalization will compete among themselves; not for primary goods and manufactures produced for the local market, but for standardized products and services for global markets. It is estimated that at least 17 of the 21 megalopolis in the world with more than 10 million inhabitants will be located in the lesser-developed countries. This process will compete with conflicting processes, wherein the centers of the cities will decay and some productive manufacturing industries will disappear or move to other places.

The role of the urban centers onwards will be different from what we know today. We must prepare our cities as of today to confront these changes. One thing is the increase in urban population and another is to avoid an economic decline within them. The Economist (November 7, 1998) comments with respect to these considerations that Taiwan will essentially recreate another Palo Alto, California, in the sense that it will build modern houses, schools and many enterprises producing semi-conductors, software and attract many risk capital investors. Near Taipei there is a scientific park called Hsinchu, one of the most important in the world that promotes the innovation of the third most modern electronics industry in the world. The huge share of this industry in the world has led to the creation of a second technological park on the island. It is no coincidence that the majority of computer components come from Taiwan.

The success of these advances in the localization of cities that compete is the freedom the government gives this industry and the high concentration of technicians in the innovative area. The success of this experience can be summarized in that there is a close line with North American enterprises, a constant flow of students to the United States and above all to the massive use of the computer leading many firms to specialize in sales and marketing, while anonymous firms produce huge amounts of generic parts for the world market.

## **Scope of the city-region in México and North America**

Mexico has modified its policy of regional development for the purpose of confronting the advancement of economic integration with the United States. The advancement of the notion of city-region, in particular and the geography-distance relationship in general and their connection with the economy has been great and definitive in favor of the



growth of these urban nuclei.<sup>48</sup> In North America the spatial distribution of economic activity tends to be concentrated in certain strategic regions with an aim to exerting its influence on a national nucleus. Although in these neighbor regions, certain large cities are joined in a city-region development process where their new economic activity is taking into account that they are highly dependent on intercity and global trade. There is strong interaction and dependence among them due to migratory flows of capital and information resulting from the technological changed named above.

Cities within the continental nucleus in the northern U.S. are intensely orienting their economic activity toward the demands of commercial relations among world economic blocs. Among these we may point out NAFTA, FTAA and as of the year 2015 APEC. In the United States, this nucleus extends from New York to Chicago, and in Europe from Amsterdam to Zurich (Polese, p. 134). The model used by Polese incorporates several integrating elements. The national nucleus of cities within a country stands out among these, and in this case in the United States it joins with the nucleus of cities forming a progress belt leading cities towards a global competing scope.

In dynamic cities in both countries, the primary characteristic that explains their movement can be found in the relative difference in per capita GDP. The per capita GDP should be greater in them than in other areas and in general than the national average. The political importance of the city-region comes from the fact that it acts as an additional feeder to justify transfers of resources that are larger than the total national expenditure both in absolute and in relative terms. The “spatial” model that uses the criteria of distance between the city and its markets leads us to predict that unless electronic communication policies are adopted to cut down distance the socio-economic distance with other dynamic regions or markets will not be shortened. Traditional economic activity must be replaced therefore by activity that generates a high added value like specialized knowledge. Mexico bases its experience on the support of redistributive fiscal policies, receiving transfers of funds from the State. Urban development policies are divided between sustaining a central city nucleus as in the case of Mexico City and dynamic centers such as Monterrey, which is stimulated by NAFTA. Meanwhile, the poor states in the south exert strong political pressure.

## The future city of China

With the political liberalization introduced by Deng Xiaoping, we could see in China the fact that a country of such proportions suffered from accentuated regional inequalities. This phenomenon was critical, in spite of the fact that the liberalization model had

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<sup>48</sup> See the work of Mario Polese and Salvador Pérez Mendoza. “Integración Económica Norteamericana y Cambio Regional en México”. *Revista Comercio Exterior*. México. Vol. 45, N° 2. Febrero 1995. pp. 132-39, contains a detailed compendium of bibliography on this topic.

been initiated in 1978, bringing an end to the agricultural communes, creating special economic zones and privatizing state industries. Since then and thanks to these measures, the growth rate has been 10% annually and the value of exports grew from US\$10 billion to US\$300 billion. Foreign investment registered US\$30 billion in 1994 and two decades later this figure increased substantially. This evidence of greater investment reinforces the theory of the greater speed of convergence in the Chinese economy, with respect to developed countries. From the point of view of regional development, analysis of the topic tends to be more complex, due to the fact that many regions have not experienced any growth at all, making the convergence postulate less reliable. Growth has been seen principally in the special economic regions such as Zhuhai, Shenzhen, Shantou and Xiamen. Urban salaries still triplicate rural ones, and the flow of migration to the large cities continues to be accentuated for this reason. Pressure on urban infrastructure has been strong and agricultural production has declined, turning China into a net food importer (Weinstein, B. 1996. p.55).

Therefore, one of the questions that experts ask and still have not solved is how to accelerate the growth in the interior of the country, precisely when industrial development and economic boom in services grows at accelerated rates in the special economic zones. The formulas used in the West to stimulate sectors or microeconomic variables do not have much practical application, given that China is an agglomeration of regional economies. Macroeconomic policies, both in China and in Colombia, have differential effects in each region, province or municipality. It is for these reasons that the pressing problems such as internal migrations and displaced populations become critical, in the face of the impossible task of accommodation, as in the case of China with its 500 million additional inhabitants in the large cities. For this reason, they have had to formulate the alternative of industrializing the interior of the country. Within this new context, industrialization has been assimilated with regional development, which has also been complemented by important infrastructure projects and services in the broad corridors such as Beijing-Tianjin. (Weinstein, 1996. p. 57).

The general objectives of development, such as the creation of employment, rise in income per capita, redistribution of income, elimination of poverty, improvement in life and welfare conditions, and broadening of the economic base have not occurred uniformly throughout the entire length of width of this immense country. It is hoped that by stimulating regional development, poverty can be progressively eliminated and income distribution improved. But the truth is that it is of great concern to the higher echelons of government, that macroeconomic policies have asymmetric impact on regional development, and for this reason, the government considers it necessary to balance shares in public revenue between the central government and the provinces. Likewise, they also see a pressing need to correct defects in the market, taking advantage of incentives, such as lower taxes, favorable interest rates and promotion policies aimed at stimulating entrepreneurial development.

Industrial promotion policies and technological change through the creation of centers for promotion and improved educational conditions at different levels are factors that can contribute to spurring regional development. The implementation of this set of productive policies requires that the community and private investors improve investment in public goods, including water systems, airports, roads and telecommunications systems in the regions where they attempt to stimulate development. The foregoing reasoning is reflected in the application of general macroeconomic policies that are commonly believed to propitiate the process of convergence. It is believed that with adoption of the model of decentralized decision-making and community participation in decision-making, impetus to productive investment as a condition to guarantee the sustainability of the model, therefore takes on unexpected importance. Let us remember that in the experience of China, the topic of regional development has been an important policy criterion given the dimension of the country, especially during the stages of centralized planning, although criteria such as intra-regional planning<sup>49</sup> and development did not receive all the attention deserved.

For the purpose of increasing the rate of growth in regional economies, China has been discussing the fact that territorial development highly depends on the convenience of capitalizing activities that promote improved technology conditions and above all that orient the location of industrial initiatives (Wang, 1995, p. 565). It is estimated that territorial planning, constitutes an important vehicle to stimulate economic growth. With the development of Economic Geography, as a science with an important economic criterion, subject now covers and incorporated in a set, such important notions as the planning of industrial development as the basis for sustained growth, the identification of the physical conditions of the territory, utilization of agricultural investment, ordering of the economic and industrial structure, systems of urban development and human movements, as well as the distribution of water, power, transportation and basic infrastructure facilities.

Broad analysis of this concept will allow the development of policy guidelines that help orient development of the industrial challenge, as a condition to guaranteeing sustainability of the liberalization model. For this reason, it is extremely interesting to notice that the concept of regional development and decentralization is interpreted with very integral criteria. Thus the *Plan for Territorial Development*, prepared with the help of the Japanese government in 1985, attempts to coordinate the country's economic development with the topics of migration and settlement of populations, along with the development of regions and communities, formulate strategies create equilibrium in urbanization and balance financing policy and promotion of projects associated with the activity of transportation and telecommunications (Wang, 1995, p. 566).

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49 See detailed work of Wang, Ya Ping and Cliff Hague. "Territory Planning in China: A New Regional Approach". *Regional Studies*. London. Vol. 27.6,99. 1995. P.561.

In the field of roadway transportation, the sustainability of the model in the long run is conditioned on the plan for 85% of the cities of more than five hundred thousand inhabitants to be interconnected through the national roadway plan. The most interesting fact of the new liberal scheme in China, is the fact that sustainability of the model is based on the contribution of various regions to growth and welfare, incorporating significant amounts of private investment through projects oriented toward technologically modernizing traditional industries, producing high quality consumer goods, and even more ambitiously to modernizing the industrial cities, developing four special economic zones and fourteen international port centers. Of great importance is the adoption of the strategy to maintain sustainability of the model through a stimulus to the productive activities located in the interior parts of the country. Labor intensive industries stand out; agro-industry, mining activity and power generation, all for the purpose of preserving a better regional balance. And in order to rationalize regional development, governmental economic policy attempts to rank cities by categories of extra-large, large, medium and small, in order to understand the problem of reallocation of income and investment on a regional level. China has twenty extra-large cities (more than one million inhabitants), thirty large ones (five hundred thousand to a million), ninety-four medium ones between 200,000 and 500,000, and one hundred seventy eight of less than 200,000 inhabitants (Wang, 1995, pp. 567-68).

Finally, among the concrete proposals to sustain regional economic development that stand out are support for existing manufacturing industries, modernization of agricultural and livestock production, inclusion of tourism plans to attract sources of capital to the regions. In each regional economy stimulus must be given to the creation of their own competitive advantages, which taken together determine the sustainability of growth. Those that stand out here are the coal mining industry, power generation, supply and extraction of water, chemical industry, textile and garment activity, conservation of the environment, mining, intensive crops and the fruit industry among others.

## **Urban policy – the case of Guatemala city**

To raise the levels of competitiveness of the cities is a topic of great political importance, given that participation in international markets is a question of survival for the countries. To find opportunities to diversify exports, incorporate specialized productive processes, incorporate leading technologies and identify standardized products of high added value is a challenge to reach the dynamic trade and investment segments. The exploratory lines referred to allow us to analyze tendencies to help Colombian eventual city-regions to improve its strategic condition as a political, economic, financial and cultural center for the country or pertinent regions, as well as to visualize opportunities to develop strategies aimed at converting the capital cities into an important international center for competitiveness.

Aside from the spatial criteria described by the strategic exploration of Bogota, Medellín, Cali and Barranquilla as a city-region to mention some few, it is worth taking into account the existing and future conditions of infrastructure, as is the case of airports, duty-free zones, manufacturing centers, and hotels installations, prestigious centers of higher learning and research centers. These are interesting factors of attraction that help orient the competitive mission of the city.

Nevertheless, it is interesting to explore some recent tendencies with respect to the discussion of new directions that arose regarding the topic of Urbana.<sup>50</sup> In the case of Guatemala, the analysis made by Castillo Arroyo (1997, S.p.) focuses on the topic of inadequate soil use, contamination and degradation of the environment, inefficiency in the collective transportation and roadway systems and the housing deficit. We can appreciate the fact that the discourse is similar to ours, in that it does not deal deeply with topics to the future, when making its own diagnosis. During the period 1986-93 the city went through a sector planning process, including a Master Transportation Plan and one for Solid Waste, which became part of the final Master Plan for Metropolitan Development in 1995. The novelty was that it included a participatory scheme for decision making, with consultants that brought models developed in other cities. It started with the supposition that it was necessary to rescue the city, including the application of notions such as mixed soil use and urban activities in small sectors, improvement in the collective transportation system, adjusting routes to new needs in order to avoid congestion, and to extend services to marginal zones and lastly to apply coercive means to enforce laws. With respect to the future it was believed that the discourse should incorporate such aspects as a progressive change to improve the quality of life, modify patterns of production and consumption, respect the ecological equilibrium and seek harmony in cultural development, supporting civic participation. Due to its geographic location, an objective to preserve the environment was incorporated including extensive green zones in the urban landscape, even supporting biodiversity in the surrounding microclimates. Participation by urban actors interested in the execution of projects was stimulated. With respect to policies that deserve integral attention, development and use of the soil, environment, infrastructure, transportation and roads and social, economic and institutional elements were identified. To reach these goals with high levels of works to be executed demands a search for sources of resources and an increase in the efficiency of expenditure. A photo-interpretation of the city was performed for an urbanism and land use analysis. From the point of view of project financing, it was insisted that project by self-financed. As a strategy modernization of the planning and inspecting system was adopted and as policy, it was proposed that the environmental variable be incorporated, supporting the creation of a green belt of ecological protection.

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50 See the work presented at the symposium on cities. March 13-15, 1997. Held in Barcelona.

## 5.1. The city in Latin America - a new set of problems

Seventy-one percent of the population of Latin America lives in the cities. The rapid growth of the last fifty years has its origin in the migrations from countryside to city. The crisis in the agricultural sector explains urban development in many countries of the region, a cycle that economic indicators are showing tends to stagnate. This means that the cities that found a market in rural demand to send their supply of goods and services lose their relative importance as a factor that stimulates the growth of the urban product. Latin American cities find a justification for their growth in urban demand, and eventually in production for a global market. As stated before, this market is intelligence, knowledge and innovation intensive, and for productive activity it is technology intensive. This gives its production a high added value. The re-structuring of the cities of the future is based on these new determinants. In Latin America, Richard Batley (1997, p.1) says there are thirty-six cities of more than one million inhabitants, two of the world's five largest and eight of the fifty largest. The appearance of the city-region can be explained by the fact that industrial relocation in many of these centers is concentrated within a radius of some two hundred kilometers. The neo-liberal model and structural adjustment have changed the economic function of these cities by reducing the size of heavy industry and making productive activities associated with globalization a priority.

This does not mean that in traditional cities, traditional economic activities disappear altogether. The important thing is to understand that due to the changes occurring in the international system that promotes a different function for city-regions it forces them to adopt changes in order to adapt and accommodate themselves to this reality. More and more each day there is a calling for them to become specialized global cities, whose activities will be related to finances and the administration of information. The new technologies associated with globalization require a very broad and specialized space, which causes industrial complexes to shift toward zones other than the traditional urban ones, locating themselves on the periphery and forming thus what we have called the city-region. The phenomenon of information technology also requires specialized personnel, while recognizing that only a small part of the population possesses this knowledge, which explains why so few cities in Latin America can effectively adapt to competing on global markets. Competition in the labor market will become concentrated on a few high paying jobs and the middle class that will depend on this process will be compelled to move toward the urban centers associated with the new global economy (Batley, 1997, p.3).

One evident problem that arises from this tendency toward a global economy is to counteract the decay of intermediate cities and to correct the degree of inequality generated by this process of insertion within the large urban areas. Evidence shows that the domestic market will not be the dynamic factor that will power future development of cities. It will rather be the international demand for goods and services, so that modern urban policy should avoid letting the gap between the poor and the new rich associated with in-

ternational activity become too wide. In other words, it is important to generate policies to incorporate certain social strata into the dynamics of growth. The State can help correct polarization of the economy, by increasing the investment that generates greater levels of welfare and by accelerating redistribution, through education and access to public works of common benefit, such as roads and utilities. Income redistribution policies help avoid economic imbalance. The presence of multinational companies helps adjust the degrees of redistribution on the national level and to insert the economy into the global structure at the level of the citizen (Batley, 1997, p.5).

The industrial and tertiarization crisis announced by Gouëset and Cuervo are added to the problems of another dimension that demand different policies in the urban sphere, such as preservation of the sustainability of urban development, both in the economic and environmental senses.<sup>51</sup> The urban ecological problem can be delegated to the Ministry of the Environment in search of a general policy. But unavoidably certain entities like the District will avoid designing formulas that conceive of a city-region where development is harmonious and balanced in terms of preservation of the environment and generation of economic growth. This thesis coincides with the proposal by Batley that decentralization increases the possibilities of urban development.

One way to reduce the pressure and distance between rich and poor in cities of rapid growth is to promote development of the city-region in terms of the study proposal for the great Aburrá Valley, the Girardot-Bogotá-Sogamoso axis, so that it can integrate a large number of people in a diversified social and productive process that is less costly in social terms. A 21<sup>st</sup> century city conceived of only in terms of international competitiveness is a solution to the problem of external demand, but incomplete in terms of rescuing the social groups lagging behind or impoverished in the process. The government can contribute to mitigation of the social distances through investment programs and promotion of regional development, avoiding thus the diseconomies of agglomeration.

Bogotá, like other Latin American cities, suffers from problems of social sustainability, in spite of the efforts to make it competitive on an international scale. This concept takes in different entities and groups of society and includes aspects such as economic growth and preservation of the environment. Cities like Calcutta grow, but the levels of misery increase, as can be seen also with the people living in the *favelas* of Rio or in Villamiseria in Buenos Aires, misery amidst prosperous cities.

Involving economic agents in a sustainable development process implies promoting the marketing of policies oriented toward development of the city-region. That is, it implies promoting the change of mentality of governing bodies and businessmen toward

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51 With respect to the topic of tertiarization of cities it has been said that it is important to lend impetus to small family type productive units through decentralization, for the purpose of responding flexibly to economic opportunities that arise from technological changes in big companies that replace traditional labor. In certain countries there has been an effort to institutionalize public and private associations to design policies to promote small enterprises.

competitive development of the city-region, pushing for a change in traditional urban development policies, while stimulating competition in the execution of programs and projects, and being prepared to confront the crisis that will be generated by adoption of new policies for competitiveness. Marketing of policies should be aimed at specific groups within the decision-making networks: the politicians, officials, government agencies, entrepreneurial class, owners and businessmen as well as base communities.

## **5.2. City-region and competition**

### **International context**

Some cities that have understood the scope and meaning of the globalization of markets have taken advantage of this circumstance in order to strategically take on the opportunities and threats present in this context, in order to gain access to said sources of trade. In the case of Santafé de Bogotá, we can identify the principal developments in legislation associated with the signing of international treaties that favor trade and investment. Based on a description of these mechanisms that favor competitiveness, possibilities can be explored of forming an institutional architecture that will help promote the incorporation of investors into competitive projects that will improve the technological base of the city. Finally, some guidelines can be suggested for marketing the city internationally, as a viable alternative to extending the degree of international competition that is achieved with growth in trade and investment. The friendly face of the city is shown to the foreign investor, emphasizing the facilities it offers.

### **Regional development tendencies**

The topic of Regional Development would be incomplete if it did have a brief discussion of the topic of city development, and its effect on the development it promotes in the zones under its influence. It must not be forgotten that Colombia is a country of regions, but also of cities. For this reason, this work is complemented by including a reference to urban development and its influence on regional development. Let us remember that Colombia is a country of regions and cities. It has some sixty urban centers with more than 100,000 inhabitants. Many of them with a capacity to act as poles of attraction that stimulate the development of the surrounding region. Generally, they channel part of their surplus production toward these natural markets. The behavior of the level of development of these urban centers, conditions the development of its zone of influence to an important degree. Hence, the urgency of promoting sustained development of these urban centers, as an element to aid the sustained growth of the regions. Many of these urban centers located in strategic areas of the country were able to develop in response to the level of regional colonization, the degree of insertion within the national market and



in some particular cases the process of linking productive activity to growth and expansion of international trade.<sup>52</sup>

It is good for the cities that act as ports, zones for consumption of imported goods or exportable production. To this, authors such as Porter have asked important questions on the topic of urban development, taking into account some theoretical reasoning similar to that done on regional development as we have formulated it here. Illustration is given about the impact of economies of scale and agglomeration on growth, or the effect that improvement in the education system has on technological change as elements endogenous to the growth model. It has been insisted that it is important to complement the investment process in basic infrastructure in the regions with other initiatives that increase productivity and that modernize regional economic activity. That is, to find new economic proposals in order to face the process of globalization of markets, as an unavoidable determinant in the new international economic order.

Porter calls some policy elements that can be assimilated to strategies applicable to many of our 60 main cities that have not been able to modernize new strategies for the development of the interior of the cities. He establishes as priority objective the generation of productive work in these settlements in response to assistance programs or transfer of subsidies to the worker, with a very marked effect in the long run on productivity. He warns that efforts to bring better services, such as water, light, sewers, health and education among others must be complemented with realistic investment strategies in activities that will generate growing profits and stimulate the creation of new employment. For this, alliances must be sought with other productive currents in the market, for example, developing the petrochemical industry near oil exploitation zones (Porter, 1997, p.11).

Both in the larger urban centers and in lesser-developed populations, it is convenient to stimulate improvement in the quality of education, progressively raising standards toward international ones. Otherwise, the centers would not be able to compete with centers or regions abroad. The central question is how they will create new jobs in these poles, so that they can assimilate their development to that of regional capitals. Their

52 The literature on the topic of urban development and recovery of cities is abundant. Some recent references can be suggested. See: Porter, Michael E. "The Competitive Advantage of the Inner City". *Harvard Business Review*. May-June, 1995. pp. 55-71. Porter, Michael. "New Strategies for Inner-City Economic Development". *Economic Development Quarterly*. Vol. 11. February, 1997. Pp 11-27. Bates, Timothy. "Michael Porter's Conservative Urban Agenda Will not Revitalize America's Inner Cities: What Will?". *Economic Development Quarterly*. Vol. 11. February, 1997. Pp 39-44. Harrison, Bennet and Amy K, Glasmeier. "Why Business Alone Won't Redevelop the Inner City: A Friendly Critique of Michael Porter's Approach to Urban Revitalization". *Economic Development Quarterly*. Vol. 11. February 1997. Pp 28-38. Ohmae, Kenichi. "The Nation State is Dysfunctional". *Foreign Affairs*. Spring 1993. Ohmae, Kenichi. "Putting Global Logic First". *Harvard Business Review*. January-February, 1995. Pp. 119-125. Also take into account: *Revista Comercio Exterior*. Vol 45, Num 10. Octubre de 1995. "Economía Urbana". *The Economist*. Julio 29-agosto 4. 1995. "Cities".

degree of response is conditioned to the economic process of generating wealth through investment in activities that mobilize human talent, financial capital and physical resources associated with the production of tradable goods and the offer of services. Regional urban centers require therefore locational improvements in residential units, new and modern health services, schools and investments that revitalize the economic activity of their urban communities. Entrepreneurial initiative must be accompanied by the promotion of productive activities that concentrate investment proposals in sectors in which goods with greater added value are processed, such as foods and basic products produced in the region. Likewise, in the development of light manufacturing industries recycling of finished goods promotion of support services for enterprise and tourist activity. The action and participation of governmental agencies in this process is invaluable. The new potential of these urban centers has not been fully taken advantage of as a result of governmental management or incorporated into the legislation. Social investment is given priority and promotion of productive activities is ignored as a requirement for the sustained ability of the social model of decentralization (Porter, 1997, p. 12).

To offer unskilled labor as a product for regional promotion and of urban centers and easy cheap access to lands for its establishment stopped being a sufficient guarantee to ensure competitiveness. Now work needs to be done in the promotion of sectors that will guarantee the sustainability of the growth model. It is necessary to think about aspects, such as the strategic location of production units, impulse to regional integration with existing clusters of companies in nearby regions, attend to unsatisfied demand in the localities and promote formation of labor. Industries, such as the services that involve added value, recycling of products, manufacturers, food processing, publishing business, product distribution and light industry are some of the new economic activities that contribute to driving urban and regional development. The area surrounding the urban centers or the consumption area helps to promote investment in new business. This stimulus is associated with new opportunities to capitalize groups of companies and businesses in the agricultural, livestock and manufacturing industry and also the adequate location of university and technological education centers. The sustainability of regional development would definitely be an incomplete political process if it were not for the promotion of the development of clusters in the regions whose level of activity is associated with the generation of external economies characteristic to the information industry, consulting and advising, development of infrastructure and rendering of services to the community. Contrary to popular belief, the markets of capital cities in regions and provinces and their labor are not always well used or able to become an important attraction for businessmen with new initiatives. There is a large number of micro enterprises that can be developed in the centers and thus stimulate human talent.

## New vision of clusters

The city-region of the future cannot be contemplated without the development of economies of scale congregated around the clusters or agglomerations of companies that support and reinforce each other. For cities to be able to compete in a more extensive market that includes both domestic and international segments, it is necessary to have easy access to different sources of capital, information and technology in any part of the world by some electronic means. The agglutinating factor of conglomerates or clusters is not physical, but subjective, since it involves knowledge, relations between enterprises and motivation to compete. The clusters, as we have said, are an arrangement or ordering of companies and institutions that favors competition. They are entities that offer specialized inputs, components, machinery and services, as well as service infrastructure such as airports, university research centers and production guilds. They also have distribution and consumption links. This is an advantage that is barely understood in Bogotá for the purposes of promoting the development of conglomerates, inasmuch as the international factor that involves the exchange of financial goods and services has scarcely been taken into account as an element that helps generate greater aggregate demand. This is a basic economic principle for growth to be self-sustained. Porter (1998, p. 78) suggests that the wine industry in California brings together 680 specialized companies within the industry. In Italy, the leather and textile industry groups many companies, forming their own cluster that develops many linkages and synergies. The formation of the chain of value is one way to promote competition and cooperation. The problem with modern industries is that their competitiveness does not depend exclusively on access to inputs or the scale they achieve. It depends rather on how the cities compete, which in turn depends on the incorporation of advanced technology with the intensive use of knowledge. Moreover, it depends on the abundance of qualified managers, on an adequate transportation infrastructure and a propitious environment for the development of business, such as the presence of legal consultants, experts in tax matters and in general intensive sources of specialized knowledge.

Condensing a city within a limited space reduces the costs of transportation, but also impedes the flourishing of many complementary industries and activities that benefit from a fiscal, financial and common services system. It does not then make much sense to waste the opportunity to attract a large or extensive region, diverse sources of technology and specialized knowledge as an alternative way for the city to become competitive in the future. It is not a matter of creating a colonial village, but a global one. Modern techniques for distribution logistics require modern transportation infrastructure. It is necessary therefore, to generate mechanisms to increase company productivity, create conditions for innovation and stimulate the creation of new enterprises. The scale of production must be increased and to set up formal coordination among companies.

## **Productivity and the global city**

Elaborating somewhat on the work of Cuervo and González (1997, Ch.9 and p.120) on the economic development and urban primacy model, it can be understood that among the causes that led to the growth of Bogotá, an outstanding one was import substitution industry. In the era of globalization, it is necessary to make the city's objectives compatible with the requirements and benefits that are associated with an open economy. Otherwise, you run the risk of exhausting the model. One important element for guaranteeing the sustainability of urban growth is to maintain high levels of productivity. The city conceived of in terms of the 21<sup>st</sup> century, offers possibilities to improve the productivity of enterprise, due to easy access to skilled labor that lowers the costs of transaction, facilitating its relocation, with access to sources of inputs, transformed there, to outsourcing, to informal relations among companies, services and training. There must also be access to specialized sources of information. The city-region offers, as a stimulus, an extensive market with preferential access to competitive information. Among the complementary supports for entrepreneurial activity, we may point out the availability of hotels, restaurants, shopping centers and transportation facilities. Another complement is the coordination of activities among firms to improve the entire set of productivity. Activities such as the leather and garment industry, banking or education can find support among related firms with the activity of others within the same sector. They can also gain support from institutional development such as fairs, exhibits and sales conventions. The proximity of competitors allows them to gain better knowledge of their activities, cost structure and policy with respect to innovation. One advantage of the agglomeration of companies is that it improves their ability to launch innovative programs and to be up to date with technology.

As one line of research, thinking particularly of Bogotá as a city-region, we could study the type of activities that can complement established industries or clusters, such as the steelworks in Sogamoso, motors in Duitama, leather tanning in Villapinzón, cement factories in la Calera or Sogamoso, salt in Zipaquirá, flowers in Fusagasuga, tourism in Melgar and Girardot, education, banks and air transportation in Bogotá. The new clusters arise as a consequence of the stimulus offered by innovating enterprises that lend an impulse to the growth of other new ones, as we saw in the examples of the technopolis. It is necessary, under this conception to stimulate the interaction of clusters.

## **Knowledge as an endogenous factor**

The city-region of the future will be competitive to the degree that it develops the endogenous factor, knowledge. Universities in classical times taught grammar, logic, astronomy, music and rhetoric. The ideal of the university last century was knowledge for the sake of knowledge, art and the humanities. The facts, investigation and experiments were the ultimate basis for theoretical development. University knowledge by the end of this

century had opted for what was considered useful, a basis for incorporating scientific development in agriculture and in engineering alike. Oxford has taken an enormous step by opening a faculty for business administration and Cambridge formed an association with Bill Gates to investigate the applied science of computers. Technological development and the education of the masses have led the United States to open nearly four thousand universities. For the world, within the context of globalization, the economy of knowledge is the basis of new economic growth. The justification of an economy that favors the development of knowledge comes from the belief that improving civic culture accelerates economic growth. Aside from the fact that the universities are intended to be centers where the process of research and development advances, they constitute a mechanism for competing in the global economy. The world advances toward a society of knowledge, a reality we cannot ignore. Investment in knowledge is investment in growth. Malaysia, in spite of experiencing a grave crisis, is investing in creating its university on the basis of the concept of multimedia, in order to then invest in the creation of their own Silicone Valley. The concept of education in excellency, adopted by a few universities devoted to research is important as a source of competitiveness for the city. But also the existence of other centers of higher education in the city-region that offer vocational opportunities implies a rise in the standard of living, and becomes a source of income redistribution and of opportunities. The discussion today about the mission of universities revolves around the idea of creating some universities aimed at research and others to offer vocational support. This is one way of contemplating a better structuring of civic participation in the economic process of economic globalization and of traditional tasks associated with a city-region like Bogotá. It is also a vehicle for broadening the base of the middle class.

### **Relationship among cities and regions**

Within the literature on Regional and Urban Development, authors such as Ohmae, (1993 and 1995) highlight the role of the city as a factor of regional promotion, in the sense that many regions have found a new economic role by becoming integrated into international markets. Their dependence on the State has diminished in that their relations with the outside tend to be intense. This type of situation has occurred in Southeast Asia, in Hong Kong and its area of influence or in the famous case of San Diego and Tijuana, where, in spite of a the Mexican-U.S. border dividing the two, the productive links and better salaries reinforce the region's economic life. This degree of internationalization of economies and regional interdependence has led Asians to think that by the beginning of the next millennium they should have developed at least twenty new region-states similar to Singapore. China as mentioned previously, has fourteen special economic regions. One of them is Yuman that involves three nations: Laos, Vietnam and China. In *Cuadernos de Administración*, we proposed the creation of a big permanent commercial park in the Cucuta zone of binational influence, in order to foster binational trade and the regional development of this important border. (Pérez-Toro. 1995, p. 98). The United States can

be classified as a country with corridors of regional development, such as the area from Boston to Washington. These macro-regions orient their production toward foreign markets, but they must exist as internal markets that generate their own externalities induced by domestic consumption. The fundamental analytical argument is that when a region prospers, this prosperity spills over into the neighboring regions, even if there is a regional division or country border in the middle.

### **The city as product**

The blood vessels that join commerce and investment have become the sources that both threaten and offer opportunities for the development of urban centers, as occurs in many countries. The free movement of capital and productive factors among countries defines differing degrees of specialization in productive activity. The possibilities for improving competitiveness are many and demanding, both with respect to transportation infrastructure, communications, access to electronic telecommunications channels, flow of information and people. The development of enterprises and activities in urban centers takes on special transcendence inasmuch as productive processes tend to be more specialized and require more skilled labor with deeper levels of knowledge. Concepts of localization of firms are identified for the development of the city, such as assembly costs, location of raw materials, space cost curves, costs of factors and the influence of technological change, as well as theories on the costs and economies of localization.

### **New role of the city**

This exploratory study suggests that the conditions that gave rise to the expansion of Bogota as a grand city are changing. The loss of dynamism in the expulsion process of the rural population toward the capital, the deterioration of the goods and services production process aimed at attending the country's domestic demand is changing in that demand is now partially satisfied by imported goods when there are deficits or disequilibria in relative prices. This situation brings about a loss of dynamism in the transformation process of goods and services in the city, and as such in its habitual role of transformer of goods. It is therefore necessary that new productive alternatives be designed that will generate added value. Particularly, activities oriented toward the exportation of goods and services for other regions and countries are identified, an activity that becomes a necessity requiring prompt attention.

While this happens, there are many aspects of civic life that show signs of deterioration, in which the attention of the State is insufficient. We often hear opinions, such as it is necessary to generate new job openings, create wealth and improve the infrastructure of the capital. The local government helps with assistance, subsidized housing for the poor and community programs. But due to the fact that these projects are not sustainable, they soon enter into a process of deterioration. It is necessary to identify programs and projects where the community finds it attractive to invest, and where the city can send its products

outside the local market. The question posed by Porter (1995, p. 55) in this respect, is how to develop new activities aimed at creating permanent and productive employment opportunities. Self-financed projects that are mutually complementary that will maintain self-sustained growth in the long run are what is needed. Therefore, the city's productive base must be modified, that is, a new division of labor must be promoted that will coincide with the reality of globalization of markets. This means attending to local demand, but also reaching other markets in the region or abroad. According to the theory of localization, it can be said that it is possible to identify strong reasons such as the generation of competitive advantages that identify new productive activities in Bogotá. As a marketing point to make the city a more attractive center for investment, there is skilled labor, access to services, the possibility of doing outsourcing, or benefiting from the educational system. On this basis it is possible to attract companies with a technological base that are competitive.

As areas of development are identified in the city, new companies with a competitive bent can benefit from the rents or attractive land prices, facility in the usage of services, such as fairs and conventions. These entrepreneurial clusters are an advantage for marketing the city, since it is a way to coordinate new activities with other companies that produce inputs or offer different complementary services, such as customs work, commercialization, financial, accounting or legal support. Universities and research centers offer good support in the area of information, labor relations and infrastructure. Along general lines, the main advantages that determine whether Bogotá can be marketed as a competitive city are:

- Its strategic location as an economic, political and commercial center.
- The enormous local demand of its inhabitants, who have a high level of acquisitive power and the lowest poverty level in the country.
- The degree of integration between its productive "clusters" and those of neighboring regions.
- The human factor characterized by more skilled workers and a high number of professionals.
- In general terms, these are the advantages the capital has in announcing itself as a product to stimulate the association of capital and investment.

### **Strategic localization**

Bogotá is located in a very strategic part of the country due to its access and proximity to many centers of production and consumption. It has become a geographic location with a substantial concentration of business centers, as well as transportation and communication networks. With the necessary investment and risk capital resources, Bogotá as a geographic, political and commercial center offers competitive advantages, such as the

business district, communications infrastructure and public utilities, cultural centers and entertainment, etc. There are areas and zones of the city such as the downtown or the areas near the airport or access routes that facilitate competitiveness for modern companies with technological bases that generate added value and that are interested in becoming located in Bogotá and its zone of influence. The technopolis of Tsukuba, Silicon Valley or Boston benefits from the facility and access to transportation networks, airports, freight terminals, etc. which place the city on the threshold of competitiveness with an adequate concentration of production and processing firms, distributors and suppliers of goods and services. There are also storage networks that benefit producers and consumers. The productive clusters located in the urban center can raise the degree of commercial importance of a product, by taking into account that support can be given through the processes of “just in time” delivery, association among suppliers and producers that depend on the advantages offered by their proximity. Marketing of the product “Bogotá”, as a competitive city depends on the advantages that are offered by its geographic location among industries sensitive to location or relocation of highly technologically based productive activities in area near the access and distribution zones.

### **Local demand**

If there is any city in the country with greater competitive advantages within the regional framework of the country, it is Bogotá. For entrepreneurial activity and business, there are opportunities derived from the commercial network that allows retail activity to develop. The number of supermarkets, department stores and shopping centers is outstanding, along with a broad business network along main streets and in the neighborhoods of the city. Taken as a whole, this network defines a substantially extensive market by international standards. The investment rate may be high and even higher than the city’s rhythm of expansion, even with the understanding that the rhythm of growth of the city can drop in the next few years. We can foresee a good opportunity to improve living conditions in the near future. The marketing scheme must then be oriented toward the support and stimulus for interested investors to take advantage of opportunities for profit, yield and expansion. The restructuring of small businesses, ambulatory and street booth sales shows promise of better opportunities for the development of organized business.

### **5.3. City-region and global financial institutions**

The onset of these business events and the signing of different agreements and treaties in the field of services and investment will necessarily lead to a re-accommodation and relocation of investment, which becomes an important factor that facilitates the improvement of the capital as a possible international center to undertake the establishment of industries and businesses with cutting edge technologies and export potential. Based on the guidelines of the exploratory study, it is possible to design an active management of



the sale of the city and to consider this framework as an alternative to justify a better investment and trade climate and to promote research and development.

### **Global economy**

Ohmae (1993, p. 82) deals with new concepts to market the city according to the new roles it finds in the global context. It is true that the State has returned part of its functions to the private sector, but it is no less true that many of those functions depend on its involvement, in particular the degree to which the future of the city unfolds as a function of its insertion within the global economy. Its political function focuses now on offering ample education opportunities and training the new citizen for the performance and demands made by the new role of competition, called endogenous by the theoreticians. New opportunities in the world of textiles, semiconductors, automobile and automotive parts industries and electronic consumption products which require a highly specialized personnel with structured knowledge. Mexico with its milling industry made substantial progress in the qualifications of its labor. If we move toward the formation of city-regions aimed at international competition, we must learn that it is essential to concentrate on implementing functions that will drive advancement toward competitiveness.

Involving economic agents in the process of sustainable development implies lending impetus to *policy marketing* aimed at the development of the city-region. This means pushing for changes in the mentality of governors and businessmen to favor the development of the city-region; promoting a change in traditional urban development policies, while stimulating competition through the execution of programs and projects and being prepared to confront the crisis generated by the adoption of new competition policies.

Marketing of policies must be directed at satisfying the interests and needs of specific groups, as a particular response to the approach of decentralization. In order to develop the city-region in accordance with the criteria outlined, politicians, government officials and organizations, the business class, owners, entrepreneurs and community bases must be brought into the decision-making network. Institutional support is needed, stimulating association between government and private sector, extending, for this purpose, financial mechanisms that promote accumulation. The management of agencies such as the Chambers of Commerce and specialized financial institutions in charge of promoting financing and capitalization of investment projects help improve the global business context.

### **Meso-policies**

Examining the work of Esser on systemic competitiveness, it can be seen why innovation will be a source of economic growth and development. The future level of welfare in the city-region will depend on the adoption of new meta- and meso- economic policies and the degree of efficiency of the institutions capable of fostering and multiplying the

efforts of the companies. Many enterprises with the competence gained from globalization, confront the dilemma of whether to raise their level of efficiency or confront the reality of having to leave the market. The static advantages of location help competition, but within an effective environment that is determined by competitiveness. For this to happen, an external means is needed in which the initiative of companies and associations coincides in purpose. Within the set of initiatives that need to be stimulated to coordinate the city-region with the global context of the economy, it is necessary to market elements such as the development and management of basic structures for legal, political and economic organization associated with the new institutions. It is necessary therefore, to support economic modernization and to make the basis for mobilizing the creativity of society the marketing of organizational patterns. It is advisable, based on the complexity of the problem of competitiveness described, that the State, private sector and civic organizations distinguish and separate their roles, but also to develop independent learning processes.

### **Institutions**

The orientation of urban development policy toward the indicated objectives requires institutional design through a new combination of policies, in which state action is of great help for the development of the city-region. The decisions must come from the dynamics associated with socio-cultural elements, so that the scale of values coincides with the establishment of a hierarchy of new patterns that structure and condition political, legal and administrative organization. Taking this step is important for the development of new strategic and political capacity, which will be seen in the various plan, programs and projects that must be undertaken to develop the city-region. The community must be organized toward the achievement of those goals, wherein the suppositions of the new economy required progress in learning processes that are identified with high levels of efficiency and competition. According to these ideas, it is necessary to continue inculcating the principles of competitiveness at the various levels of the decision-making process. It must even lead toward greater community interaction within what will be the new city-region. They should even program strategic initiatives. It is fundamental that this level of organization be developed so that productive agents can then take initiatives to compete in the global market, or at least the regional market.

The participation of the government in this process is essential in order to improve the level of competitiveness, specially when it stimulates the appearance of linkages which are the bases for promoting a reduction in transportation costs. This reduction also leads to improvements and adaptation of the basic infrastructure, which should be built up keeping in mind the articulation of the city-region. The thesis that competitiveness depends on the intensity and depth with which higher education is imparted is a commonly accepted one. This is one way to incorporate progress made in the area of technological change into the productive process. To raise the level of investment in processes that

involve high level technology becomes the basic objective for expanding the industrial base and in this way linking the economy of the city-region to the dynamics of the global economy. The level of competence in this new atmosphere is demanding due to the structure of the new international agreements. Within this discussion, we can highlight the development of topics such as ecological conservation, narrowing and coordination of activities in the regions and better decision making that are identified with the linkages deriving from import and export flows.

Active community participation is needed to be able to deepen the systemic process. It must be understood how incorporation of local governments in this process, seconded by producer and guild associations, research centers and universities bring these activities jointly developed by universities and business into closer articulation. Extending this general process demands the mobilization of substantial resources that generally come from public savings. There is some amount that comes from private savings that requires the association of capital through institutions like investment banks and capital markets.

### **Micro policies**

The dynamics of the process creating the city-region must work at various levels of abstraction, involving the formation of the city-region with different productive agents in the process. At the micro level, development must gain impetus from the incorporation of different production units, above all, supporting itself on policies that improve entrepreneurial efficiency through the participation of technological management programs, innovation, product cycles, technological networks, entrepreneurial logistics, coordination among suppliers, producers and users. This development is complemented with the development of consumer units, joining them to producers that are distributed in the process of marketing goods and distributing services.

### **Financial mechanisms for innovation**

The marketing of a city-region is associated with the mobilization of important resources into productive activities over a prolonged period of time. This difficult task is identified with the continuous investment of company profits, the channeling of budget resources and the participation of risk capital from the private sector. A basic question is to determine the channeling of said resources. Generally, state savings are devoted to attending to unsatisfied public needs and a large number of the funds earmarked for that purpose are rerouted to operational expenses. Their effect, therefore, on growth is quite limited, resulting in nothing more than delaying the possibilities of inserting the city-region's economy within the competitive international environment. Hence two institutional elements that deserve greater marketing emphasis and that can foster technological change, innovation, global competitiveness and ultimately endogenous growth are explored.

## Global resources for technological change

This paragraph attempts to indicate the mechanisms and sources of financing used by several governments and private entities in order to stimulate technological development and innovation.<sup>53</sup> **Chile** has a Science and Technology Program aimed at motivating innovation and research and development capacity. Furthermore, it intends to provide coordination between the productive sector and the scientific and technological community. For this purpose, it has financial instruments for basic scientific research, technological development and production research in companies. Between 1992 and 1995, Chile invested US\$152 million. The Science and Technology Program 1996-2000 sets up a continuous program for the creation of a National Innovation System within which state institutions cooperate. It attempts to strengthen the national technological infrastructure, support institutional modernization and promote the formation of human resources. The government appropriated in the amount of US\$355 million in hopes of progressively reaching 1.2% of the GDP for research and development. In sectoral terms, the program attempts to support technological innovation projects in productive enterprises, generate processes in areas with strategic impact, technological infrastructure projects at universities and technological centers, transformation of agriculture and research in the copper industry. The allocation of these resources was based on the principle that demand would come from production enterprise. In order to meet international competition requirements, it is hoped that companies will develop their own quality control and research and development infrastructure. Companies in the same sector are also expected to promote technology transfer among themselves and, in general, to project their production toward the international market by means of the acceptance that a country-trademark generates. The *marketing* of this product depends on the knowledge of market niches that the individual producer has.

The overall problem for private capital to join this process is that they assume the inherent risk in the projects, as in investment banking, and that they find support from joint State guarantees with private banking. Taking up projects for international competitiveness requires a change of mentality in banking and risk investors, in that they must join in the spirit of evaluating and financing technological innovation projects. Among

53 See the work presented at the Seminario Internacional sobre Fuentes de Financiamiento de la Innovación. Colciencias, December, 1998. Santafé de Bogotá. Campos Ortega, Sylvio. *Mecanismos y Fuentes de Financiamiento de la Innovación y Desarrollo Tecnológico en Chile*. Galante, Oscar. *Financiamiento de la Innovación Caso Argentino*. Fondo Tecnológico Argentino. Líneas de Fomento a la Innovación Tecnológica. Agencia Nacional de Promoción Científica y Tecnológica. Ramírez, Juan Antonio. *Instrumentos de Fomento para el Desarrollo Tecnológico en Méjico*. Rezende de Carvalho, Paulo Cesar. *La Experiencia Brasileña de Apoyo a la Innovación Tecnológica*. Naranjo, Adolfo José. *Capital de Riesgo para Empresas de Base Tecnológica en Colombia*. Reyes Posada, Gabriel. Mecanismos financieros para el fomento de la Innovación y el Desarrollo Tecnológico. Rivera, Carlos Fernando. *Los Modelos de Financiación Pública del Sistema de Ciencia y Tecnología Agropecuario*. Giraldo, Carlos Mario. *La Empresa Innovadora del siglo XXI*- Noel. Dian. Incentivos Tributarios a las Actividades de Ciencia y Tecnología.

the credit lines granted by the Fondo de Desarrollo Tecnológico y Productivo- CORFO, projects in the following areas may be highlighted: technological innovation, infrastructure, technology transfer, technological missions, technology transfer centers and pre-investment studies in innovation projects. From 1991 to 1997, Fontec financed 865 projects at a cost of US\$123 million. The 336 cases for the manufacturing industry at a cost of US\$50.8 million stand out. Projects involving production links have gained growing importance among the total.

In the case of Argentina, liberalization has promoted a selective mechanism in which some economic, entrepreneurial and regional agents have reacted more quickly than others to the topic of competition. Progress has been made during this process in harmonizing the work of technology providers, granting of technology licenses, association of foreign partners and the pedagogical reorientation of universities and research centers. In order to stimulate the collective learning process, a network or National Innovation System was created for competitiveness. Within this model, science and technology are considered exogenous determinants of the growth model. The National Agency for Promotion and Technology has the mission of promoting scientific and technological research, innovation and improvement in productive systems. The Agency has two funds: the Fondo Científico y Tecnológico-Foncyt and the Fondo Tecnológico Argentino- Fontar. In general, Fontar finances Research and Development, Technological Development, Modernization, Training and Technical Assistance projects. In order to achieve the objectives of competitiveness and innovation, it has special credit lines for Modernization, Technology Services and Innovation. These instruments finance the use of local scientific capacity, association of research and development centers and agreements for co-financing of projects. The modernization project has resources in the amount of US\$59 million, 50% of which come from IDB. Since its creation, projects for a value of US\$77 million have been financed, of which US\$57 million were provided by the private sector and US\$20 from the Fund. The Technology Services project attempts to improve infrastructure and company equipment by offering them various services. Total amount of resources contributed for this line equals US\$21 million. A similar amount was assigned to the line of projects for Technological Innovation that promotes the production of new goods, processes and services. Small and medium sized industry has received support and subsidies for 23 projects. Law 23877 gives the Executive power to channel funds for projects in Technological Modernization, Development, Contingency Development, Training, Project Formulation, Consulting and Fiscal Credit. Its functions are somewhat similar to those of the Investment Bank analyzed below.

The **Mexican** experience is framed within the development of their National Development Plan as far as modernization and entrepreneurial competition is concerned. The Development Bank or second floor supports target sectors, financial innovation characteristic of investment banking, funding and specialized intermediation. This banking system has resources for stock investment, risk capital and guarantees or endorsements, and

in general the products analyzed in the investment banking section. Mexico is one of the most developed countries with respect to science and technology programs. Among its lines we should mention, programs for Training and Technical Assistance, Development of Suppliers and Guarantees Programs.

## 6. Investment banking and risk capital

Another general alternative is to propose the development of a legal regulation that will expand the functions and powers of the Regional Development Bank, orienting it toward the functions of a Universal or Investment Bank that will complement the work promoted through application of the budget. We refer to the promotion and operation of projects for competitiveness, work contracts and the engagement of shareholders, supervision and design of projects, sales and monitoring. This is an important decision if we take into account that in the world of today the cycle of technological innovation is becoming shorter and shorter.

This Bank would head the process of promoting projects from the initial stages, including the financing of pre-feasibility studies, feasibility, execution of works, inspection, start up and follow up of the project. Financial support and intensification of private capital in this type of initiative generate new products and financial services. The identification of projects, knowledge of the environmental surroundings, technical and financial viability of them are factors that help innovation and competitiveness. Legally, steps have been taken in this direction in Colombia that would facilitate the process. In 1980, with Decree 2461, the government foresaw the role of financial corporations in development or investment banking, allowing them to finance the acquisition of shares in projects. Later, decree 2041 of 1987 expanded the set of operations, allowing them to form investment establishments and to promote the merger and transformation of companies. This regulation expanded the functions to:

- Granting of credit
- Investment of capital in companies
- Granting of guarantees or endorsements
- Subscribing underwriting and factoring operations
- Creation, merger and transformation of companies
- Subscription and acquisition of shares or bonds convertible in shares
- Placement of company securities
- Granting of securities for periods over one year.

In addition they were allowed to:

- Carry out exchange operations
- Serve as financial intermediaries in foreign exchange operations
- Negotiate securities representative of corporate capital or shares
- Finance and lend consulting services
- Finance individual parties for the purpose of acquiring shares or corporate quotas in projects

The foregoing functions are useful as financial instruments, but they still need to become institutions specialized in promoting projects. For this reason, the spirit that moves investment banks is a spirit that promotes the creation and management of projects. One obstacle to the development of projects is financing of operations that involve contracts requiring risks to be covered.

Other service activities that the Investment Bank facilitates and constitute a source of resources are:

- Financial consulting
- Entrepreneurial reorganization
- Mergers and privatization
- Acquisition of companies
- Investment management
- Issuance of stocks and bonds
- Purchase and acquisition of shares
- Operations underwriting

### **6.1. New products**

As a consequence of intensification of financing and its level of specialization in offering new and modern services, the Investment Bank offers remunerated products for finance institutions, such as the design and formation of corporate finances, applicable to groups of townships that want to join together to render services.

- Offering of financial consulting
- Risk investment portfolio administration
- Financial intermediation in the money and capital markets

- Operations in derivative products
- Marketing and issuance of debt securities, such as bonds, Eurobonds, shares and commercial instruments
- Underwriting operations, purchase and placement of issues
- Repurchase and structuring of debts
- Conversion of debt into capital
- Public debt and refinancing placement
- Mobilization of assets that are unproductive or differed due to their title holding

As a consequence of the growth and increased participation of share capital in the financial market, operations such as the following can be pointed out: administration of fixed earnings funds, common funds, securities funds, mutual funds and retirement funds.

There are also variable earnings funds such as shares and convertible bonds, country funds, such as the Fondo Colombia that associates foreign capital as partners, foreign currency funds, administration of private portfolios, such as trustee funds and mandates. Due to the freeing of interest rates and the increase in operations in which risk capital identified with the development of new projects is identified, we can underline the importance of undertaking intermediation operations, such as stock brokering in fixed and variable income operations, underwriting operations in fixed earnings securities and purchase of portfolios, fund brokering and inter-banking operations.

## 6.2. Guarantees and risk assets

To the degree that the entity finds it viable to fulfill roles other than the conventional intermediation of rediscounting and commercially projects itself, generating additional resources, it must explore the offer of other modern financial products. A good example is the subscription and negotiation in the secondary market of risk coverage assets, such as guarantees. This would cut the financing costs of projects by covering risks that the market cannot assume or that would raise the financial cost of the project.

The process of privatization of public utilities companies, as well as their development might not be viable unless the contingency factor is minimized, for example, through the subscription of partial guarantees of risk. This is the case of projects, building-possession-operation-transfer, and building-possession-operation, or as known in technical language of structural risks associated with a project.<sup>54</sup>

These are classified as non-commercial and oriented particularly to cushioning the terms of reference once:

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<sup>54</sup> Traverso, Victor. *Facilidades del Sector Privado*. Banco Inter-Americano de Desarrollo. 1995.



- Financial terms are set out
- Co-financing is facilitated
- Sale of corporate share capital is promoted in capital markets

Allocation of credit resources can be extended to finance coverage operations tending to mitigate the effect of the:

- Country risk
- Exchange rate risk
- Work culmination risk
- Insufficient income risk
- Financial leverage risk
- Gestation period risk
- Asset risk
- Sponsorship risk

Normally, guarantees and counter-guarantees for projects that third parties promote or endorse are granted and negotiated.<sup>55</sup>

### 6.3. Assigning asset titles

Growing participation of risk capital in the financial market and the need to free resources in companies has led investment banking and other financial intermediaries to bring in fresh resources for projects from the capital markets. This title granting is done in order to use the flow of income from the assets set up for this purpose. They are backed by their transfer and isolation in a vehicle created for this purpose. The income from the rates paid for services charged in the rendering of utility service, such as water, sewers, telephones, school registration, road tolls, rentals or use of market places or slaughterhouses taken together may become subject to this title granting. The Title granting is issued as a paper or security representing an asset. For example, the water system and its domiciliary network, a highway, the phone rates and transmission of electronic data. The advantage for a town or a company in the process of privatization, or a similar company is that from the accounting point of view, liabilities are not increased upon subscribing these titles, since this way of obtaining fresh resources from the capital market does not imply an indebtedness for the company looking to acquire leverage in this way. The titles issued are documents that contain participatory rights in specially constituted goods for the welfare of the community or they are rights with a credit content backed by the assets named.

<sup>55</sup> World Bank. See La Garantía del Banco Mundial. *Catalizador para los Flujos de Capital Privado*. Septiembre 1995. p 2. Turbay Marulanda, Gabriel. *Participación Privada en Infraestructura Física*. Mecanografiado. 1997.

The title granting can be structured through two mechanisms:

- Subscription of autonomous property
- Formation of a special common fund

Autonomous property, is formed by means of a mercantile trust contract with the goods that are to be signed over, or with funds earmarked for the acquisition of those goods. Following the formation of the patrimony, the trust will request permits from the authorities to issue titles or securities and collect the revenue derived from their placement. The goods that make up the autonomous property, in the case it is formed, provide backing for the liabilities that are acquired with the holders of these titles. A special common fund that is formed like a trust, is aimed at offering certifications of participation in it on the securities market.<sup>56</sup>

#### **6.4. Concluding remark**

To make Bogotá a city-region prepared to compete in the world economy requires the formulation of a set of measures, projects and serious programs. It is a complex, interdisciplinary and highly political task. It is a task with deep political repercussions and must be undertaken by minds with a solid conception of the State, but its dividends have an immense projection. It requires the understanding, participation and action of many components of the political equation and requires the active presence of international actors. To generate greater economic surplus for the capitalization of the production apparatus is an unquestionably interesting goal.

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