

**A REESTRUTURAÇÃO POLÍTICA DO  
RIO/SÃO PAULO: PADRÕES DE  
INTEGRAÇÃO GLOBAL**

**Hamilton C. Tolosa**  
(Universidade Cândido Mendes)

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DIRETORIA DE ESTUDOS MACROECONÔMICOS (DIMAC)  
COORDENAÇÃO DE SEMINÁRIOS**

**A Reestruturação Política do Rio/São Paulo: Padrões de  
Integração Global**

**Hamilton C. Tolosa**

( Universidade Cândido Mendes)

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**RESUMO**

O objetivo do presente trabalho é discutir o comportamento e as preferências locacionais de algumas das principais atividades produtivas tipicamente encontradas em metrópoles com alta hierarquia na distribuição mundial de cidades (Nova York, Londres por exemplo) e investigar a possibilidade das mesmas virem a se localizar ou se expandirem na região metropolitana do Rio/São Paulo. Mais precisamente, a idéia é analisar de que maneira a crescente integração da região nos mercados internacionais pode induzir mudanças estruturais em variáveis tais como: - composição setorial, absorção de inovações tecnológicas, portfolio de investimentos e padrões locacionais das atividades localizadas nessas metrópoles.

Para todos efeitos, a região urbana dominada pelo Rio/São Paulo representa um caso inédito dentro da experiência internacional de desenvolvimento urbano, uma vez que reúne duas grandes aglomerações distantes apenas 400 quilômetros entre si, possui uma população da ordem de 37 milhões de habitantes e gera um terço do Produto Nacional, ou seja, um tamanho econômico comparável a países como a Noruega ou Polônia.

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## **The Rio/São Paulo Extended Metropolitan Region: A Quest for Global Integration\***

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### **1. Introduction**

The third globalization wave has brought out striking new patterns of developing countries exports. Actually, since the mid eighties a large group of developing economies broke into global markets. In 1980 only twenty five percent of developing countries exports were manufactures; by 1998 this share had risen to eighty percent. Likewise, there has been a substantial increase in the exports of services<sup>1</sup>.

Several of these developing countries have undertaken reforms involving stabilization, investment liberalization and property rights. "As they reformed and integrated with the world market,

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<sup>1</sup> According to the World Bank (2002), Chapter 1; there have been three waves of globalization in modern economic history. The first wave comprised the years from 1870 to 1914. After the First Great War the world retreated to nationalism, anti-immigrant sentiment and drastic restrictions to trade. During the second globalization wave (1945-1980) most developing countries did not participate in the growth of global trade, in other words, "trade was selective both in terms of which countries participated and which products were included" (p. 28). Finally, the third wave of globalization, which began about 1980, has been quite distinctive in the sense of : i) incorporating a large group of developing economies into global markets, while ii) "other developing countries became increasingly marginalized in the world economy and suffered declining incomes and rising poverty and iii) international migration and capital movements, which were negligible during the second wave of globalization, have again become substantial" (p. 31).

the “more globalized” developing economies started to grow rapidly, accelerating steadily from 2.9 percent in the 1970s to 5 percent through the 1990s. They found themselves in a virtuous circle of rising growth and rising penetration of world markets. It seems likely that growth and trade reinforced each other, and the policies of educational expansion, reduced trade barriers, and strategic sectorial reforms reinforced both growth and trade”<sup>2</sup>

In middle income economies, globalization has also given birth to new forms of industrial relations and brought forth unparalleled spatial changes associated with the production side of metropolitan economies

Thereon, the major purpose of this paper is to inquire into the nature of globalization induced spatial changes. For that matter, it tries to explain the behavior of some “typical” high-rank world city industries and services actually located or capable of being located in Brazil. More precisely, one intends to analyze the nature of changes in product mix, technological innovation, investment portfolios and location preferences coming about as consequence of competitive integration in international markets.

With these questions in mind, the paper looks into recent structural adjustments taking place in the Rio/São Paulo Extended Metropolitan Region (RSPER). In addition to the official<sup>3</sup> Rio and São Paulo Metropolitan Areas, the Extended Region is here defined as encompassing most of the medium-sized cities located along the Rio/São Paulo transport axis and the significant industrial area dominated by the city of Campinas (see map)<sup>4</sup>. As a whole, the Extended Region concentrates nearly one third of the Brazilian Gross Domestic Product and commands an overwhelming share of modern services, technological innovations and leading investments.

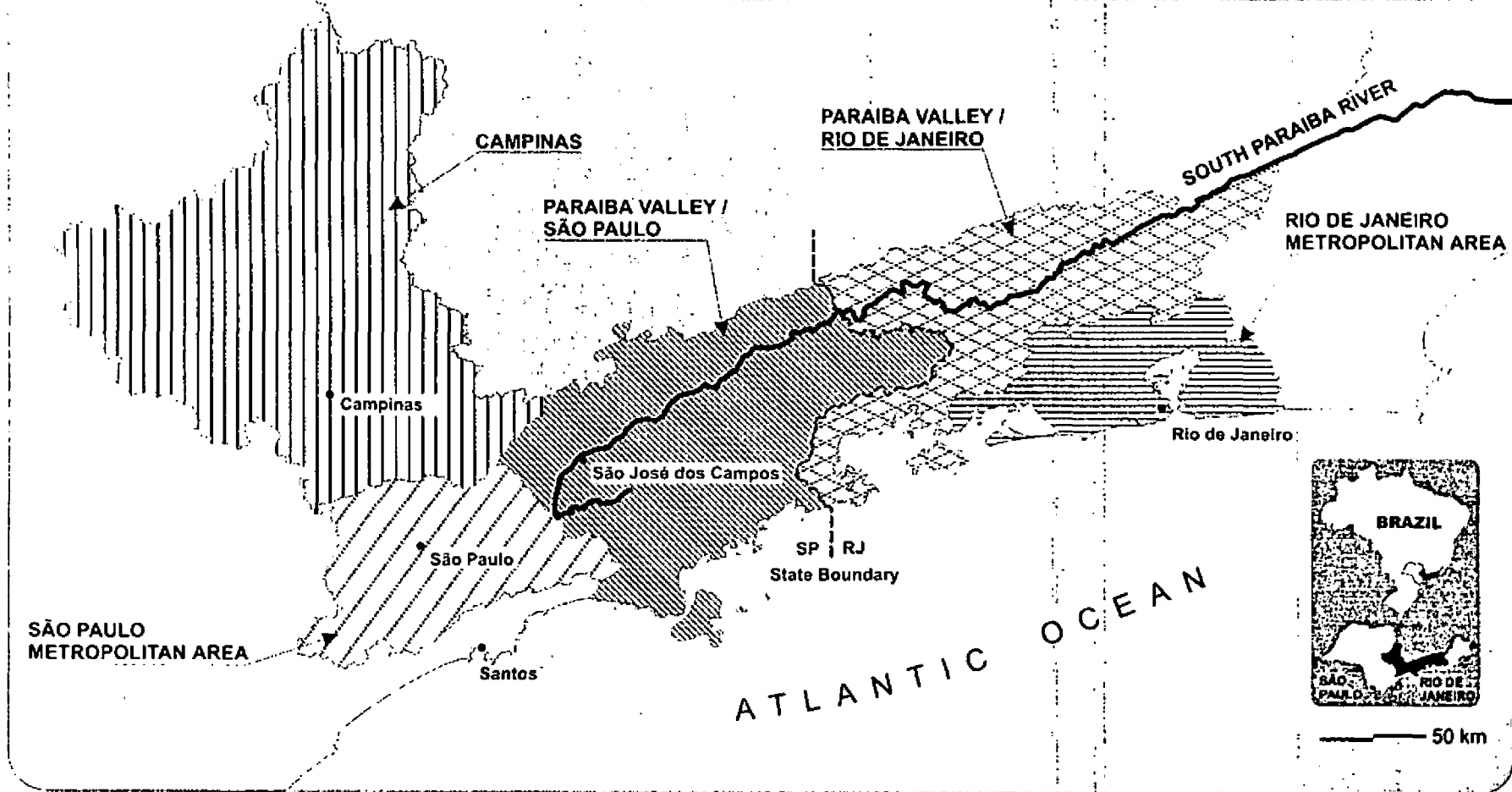
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<sup>2</sup> Ibid.,p.36.

<sup>3</sup> In 1973, a federal law established the first group of eight metropolitan areas (São Paulo, Porto Alegre, Curitiba, Belo Horizonte, Salvador, Recife, Fortaleza and Belém). One year later, a new law was issued creating the ninth area, the Rio de Janeiro Metropolitan Area (RJMA). Since their creation, the boundaries of the nine most important metropolitan areas remained basically unchanged.

<sup>4</sup> Presently Campinas and the Santos seaport are themselves metropolitan regions .See [www.seade.gov.br](http://www.seade.gov.br).

# The Rio / São Paulo Extended Metropolitan Region





It should be noted that the Extended Metropolitan Region represents a fairly unusual case among developing countries, in the sense of raising a set of peculiar policy issues associated with the economic integration of two large metropolitan agglomerations only 219 miles apart from each other. In addition to its geographical proximity, the Rio/São Paulo ensemble stands for an economic size (Gross Regional Product) comparable to countries such as Poland or Norway<sup>5</sup>. The region also offers diversified infrastructure facilities and has a production capacity similar to some of the prime world cities.

In order to improve its competitive standing in international markets, the metropolitan economies of Rio de Janeiro and São Paulo ought to be able, in the first place, to strengthen their reciprocal complementarities. In spatial terms this implies that some activities have to be internally relocated, new technological processes introduced and actual production scales reevaluated. From a supply side standpoint, global integration also requires the definition of sector clusters distinctively associated with world cities, that is, exhibiting a set of production features regarded as representative or “typical” of high-rank world cities. Along these lines, Section Two briefly reviews the behavior of “typical” world city industries and services and their potential contribution to internal restructuring and global integration. Section Three brings forward some of the Extended Metropolitan Region major economic and demographic characteristics. Next, Section Four looks into the relationship between investment portfolios and the production restructuring process in the Extended Region three major sub-regions, namely: i) São Paulo Metropolitan Area (SPMA) and Campinas; ii) South Paraíba River Valley and iii) Rio de Janeiro Metropolitan Area (RJMA). Finally, Section Five discusses the Extended Region competitive integration trends and its growth prospects over the next decade.

## **2. Technical Complementarities and the Shaping of a Global Urban System**

Urban systems are simultaneously defined by sets of cities of different sizes and locations and by spatially oriented flows of goods, services, market and technological information among cities. Thereon, any urban system can be uniquely defined by a hierarchical set of urban nodes and dependency vectors.

In a closed economy, a system of cities is always referred to national or regional boundaries. To the extent that economies open their frontiers to international trade, distinct national urban systems

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<sup>5</sup> See World Bank: Data and Statistics; Quick Reference Tables; [www.worldbank.org](http://www.worldbank.org).

progressively interact on one another and the aggregate of national systems converges to a system of cities defined on a worldwide basis. Along the transition path from national to global, hierarchies and interdependency relations among cities are redefined according to changes in urban competitive advantages. At any point along such a path the high-rank nodes in the global hierarchy are known as world cities and play a crucial function of trickling-down market and technological information to lower-rank urban centers. According to such a model, the Extended Rio/São Paulo Metropolitan Region (RSPER) is seen as a single node in the system of high-rank world cities.

The urban economics literature<sup>6</sup> has tried to devise empirical criteria capable of ranking cities in a world urban system. Friedmann, for instance, suggests that the world city rank will depend upon three major factors: i) the presence of leading international corporations, ii) its role as a large financial center and iii) its manufacturing production scale and innovation ability.

High-Technology Clusters and Knowledge-Based Complexes are loosely defined concepts commonly used in the literature to highlight the leading role played by technology and information-intensive activities in modern world city development. The Organization for Economic Co-Operation and Development (OECD) defines knowledge-based industries and services as the set of intensive activities in technology and human capital<sup>7</sup>. "The effective use of knowledge and information is becoming the most important factor for international competitiveness, as well as for the creation of wealth and improved social well-being"<sup>8</sup>.

The complexes basic proposal is to strengthen inter-sectorial linkages<sup>9</sup> in a cost efficient way. From a spatial standpoint, most of the market and technological changes brought about by globalization tend to strongly favor the location of knowledge and information-intensive complexes in prime world cities. Among these changes, the most remarkable involve both: - the centralization of investment decisions and the decentralization of goods and services production. Actually, the dissemination of new technologies has weakened the importance of economies of scale in modern industries and has enabled these activities to bring parts and components together in assembly-nodes scattered all over the world. In

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<sup>6</sup>See, J. Friedmann (1986), p.71.

<sup>7</sup>The technology and human/intellectual capital embodied in the complexes tend to grow along their life cycle. Likewise, some of production stages tend to be decentralized and subcontracted.

<sup>8</sup> L. Thurow (1999) and OECD/World Bank (2000), p.31.

<sup>9</sup> Technical complementarities are expressed as variable production coefficients  $a_{ij}$ , for sectors  $i$  and  $j$  and are written as functions  $F$  of the state of technology  $\Phi_j$  in sector  $j$ ; production scale  $Q_j$  in  $j$ , and relative prices  $p_i/p_j$ ; that is,  $a_{ij}=F(\Phi_j;Q_j,p_i/p_j)$ . In the constant coefficient (linear) case  $F$  is written simply as  $a_{ij}=\alpha_{ij} \cdot p_i / p_j$  where the  $\alpha_{ij}$  are technical coefficient measured in physical units.

other words, production activities are spatially dispersed whereas investment decisions are a world city privilege.

As follows, “typical high-rank world city complexes” exhibit a set of major technical and market features worth referring at this point:

- “Typical complexes” play a dominating role in regional growth and command high value-added coefficients.
- Display strong technical and market linkages with the foreign located activities. It follows that “typical complexes” tend to be specially vulnerable to international cycles and external shocks.
- Are highly intensive in knowledge, technology and R&D.
- Play the role of key technology transfer agents, which include the absorption, adaptation and transmission of technological innovations and new managerial methods.
- Are low direct-users of local primary factors and inputs. Its local impact depends upon the implementation of policies specially designed to increase local multipliers. Direct impact on local employment is usually low although its indirect production and labor effects may result significant.
- Exhibit spatially concentrated decisions patterns (decision nodes) and scattered spatial distribution of production sites. (assembly nodes<sup>10</sup>).

### **3.The Extended Metropolitan Region: Major Demographic and Economic Features**

The Extended Metropolitan Region, as defined above, has an elongated shape parallel to the South Paraiba River (see map) and spreads over a geographical area of 80 739 square kilometers. It also displays some of the highest demographic and economic densities in Latin America. According to the latest Brazilian Demographic Census (2000), the Extended Region population amounted to over 36 million urban residents, roughly 22% of the national urban population. Furthermore, according to Table I, its estimated Gross Regional Product in 2000 amounted to more than one hundred and seventy billion dollars, about one third of the Brazilian Domestic Product in that same year. In order to illustrate the

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<sup>10</sup> Referring to the recent historical experience of industrialized countries, the World Bank writes: “The second wave of globalization introduced a new type of trade: rich country specialization in manufacturing niches that gained productivity from agglomerated clusters. Most trade between developed countries became determined not by comparative advantage based on differences in factor endowments but by cost savings from agglomeration and scale. Because such cost savings are quite

degree of spatial concentration in the Brazilian Southeast it could be noted that the geographical area contained within a semicircle of 500 km. radius centered at the RJMA accounts for nearly two thirds of the National Product.

In spite of its current size, the Extended Region population growth has been slowing down for the last two decades. As a matter of fact, average growth rates have remained fairly stable in the Greater São Paulo (1.7% in 1980/91 and 1,65% in 1991/2000) and have grown slightly in the Greater Rio (0.8% in 1980/91 and 1,1% in 1991/2000). Most of the demographic growth occurred in the large metropolitan peripheries and in the Paraíba River Valley medium-sized cities, possibly a lagged response to the deep recession of the eighties and the slow economic recovery afterwards. Table I

**Rio/ São Paulo Extended Metropolitan Region (RSPER)**  
**Demographic and Economic Indicators**  
**(2000)**

Sub-Regions of the RJ/SP Extended Metropolitan Region	Urban Population (10 <sup>3</sup> )	Urbanization Ratio (%)	Average Yearly Growth Rate (1991/2000)	Area (km <sup>2</sup> )	Density (Inhab./ km <sup>2</sup> )	Gross <sup>(1)</sup> Regional Product (US\$ 10 <sup>9</sup> )	GRP Sector Share (%)			
							Ind.	Comm	Serv.	Other
São Paulo Met. Area	17 119.4 (46.9)	95.7	1.65	8 051	2 126.3	66.54 (39.3)	42.6	23.3	15.6	18.5
Campinas Area <sup>(2)</sup>	5 007.2 (13.7)	92.8	2.29	27 079	184.9	27.68 (16.4)	48.6	15.2	9.8	26.4
Paraíba River Valley	3 547.3 (9.8)	90.7	1.73	39 916	77.6	21.41 (12.6)	45.2	7.1	23.2	24.5
São Paulo Section <sup>(3)</sup>	1 851.9	92.9	2.13	16 268	113.8	13.39	54.0	8.6	6.5	30.9
Rio de Janeiro Section	1 695.4	87.4	1.16	23 648	52.8	8.02	32.7	5.0	46.2	16.0
Rio de Janeiro Met. Area	10 792.5 (29.6)	96.0	1.14	5 693	1 895.7	53.70 (31.7)	14.6	8.0	70.1	7.3
RJ/SP Extended Region	36 466.4 (100.0)	94.9	1.59	80 739	446.13	169.33 (100.0)	34.3	15.0	34.1	16.6

Sources: State of São Paulo Data Analysis Foundation, (SEADE/SP), [www.seade.gov.br](http://www.seade.gov.br) and State of Rio de Janeiro Information and Data Center (CIDE/RJ); *Rio de Janeiro State Yearbook* – 2001.

Obs. (1) Estimated at-factors prices. Numbers in parentheses indicate relative shares. (2) Refers to the Campinas Administrative Region, as defined by SEADE/SP; (3) Refers to the São José dos Campos Administrative Region, as defined by SEADE/SP.

specific to each activity, although each individual industry became more and more concentrated geographically, industry as a whole remained very widely dispersed to avoid costs of congestion”, World Bank (2002), pp. 28-29.

Column seven on the right-hand side of Table I deserves special attention for trying to measure the Extended Region economic size. The Gross Regional Products (GRP) estimates are based on local value added taxes and carry methodological differences which most certainly bias<sup>11</sup> downwards the São Paulo estimates. Despite these shortcomings, the GRP figures ascribe an order of magnitude to local economic activities and are useful to depict the sub-regional shares in the RSPER production effort.

The Extended Region average yearly per capita income is estimated to have a value in the upper neighborhood of US\$ 4.6 thousand dollars per urban resident and reaches its highest value (over seven thousand dollars) in the São Paulo Section of the Paraíba River Valley. All these figures are much above the average Brazilian per capita Gross Domestic Product<sup>12</sup> (US\$ 2.9 thousand dollars) for that same year.

Regardless its demographic and economic size, the Extended Region major characteristic has to do with its internal structural imbalances. First of all, as shown by the last four columns of Table I, the sub-regions display a wide variation of sector shares. On one hand, the SPMA, Campinas and the Paraíba River Valley, specially its São Paulo Section, rely heavily on industrial activities. On the other, nearly 80% of the Greater Rio GRP depend upon all sorts of services, including commerce. In the latter case, the RJMA shares expose the longstanding inequity between a high income center and its impoverished periphery.

#### **4. Investment Choices and Structural Adjustment**

The investment variable measures positive or negative changes in capital stock<sup>13</sup>. Sets of investment projects with distinct characteristics normally produce different structural adjustment patterns. Among such relevant investment features one can mention: - sector choices, project location, scale of production, technology mix, gestation periods, input sources and consumer markets. Actually, investment portfolio analysis can be mostly helpful in explaining prospective production changes and to evaluate the effectiveness of regional restructuring and global integration policies.

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<sup>11</sup> The value added tax leaves out most personal and business services and includes goods, in general, and certain services such as transport and communications. The São Paulo value-added data refers to year 2000 and the Rio de Janeiro Gross Product are 1999 estimates. Exchange rates refer to July first of these same years.

<sup>12</sup> See, "Most Requested Series/Per Capita Gross Domestic Product", [www.ipeadata.gov.br](http://www.ipeadata.gov.br)

Assume a given urban center of rank  $j$  in a worldwide system of cities<sup>14</sup> Assume further that the variable  $V_j(t)$  stands for its typical production profile and at point  $t=t_0$ , local authorities start a series of policy actions capable of improving city rank from  $j$  to  $g$  ( $g>j$ ) in the positive time interval  $(T-t_0)>0$ . The policy target vector is written as  $V^*(T)$ . Policy actions assume the form of alternative investment portfolios which, in turn, are themselves functions of the time horizon  $(T-t_0)$ . The sequence of structural adjustments required to achieve<sup>15</sup> target  $V^*(T)$  at point  $T$  will depend both on the amount of resources invested along the period  $(T-t_0)$  and the technology embodied in the investment portfolios.

Thereby, the “structural adjustment”<sup>16</sup> is defined as an incremental variable  $\Delta_j$  of vector  $V_j(t)$  and a competitive structural adjustment process can be seen as a sequence of changes leading to improvements in the global integration of  $j$ .

It is also reasonable to assume that the higher the technological intensity of an industry or service the better will be its chance of successful integration in international markets. In other words, technology intensity is taken as a proxy for global integration. For practical purposes the target vector  $V^*(T)$  is seldom known. However, if technical and market information on investment portfolios is available it is usually feasible to conjecture on  $V_j$  global integration prospects.

The Extended Region data singles out two key investment features: i) private investment project values scheduled<sup>17</sup> to be carried out in each of its five sub-regions, and ii) sector investments

<sup>13</sup> For accounting purposes it can also be associated with inventory changes.

<sup>14</sup> Assume a city size distribution  $V = \{V_{ij}\}$  where  $V_{ij}$  represents the production profile of city  $i$  and rank  $j$ . Each profile describes features as production scale, technology, activity mix and location preferences of existing sectors in city  $i$  of rank  $j$ . Next, define  $V_j = E(V_{ij})$  as the first moment (expected value) of  $V_{ij}$ . Under this condition, vector  $V_j$  may be seen as a representative or typical production profile of rank  $j$  cities. Thus, city size distribution  $V$  can be written as

$$V = E(V_{ij}) = \{V_j\} \text{ where } j = 1 \dots n$$

In the case where  $k \leq j$  the relation (1) below holds,

$$V_j = V_k + \Delta_j \text{ where } j = 1 \dots k \dots n \quad (1)$$

That is, all the production characteristics present in typical profile  $V_k$  are also present in  $V_j$  plus a component  $\Delta_j$  describing specific production characteristics present only in  $j$ -rank cities. In other words, profile  $k$  is contained in  $j$  (written as  $V_k \subset V_j$ ) and the latter can be differentiated due to its new characteristics embodied in  $\Delta_j$ . If, instead of just describing general production characteristics, vector  $V_j$  stands for a “typical” production profile of rank  $j$  cities,  $\beta_j$  represents marginal output/capital ratios observed in  $j$  and  $I_j$  is the investment portfolio of  $j$ , then equation (1) above can be rewritten as;

$$V_j = V_k + \beta_j I_j \quad j=1 \dots n. \quad (2)$$

According to relation (2) the incremental variable  $\Delta_j$  is simply written as  $\Delta_j = \beta_j I_j$  and says that the structural adjustment required to change a  $k$ -rank typical profile into a  $j$ -rank typical profile depends upon: i) - the investment values  $I_j$  and; ii) - the state of the technology embodied in the marginal output/capital ratios  $\beta_j$ .

<sup>15</sup> In the case of a successful policy the condition  $|V^*(T) - V_j(T)| = 0$  holds at terminal point  $T$ .

<sup>16</sup> Generally speaking, the structural adjustment process is defined as a monotonic function  $\Delta_j = F(I_j; \Phi_j; t)$  where  $I_j$  measures investment value,  $\Phi_j$  is the state of technology in  $j$  and  $t$  is the time axis.

ordered by classes of technological intensity. The information on the São Paulo Metropolitan Area, Campinas and the Paraíba Valley/São Paulo Section was collected by SEADE/SP (State of São Paulo Data Analysis Foundation)<sup>18</sup> over the period 1995/ May 2000 and is based on business newspapers and other financial publications. The original data was further validated and statistically criticized by SEADE/SP in order to avoid duplications. Investments associated with privatizations, mergers and capital markets were removed from the data set as well as expenditures on human resources, residential dwellings, durable goods, marketing, business fairs, meetings and auctions.

In the two remaining sub-regions: Rio de Janeiro Metropolitan Area and the Paraíba Valley/Rio de Janeiro Section, planned private investment values and the technological intensity index were obtained from aggregation of FIRJAN (Rio de Janeiro State Federation of Industries) data at the project level<sup>19</sup>. The original data identifies each project as a new plant unit, expansion or modernization. In order to avoid duplication only specific sequences of projects types were accepted. For instance, if a potential investor announces a new production unit at a given location in 1997, only expansion and/or modernization expenditures at that same location and later dates are regarded as distinct projects. In turn, if the same (or a very similar) new unit shows up more than once along the 1997/2002 period, it is likely that the original project has been postponed and only its earliest planned value should be accounted for<sup>20</sup>.

The investment portfolio analysis comprises three aggregation levels. First, investment portfolios are analyzed in each of the following sub-regions: i) SPMA and Campinas; ii) Paraíba River Valley and iii) RJMA. Second, at the micro level, major investment projects are listed (in the footnotes) and their relevant project features examined. Among those features one can mention: - corporation name; country of origin; project location; project type (new unit, expansion or modernization); investment value and project share in total sector investment. Third, at the most aggregated level, the Extended Region is envisaged as a single spatial unit.

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<sup>17</sup> In portuguese, "investimentos anunciados" can be literally translated as "announced investments", however it seems more appropriate to use commonly accepted words such as "planned", "programmed" or "expected".

<sup>18</sup> See, SEADE/SP (2000) and SEADE (2001). Both references are available from the site: [www.seade.gov.br](http://www.seade.gov.br).

<sup>19</sup> See, FIRJAN(The State of Rio de Janeiro Federation of Industries) "Decisão Rio", three issues dated: 1997/1999; 1999/2001; 2000/2002.

<sup>20</sup> This statistical procedure will prevent duplication and, at the same time, underestimates planned investment values. Investment portfolio analysis actually assumes that most planned investments are carried out during the given five year period, i.e., project mortality rate is small. Projects with gestation lags longer than five years or projects implemented in the later years of the five year period will bias upwards the investment values.

#### 4.1 São Paulo Metropolitan Area and Campinas

From a geographical point of view, the SPMA and the Campinas polarized area make up a nearly continuous metropolitan space. However, in economic and demographic terms, the two cases show quite distinct features. The SPMA Gross Regional Product is twice as large and the urban population is three times larger than Campinas. In both cases industrial activities play a dominant role (roughly 45% of GRP) but services seem to be growing faster and diversified.

As far as total investment values are concerned, the SPMA figure (US\$ 32.6 billion) more than doubles the value estimated for Campinas (US\$ 15.6 billion). The top ten activities (fifth column of Tables II and III) planned investment shares in both areas seem to follow a fairly similar pattern, accounting for 78% of total planned investments.

About half of the SPMA total planned investment value (US\$32.6 billion) has been allocated to Services and Commerce (US\$17.1) and US\$ 15.5 billion was assigned to Industry and other sectors. According to Table II, the three largest planned investment values, that is, Real Estate, Assembly of Motor Vehicles and Chemical Products concentrated nearly 50% of total investment expenditures in the five year period 1995/may2000. This share rises to 78.9% when the ten largest values are considered.

Among the service activities<sup>21</sup> in Table II at least five: - Telecommunications, Air Transport, Financial Intermediaries, Services Rendered to Business, Computing and Data Processing command either a H or an AH technology rating. It is also worth noting that all the above services are listed among the top twenty investment values, a strong evidence of the leading role played by these sectors in the regional adjustment process since the mid nineties.

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<sup>21</sup> Among the major investment projects in services located in the SPMA it is worth mentioning the following:

*Telecommunications:* - BCP; Brazil/USA; New Unit; São Paulo/ SPMA; US\$ 600 million [ 30.0 %]

- Metrophone; Brazil/USA; Expansion; São Paulo/SPMA; US\$ 400 million [ 19.7 %]

- MetroRed; USA, New Unit, São Paulo/SPMA; US\$ 200 million [ 9.8 %].

*Air Transport:* - TAM; Brazil; Expansion; São Paulo/SPMA; US\$ 1095 million [ 78.0 %]

From left to right each project information includes: company name country of origin; location (county and sub-region); investment project value and project share (in square brackets) in its corresponding sector investment value.



Table II  
São Paulo Metropolitan Area (SPMA) Planned Private Investments  
(1995/May 2000)

Ranking of Planned Investment Values	Productive Activities	Industry or Service	Planned Investment Values (10 <sup>6</sup> US\$)	Planned Investment Share (%)	Degree of Technological Intensity <sup>(1)</sup>
1	Real Estate	Serv.	6785.82	20.77	L
2	Manuf. and Assemb. of Motor Vehicles	Ind.	5688.07	17.41	AH
3	Chemical Products	Ind.	3191.85	9.77	AH
4	Retail and Repair of Domestic Appliances	Serv.	2318.03	7.10	L
5	Telecommunications	Serv.	2025.50	6.20	H
6	Food and Lodging	Serv.	1519.40	4.65	L
7	Air Transport	Serv.	1404.65	4.30	AH
8	Electronic and Communication Equip.	Ind.	1244.74	3.81	H
9	Pulp, Paper and Paper Products	Ind.	872.53	2.67	L
10	Culture, Recreation and Sports	Serv.	863.61	2.64	L
11	Electricity and Gas	Serv.	831.86	2.55	AL
12	Publishing and Printing	Ind.	616.57	1.89	L
13	Basic Metallurgy	Ind.	500.20	1.53	AL
14	Financial Intermediaries	Serv.	494.38	1.51	AH
15	Services Rendered to Business	Serv.	385.65	1.18	AH
16	Health and Social Work	Serv.	377.96	1.16	AL
17	Food Products and Beverages	Ind.	305.96	0.94	L
18	Electric Machinery and Materials	Ind.	297.12	0.91	AH
19	Textiles	Ind.	236.60	0.72	L
20	Computing and Data Processing	Serv.	226.31	0.69	H
21	Coke, Refined Petroleum and Alcohol	Ind.	220.61	0.68	AL
22	Machinery and Equipment	Ind.	218.40	0.67	AH
23	Education	Serv.	216.54	0.66	AL
24	Nonmetallic Mineral Products	Ind.	205.07	0.63	AL
25	Rubber and Plastics	Ind.	198.94	0.61	AL
26	Aux. Transport. and Travel Agencies	Serv.	177.30	0.54	L
27	Wood Products	Ind.	166.60	0.51	L
28	Trade and Repair of Motor Vehicles	Serv.	158.02	0.48	L
29	Metal Products exclusive Machinery	Ind.	140.71	0.43	AL
30	Extraction of Crude Oil and Related Serv.	Ind.	140.00	0.43	AL
31	Office and Computing Machinery	Ind.	113.64	0.43	H
32	Construction	Ind.	108.53	0.33	L
33	Furniture and Related Products	Ind.	89.72	0.27	L
34	Land Transport	Serv.	60.08	0.18	L
35	Wholesale Trade	Serv.	56.04	0.17	n.a.
36	Sanitation and Related Activities	Serv.	54.48	0.17	n.a.
37	Medical and Surgical Equipment	Ind.	52.20	0.16	H
-	Other activities	-	102.34	0.31	-
	Total	-	32665.73	100.00	-

Sources: SEADE/SP, "Investimentos Privados Anunciados no Estado de São Paulo: 1995 a maio de 2000" (Planned Private Investments in the State of São Paulo: 1995 to May 2000), São Paulo State Government, June 2000.

Obs: (1) H=High; AH=Average High; AL=Average Low; L=Low; n.a.=not available.

Table III  
Campinas Region <sup>(1)</sup>  
Planned Private Investments  
(1995/may 2000)

Ranking of Planned Investment Values	Productive Activities	Industry or Service	Planned Investment Values (10 <sup>6</sup> US\$)	Planned Investment Share (%)	Degree of Technological Intensity <sup>(2)</sup>
1	Coke, Refined Petroleum and Alcohol	Ind.	2677.65	17.08	AL
2	Manuf. and Assembly of Motor Vehicles	Ind.	1912.88	12.21	AH
3	Electricity and Gas	Serv.	1756.50	11.21	AL
4	Chemical Products	Ind.	1558.43	9.94	AH
5	Electronic and Communications Equip.	Ind.	905.98	5.78	H
6	Food Products and Beverages	Ind.	880.82	5.62	L
7	Real Estate	Serv.	659.22	4.21	L
8	Rubber and Plastics	Ind.	650.39	4.15	AL
9	Textiles	Ind.	643.96	4.11	L
10	Machinery and Equipment	Ind.	838.12	4.07	AH
11	Culture, Recreation and Sports	Serv.	577.91	3.69	L
12	Pulp, Paper and Paper Products	Ind.	458.82	2.93	L
13	Retail and Repair of Household Goods	Serv.	400.36	2.55	L
14	Basic Metallurgy	Ind.	395.84	2.53	AL
15	Food and Lodging	Serv.	239.72	1.53	L
16	Office and Computing Machinery	Ind.	146.71	0.94	H
17	Nonmetallic Mineral Products	Ind.	123.74	0.79	AL
18	Agro-industrial Prod. and Related Activities	Ind.	118.11	0.75	L
19	Metal Products exclusive Machinery	Ind.	111.91	0.71	AL
20	Air Transport	Serv.	100.53	0.64	AH
21	Telecommunications	Serv.	88.64	0.57	H
22	Construction	Ind.	85.50	0.55	L
23	Retail and Repair of Motor Vehicles	Serv.	79.75	0.51	L
24	Medical and Surgical Equipment	Ind.	45.50	0.29	H
25	Publishing and Printing	Ind.	40.50	0.26	L
26	Services Rendered to Business	Serv.	38.94	0.25	AH
27	Aux. Transport. and Travel Agencies	Serv.	37.37	0.24	L
28	Wood Products	Ind.	32.79	0.21	L
29	Electric Machinery and Materials	Ind.	32.42	0.21	AH
30	Computing and Data Processing	Serv.	29.20	0.19	H
31	Other Activities	-	4.59	-	-
Total		-	15672.80	100.0	-

Sources: SEADE/SP, "Investimentos Privados Anunciados no Estado de São Paulo: 1995 a maio de 2000" (Planned Private Investments in the State of São Paulo: 1995 to May 2000), São Paulo State Government, June 2000.

Obs: (1) Refers to Campinas Administrative Region, as defined by SEADE/SP; see [www.seade.gov.br](http://www.seade.gov.br).

(2) H=High; AH= Average High; AL=Average Low; L=Low; n.a.= not available.

Likewise, industrial activities as: the Assembly of Motor Vehicles<sup>22</sup>, Chemical Products, Electronic and Communications Equipment, Pulp and Paper, Publishing and Printing and Basic Metallurgy, all long-standing industries<sup>23</sup> in the Greater São Paulo area, show up as top priorities in the local investment portfolio. As regional restructuring proceeds, other technology-intensive industrial sectors: - Electric Material, Office and Computing Machinery, Medical and Surgical Equipment, are expected to increase their share in the SPMA investment portfolio.

According to Tables II and III, the top ten activities both in Campinas and in the Greater São Paulo are basically the same. It should also be noted that Coke, Refined Petroleum and related products as Rubber and Plastics, have been considered as traditional activities in Campinas for some time and, unlike the SPMA, still rank as the area top investment priorities. Furthermore, the Assembly of Motor Vehicles, Chemicals; Electronic and Communications Equipment, Machinery and Equipment, all with H and AH ratings, are prominent among the top ten in both areas, presumably suggesting similar industrial restructuring<sup>24</sup> patterns.

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<sup>22</sup> The Assembly of Motor Vehicles is a good example of a highly concentrated industrial activity in the São Paulo Metropolitan Area (SPMA). The sum of its four major investment projects accounts for 78.4% of the sector total planned investment value in the period 1995/2000, namely:

- i) Mercedes-Benz; Germany; Expansion/Modernization, São Bernardo/SPMA; US\$ 1206 million
- ii) Volkswagen; Germany; Expansion/Modernization; São Bernardo/SPMA; US\$ 2275
- iii) General Motors; USA; Expansion; São Caetano/SPMA; US\$ 724,15 million
- iv) Scania; Sweden; Expansion; São Paulo/SPMA; US\$ 255 million.

<sup>23</sup> In these latter five industries the major projects are:

*Chemicals*: - Petroquímica União; Brazil; Expansion; Santo André/SPMA; US\$ 558.8 million [ 17.5%].

*Electronic and Communications*: - ITC Net; USA; New Unit; São Paulo/SPMA; US\$ 470 million [38.0 %].

- Nextel; USA; Expansion; São Paulo/SPMA; US\$ 250 [20.0 %].

*Publishing and Printing*: - Grupo Abril, Brazil, New Unit; São Paulo/SPMA; US\$ 323 [52.4%]

<sup>24</sup> In Campinas the major projects are:

*Assembly of Motor Vehicles*: - Honda; Japan; New Unit; Sumaré/Campinas; US\$ 350 [18.3 %].

- Toyota; Japan; New Unit; Indaiatuba/Campinas; US\$ 150 [7.8 %].

*Chemicals*: - Rhodia; France; Expansion; Campinas; US\$ 348.2 [22.3 %].

- Elekeiroz; Brazil; New Unit; Varzea Paulista/Campinas; US\$ 204 [13.1 %].

*Electronic and Communication Equip.*: - Motorola; USA; Expansion; Campinas; US\$ 371.5 [41.0%]

- Lucent; USA; Expansion; Campinas; US\$ 190 [21.0 %]

*Textiles*: - Du Pont/Fibra; USA/Brazil; New Unit; Campinas; US\$ 297.4 [ 46.2 %]

*Coke and Refined Petroleum*: - Petrobras/PPP/Elekeiroz; Brazil; New Unit; Campinas; US\$ 2500 [ 94.0 %]

*Pulp and Paper*: - Ripasa; Brazil; Expansion; Limeira/Campinas; US\$ 250 [ 54.5 %]

*Rubber and Plastics*: - SVJ; Brazil; New Unit; Sumaré/Campinas; US\$ 200 [ 30.7 %]

*Food Products*: - Cervejaria Cintra; Portugal; New Unit; Mogi-Guaçu/Campinas; US\$ 136.3 [15.4 %]

## 4.2 The Paraíba River Valley: São Paulo and Rio de Janeiro Sections

The South Paraíba River Valley or simply Paraíba River Valley encompasses 59 small to middle-size highly urbanized counties distributed over an area of forty thousand square kilometers. As it happens in other areas of the Extended Region, the valley makes up a fairly heterogeneous geo-economic aggregate. The São Paulo Section is highly industrialized (54%) while its Rio de Janeiro counterpart is dominated by services (51%), mostly of the informal or low productivity type.

According to Tables IV and V, the São Paulo Section private investment value amounted to 11.2 billion dollars in the period 1995/May 2000, that is, almost three times larger than the corresponding investment value estimated<sup>25</sup> for the Rio de Janeiro Section, in a nearly equivalent period (1997/2002).

The valley is the site of the busiest traffic corridor in the country, having transported a cargo load of 162 million tons/year in 1997 and estimated to reach 211 million tons/year by 2005; the majority of it handled by road (96%). The Paraíba Valley multi-modal transport corridor also encompasses the largest cargo airport<sup>26</sup> (São Paulo/Guarulhos; Campinas/Viracopos and Rio de Janeiro) and seaport<sup>27</sup> (Santos/Sepeitiba/Rio de Janeiro) complexes in the Brazilian economy.

As shown in Table IV, 94.6% of the São Paulo Section total planned investment value is allocated to industrial activities. The top five Industries, namely: - Assembly of Motor Vehicles, Other Transport Equipment, Electronic and Communications Equipment, Basic Metallurgy and Pulp and Paper Products account<sup>28</sup> together for 70% of that total, noting that the first three activities carry either an H or an AH technology mark.

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<sup>25</sup> Most likely the Rio de Janeiro figure is underestimated due to differences in statistical coverage and criteria.

<sup>26</sup> In charge of 94% of the international air cargo.

<sup>27</sup> The so-called Southeast seaport complex handles 21% of the total long distance sea cargo.

<sup>28</sup> Among the major investment projects in the top five industrial activities one can mention:

*The Assembly of Motor Vehicles:*

General Motors; USA; New Unit; SJ dos Campos/SP Section; US\$ 1238,4 million [39.6 %]

Ford; USA; Expansion/Modern.; Taubaté/SP Section; US\$ 582.3 million [18.6 %]

Volkswagen; Germany; Expansion; Taubaté/SP Section; US\$ 411 million [13.1 %]

*Other Transport Equipment:*- Embraer; Brazil; Expansion/Modern.; SJ dos Campos/SP Section; US\$ 1850 million (of which US\$ 1300 million refers to R&D expenditures ) [100%].

*Electronic and Communication Equip.:*-Philips; Holland; Expansion; SJ dos Campos/SP Section; US\$ 275 million[30.1%].

Ericsson; Sweeden; Expansion/Modern.; SJ dos Campos/SP Section; US\$ 281 million[30.8%]

*Basic Metallurgy:*- Alcan; Canada;Expansion; Pindamonhangaba/SP Section; US\$ 419 million [37.0 %]

Usiminas; Brazil; New Unit; Taubaté/SP Section; US\$ 320 million [28.3 %]

*Pulp and Paper:*- Votorantin; Brazil; Expansion; Jacareí/SP Section; US\$ 660 million [81.4 %].

Table IV  
Paraíba River Valley  
São Paulo Section<sup>1</sup>  
Planned Private Investments  
(1995/may 2000)

Ranking of Planned Investment Values	Productive Activities	Industry or Service	Planned Investment Values (10 <sup>6</sup> US\$)	Planned Investment Share (%)	Degree of Technological Intensity <sup>2</sup>
1	Manuf. and Assemb. of Motor Vehicles	Ind.	3124.21	27.69	AH
2	Other Transport Equipment	Ind.	1852.40	16.42	AH
3	Basic Metallurgy	Ind.	1129.98	10.02	AL
4	Electronic and Communication Equip.	Ind.	912.82	8.09	H
5	Pulp, Paper and Paper Products	Ind.	811.42	7.19	L
6	Chemical Products	Ind.	784.18	6.95	AH
7	Electricity and Gas	Ind.	642.83	5.70	AL
8	Food Products and Beverages	Ind.	418.16	3.71	L
9	Nonmetallic Mineral Products	Ind.	332.77	2.95	AL
10	Retail and Repair of Household Goods	Ind.	244.85	2.17	L
11	Extraction of Crude Oil and Related Serv.	Ind.	165.52	1.47	AL
12	Metal Products exclusive Machinery	Ind.	162.47	1.44	AL
13	Telecommunications	Serv.	136.55	1.21	H
14	Recreation, Culture, and Sports	Serv.	74.40	0.66	L
15	Rubber and Plastics	Ind.	74.26	0.66	AL
16	Textiles	Ind.	64.84	0.57	L
17	Machinery and Equipment	Ind.	61.14	0.54	AH
18	Electrical Machinery and Materials	Ind.	44.05	0.39	AH
19	Construction	Ind.	40.00	0.35	L
20	Aux. Transport. and Travel Agencies	Serv.	34.11	0.30	L
21	Food and Lodging	Ind.	32.04	0.28	L
22	Coke, Refined Petroleum and Alcohol	Ind.	19.21	0.17	AL
23	Publishing and Printing	Ind.	17.53	0.16	L
24	Furniture and Related Products	Ind.	15.42	0.14	L
25	Real Estate	Serv.	15.00	0.13	L
26	Trade and Repair of Motor Vehicles	Serv.	12.85	0.11	L
27	Education	Serv.	12.13	0.11	AL
28	Waste and Scrap Recycling	Ind.	7.10	0.06	n.a.
29	Medical and Surgical Equipment	Ind.	5.50	0.05	H
30	Other Activities	Serv.	34.26	0.30	AH
	TOTAL		11282.00	100.00	-

Sources: SEADE/SP, "Investimentos Privados Anunciados no Estado de São Paulo: 1995 a maio de 2000" (Planned Private Investments in the State of São Paulo: 1995 to May 2000), São Paulo State Government, June 2000.

Obs: (1) Refers to São José dos Campos Administrative Region, as defined by SEADE/SP; see [www.seade.gov.br](http://www.seade.gov.br). (2) H=High; AH= Average High; AL=Average Low; L=Low; n.a.=information not available.

A comparison between Tables IV and V also shows that the Rio de Janeiro Section not only invests smaller amounts of resources than its São Paulo counterpart but also relies on more traditional (L or AL) industries and services, namely: Metallurgy (Steel and Nonmetallic Minerals); Food and Lodging and Food Products. The Rio de Janeiro Section of the valley has been a traditional producer of flat-

rolled, both coated and uncoated steel products. The CSN (Companhia Siderúrgica Nacional), one of the oldest steel mills in Latin America, has a rolling installed capacity of 4.6 million tons/year and is the only tinplated producer in the country, with a 1.1 million tons/year capacity. Its major operational investment (US\$ 670 million) in the period 2000/2002 dealt basically with the revamping and modernization of Blast Furnaces and Hot Strip Mills for the sake of improving its competitiveness abroad<sup>29</sup>.

Table V  
Paraíba River Valley  
Rio de Janeiro Section<sup>1</sup>  
Planned Private Investments  
(1997/2002)

Ranking of Planned Investment Values	Productive Activities	Industry or Service	Planned Investment Values (US\$ 10 <sup>6</sup> )	Planned Investment Share	Degree of Technological Intensity <sup>2</sup>
1	Basic Metallurgy	Ind.	1033.0	35.44	AL
2	Manuf. and Assemb. of Motor Vehicles	Ind.	700.0	24.02	AH
3	Rubber and Plastics	Ind.	220.0	7.55	AL
4	Other Transport Equipment	Ind.	204.5	7.02	AH
5	Food and Lodging	Serv.	183.3	6.29	L
6	Food Products and Beverages	Ind.	161.0	5.52	L
7	Nonmetallic Mineral Products	Ind.	136.0	4.67	AL
8	Chemical Products	Ind.	85.9	2.94	AH
9	Electric Machinery and Materials	Ind.	50.0	1.72	AH
10	Machinery and Equipment	Ind.	41.0	1.41	AH
-	Other Activities	-	100.0	3.43	-
Total		-	2914.7	100.00	-

Source: FIRJAN( State of Rio de Janeiro Federation of Industries) "Decisão Rio", (Rio Decision), three issues dated: 1997/1999; 1999/2001; 2000/2002.

Obs: (1) Comprises 32 counties located in four Rio de Janeiro State sub-regions: Mountains, Center South, Center North and Low Lands. (2)H=High; AH=Average High; AL=Average Low; L=Low.

Among the High Tech sectors located in the Paraíba Valley/RJ Section, namely Chemical Products; Electric Machinery and Materials; Machinery and Equipment; Other Transport Equipment and the Assembly of Motor Vehicles, only motor vehicles activities are novel to the region, specially the new Peugeot/Citroën Car and Truck Plant. Other units<sup>30</sup> worth mentioning at this point include Michelin

<sup>29</sup> Presently 1.1 million tons or 22% of CSN total production is exported.

<sup>30</sup> The major investment projects in the Paraíba Valley/Rio de Janeiro Section are:

*Assembly of Motor Vehicles*:- Peugeot/Citroën; France; New Unit; Porto Real/RJ Section; US\$ 600 million[85.7%]

*Chemicals*:-Instituto Bioquímico; Brazil,;New Unit;Itatiaia/RJ Section; US\$ 20 million [23.5%]

*Cyanamid*; USA; Expansion/Modern.;Resende/RJ Section; US\$ 12.4 million [14.4 %]

*Rubber*:- Michelin; France; New Unit; Itatiaia/RJ Section; US\$ 220 million [100 %]

*Basic Metallurgy*:- Galvasud; Brazil/Germany; New Unit; Porto Real/RJ Section; US\$ 290 million [28.0%]

*Machinery*:-Xerox; USA; Expansion; Itatiaia/RJ Section; US\$ 41 million [ 100 %]

(Rubber), Galvasud (Metallurgy), the expansion of Xerox (Machinery) and modernization of Nestlé (Food Products).

### **4.3 Rio de Janeiro Metropolitan Area**

The Rio de Janeiro Metropolitan Area (RJMA) is the second largest urban agglomeration in the country. It is also characterized by unfavorable topographical conditions, exponential infrastructure costs, rising land prices and by an extremely impoverished periphery. According to the most recent Brazilian Census, the RJMA urban population amounted to nearly 10.8 million residents in 2000, 54% of which living in its central city, Rio de Janeiro.

Actually, the RJMA economy has been recovering from a long period of decline during the eighties, when some of its most important basic production activities were severely stricken. This has been the case of local machinery, metallurgy and shipbuilding industries. There were also some relevant losses in services as banking, computer services and related activities. On the positive side, the area still retains some its comparative advantages in quaternary activities as higher education, oil-related P&D, engineering, business tourism, leisure and landscape-based activities. Lately the region has been specializing in high value-added transport modes, namely, containerized sea cargo.

Services and Commerce activities account for more than 78% of the area GRP, a much higher share than the average 50% estimated for the Extended Region as a whole (see Table I). Personal and domestic services prevail among tertiary occupations, a proxy for a large informal labor market.

As referred before in Section 3, the local sector shares also expose a long-term structural imbalance between a high-income center and its impoverished periphery. Actually, rising incomes in the center and poverty in the periphery combine to produce a large number of slums and a fast growing socially excluded population<sup>31</sup>.

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*Food Products*:- Nestlé; Switzerland; Modernization; Barra Mansa/RJ Section; US\$ 8 million [5.0%]

<sup>31</sup> See H. Tolosa, (1996), pp.203-223.

Table VI  
Rio de Janeiro Metropolitan Area (RJMA)  
Planned Private Investments  
(1997/2002)

Rank of Planned Investment Values	Productive Activities	Industry or Service	Planned Investment Values (US\$ 10 <sup>6</sup> )	Planned Investment Share	Degree of Technological Intensity <sup>1</sup>
1	Chemical Products	Ind.	1945.0	31.74	AH
2	Food and Lodging	Serv.	1877.1	30.63	L
3	Transport Equipment	Ind.	449.0	7.33	AH
4	Pharmaceutical Products	Ind.	389.3	6.35	H
5	Business and Trade Centers	Serv.	322.2	5.26	AL
6	Basic Metallurgy	Ind.	310.0	5.06	AL
7	Electric Machinery and Material	Ind.	245.3	4.00	AH
8	Food Products and Beverages	Ind.	178.6	2.91	L
9	Publishing and Printing	Ind.	120.0	1.96	L
10	Rubber and Plastics	Ind.	116.0	1.89	AL
11	Non-Metallic Mineral Products	Ind.	110.6	1.80	AL
12	Textiles	Ind.	25.0	0.41	L
-	Other Activities	-	40.0	0.65	-
-	Total		6128.1	100.00	

Source: FIRJAN(State of Rio de Janeiro Federation of Industries) "Decisão Rio" (Rio Decision), three issues dated: 1997/1999; 1999/2001; 2000/2002.

Obs: (1) H=High; AH=Average High; AL=Average Low; L=Low.

Chemicals<sup>32</sup>, especially petrochemical products, have been a traditional industrial activity in the RJMA as much as Pharmaceutical Products<sup>33</sup>, Transport Equipment (mostly Shipbuilding<sup>34</sup>), Rubber and Plastics, the first three sectors bearing high technological intensity ratings (See Table VI). As far as services are concerned, large planned investments values allocated to Food, Lodging, Hotels, Resorts and Trade Centers confirm a long-standing metropolitan tradition in tourism and landscape-related activities, with emphasis on professional and business meetings and conferences.

<sup>32</sup> *Chemicals*:- Riopolímeros; Brazil; New Unit; ; Duque de Caxias/RJMA, US\$ 990 million [51 %]  
Reduc/Petrobrás; Brazil; Expansion; Duque de Caxias/RJMA; US\$ 850million [43.7 %]

<sup>33</sup> *Pharmaceuticals*:- Smithkline; USA; New Unit; Rio/RJMA; US\$ 134 million [33.4 %]  
Bayer, Germany; Expansion/Modern.; Belfort Roxo/ RJMA; US\$ 25 million [6.4 %]  
Belfan Wella; Germany; Expansion; Rio/RJMA, US\$ 30 [ 7.7 %]  
GlaxoWellcome; England; New Unit; Rio/RJMA; US\$ 29 million [7.5 %]  
Knoll/Abbott; USA; Expansion/Modern.; Rio/RJMA; US\$ 29.3 million [ 7.5 %]  
Sanofi Winthrop; Brazil/USA; Modern.; Rio/RJMA; US\$ 25 million [6.4 %]

<sup>34</sup> *Transport Equipment/ Shipbuilding*: -  
Estaleiro Mauá; Brazil; Expansion; Rio/Niterói/RJMA, US\$400 million [89.0 %],



## 5. Competitive Integration Trends in the Extended Metropolitan Region

“Typical world city complexes” are notable for their strong international market linkages and high-technological contents. Moreover, the growth of the “typical complex” depends upon a selective number of rapidly expanding technology-intensive and knowledge-based activities. This is specially true in the cases of some fast growing business and financial services, such as auditing, managerial consulting, engineering, R&D, advertising, computer and data processing, insurance, legal services, commercial and investment banking, savings and loans, foreign currency markets, international finance and stock exchange.

High-rank nodes in the global system of world cities hold a keen competitive advantage as far as the location preferences of knowledge-based activities are concerned. Furthermore, hi-tech industries and services often display volatile location patterns and tend to be less sensitive to changes in local economic cycles.

As mentioned before, in order to achieve global integration, the Rio/São Paulo Extended Metropolitan Region depends upon a far-reaching effort to foster a set of technology-based activities distinctively associated with the growth of high-rank world cities. For the sake of evaluating how far the region as a whole has advanced along its competitive integration path, Table VII below presents the planned investment data consolidated by sub-regions and organized according to different levels of technological intensity.

If one accepts the technology intensity index as a proxy for international competitiveness, the last column figures on the right of Table VII clearly point out to an overall improvement in the Extended Region global integration. At the turn of the millenium, nearly half of the total private investment expenditures had been allocated to high and average-high technology activities. In addition, as shown in Section 4 footnotes, these high-tech industries and services tend to be closely associated with large value investment projects and high capital-output ratios. Namely, a production restructuring process concentrated in technology-intensive and large value investment projects<sup>35</sup>.

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<sup>35</sup> Brazilian-owned projects account for the major investment share (30 to 35%) in the region, followed, in decreasing order, by projects of American, German and French origin. However, joint capital (Brazilian/foreign) ventures are expected to

Table VII  
 RJ/SP Extended Metropolitan Region  
 Planned Private Investment Values by Degree of  
 Technological Intensity  
 (SP:1995/may 2000)  
 (RJ: 1997 /2002)  
 (10<sup>6</sup> US\$)

Degree of Technological Intensity	Sub-Regions					RJ/SP Extended Region
	São Paulo Metropolitan Area	Campinas	Paraíba River Valley/ SP Section	Paraíba River Valley/ RJ Section	Rio de Janeiro Metropolitan Area	
High	3662.1 (11.2)	1216.1 (7.8)	1058.6 (9.4)	0.0 (0.0)	389.3 (6.3)	6326.1 (9.2)
Average High	11680.0 (35.8)	4281.3 (27.3)	5869.7 (52.0)	1081.4 (37.1)	2639.3 (43.1)	25551.7 (37.2)
Average Low	2831.7 (8.7)	5759.0 (36.7)	2539.2 (22.5)	1389.0 (47.7)	858.8 (14.0)	13377.7 (19.5)
Low	14278.6 (43.7)	4278.7 (27.3)	1780.6 (15.8)	344.3 (11.8)	2200.7 (36.0)	22881.9 (33.4)
n.a.	212.5 (0.6)	137.7 (0.9)	33.9 (0.3)	100.0 (3.4)	40.0 (0.6)	524.1 (0.7)
Total Planned Investment	32664.9 (100.0) [47.6]	15672.8 (100.0) [22.9]	11282.7 (100.0) [16.4]	2914.7 (100.0) [4.2]	6128.1 (100.0) [8.9]	68662.5 (100.0) [100.0]

Sources: SEADE/SP, , "Investimentos Privados Anunciados no Estado de São Paulo: 1995 a maio de 2000" (Planned Private Investments in the State of São Paulo: 1995 to May 2000), São Paulo State Government, June 2000 and FIRJAN(The State of Rio de Janeiro Federation of Industries) "Decisão Rio"(Rio Decision), three issues dated: 1997/1999; 1999/2001; 2000/2002.

Obs: n.a.= information not available.

The numbers in parentheses and square brackets denote relative share (%).

Turning next to the last row of Table VII, it can be seen that the SPMA and Campinas stand together for a planned investment of more than 48 billion dollars or more than 70% of total private investments in the whole region. The Paraíba Valley/ São Paulo Section comes next with 11.2 billion dollars or 16.4% of total investments. Far behind, the RJMA and the Rio de Janeiro Section of the valley account together for less than 13.5 % of the regional total. One concludes that, from a spatial standpoint, the regional restructuring process has been strongly imbalanced and does not seem to meet the conditions required to improve the existing intra-regional complementarities.

According to the investment figures in Table VII, the most striking structural change have taken place in the São Paulo Section of the Paraíba Valley where 61.4% of the local planned investment

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increase their share in investment financing. In the State of Rio de Janeiro, 47% of the projects refer to New Plant Units, 25% to Expansions, 20% to Modernization and 8% to Expansion and Modernization.

refer to high and average-high activities. As a matter of fact, information recently published by SEADE/SP show that in the year 2000, the last of the period spanned by the São Paulo data, for the first time the Paraíba Valley/São Paulo Section investment value superseded Campinas, taking the second place among the five sub-regions. In that same year, the SPMA investment value sustained a 25% fall, weakening its relative position<sup>36</sup>.

The investment values in the Paraíba Valley, both in its São Paulo and Rio de Janeiro Sections, have been concentrated in large projects located in a small number of counties. In the São Paulo Section, for instance, 30 projects in the top five sectors accounted for 94% of total private investment value in 2000.

The main purpose of this paper has been to inquire into the nature of recent structural changes taking place in the Rio/São Paulo Extended Metropolitan Region (RSPEMR). Actually, it has also tried to evaluate to what extent the regional adjustment process is leading up to global integration.

From a macro-regional standpoint, the empirical evidence points to an overall improvement in the Extended Region global integration. Second, from a micro approach, the available data point out structural deficiencies which may hamper the pace of regional integration. Among the latter deficiencies it is worth mentioning the extremely concentrated, both in size and location, nature of the production adjustment process. More than anything else, such imbalances impair the cost-efficient use of actual and potential intra-regional complementarities.

The lack of a concerted institutional effort to foster<sup>37</sup> local comparative advantages is perhaps the major hindrance to effective global integration. Very often, myopic decision making at the federal, state and municipal levels fails to envisage the region as a system of interdependent units, thus causing further imbalances and delaying the Extended Region competitive integration.

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<sup>36</sup> See SEADE/SP (2001); p. 7.

<sup>37</sup> According to the World Bank, "The newly globalized countries helped their firms to break into industrial markets by improving the complementary infrastructure, skills and institutions that modern production needs"; World Bank (2002), p. 34.

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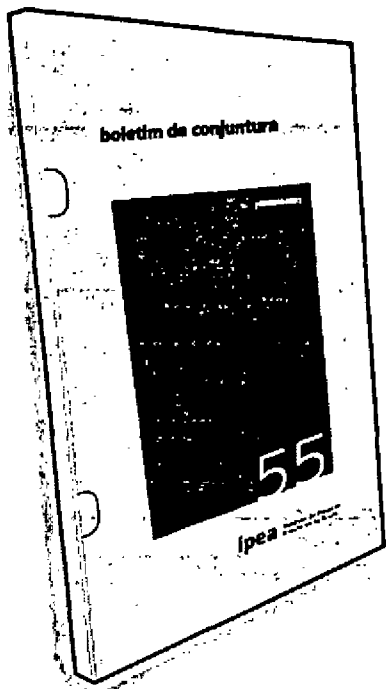
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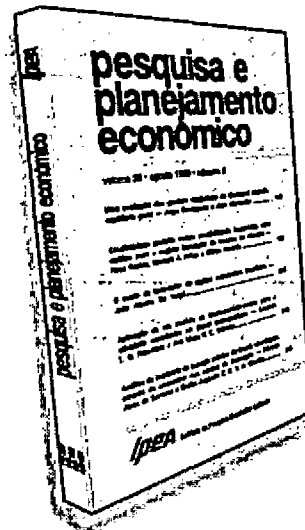
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