



SÃO PAULO METROPOLITAN AREA: SIZE, COMPETITIVENESS AND THE FUTURE

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TD Nereus 10-2005

São Paulo
2005

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1. Introduction

This study analyses strategic aspects involving the present situation and the future of São Paulo Metropolitan Area (SPMA), in Brazil. After a brief description of the area, some information on population size and trends is presented, indicating that different cities within the area play different roles, and their size and growth trends differ substantially. The role of SPMA within the Brazilian urban system is described, as well as its productive basis. Considering the future possibilities of the area within the urban system, some indicators of competitiveness are presented. Their evolution over time is analyzed in order to provide information not only on the present, but also on the future competitiveness of the region in manufacturing, construction, and, mainly, tertiary activities, such as commerce and services. Moving from efficiency and competitiveness indicators, the analysis changes to possible factors that can harm this competitiveness, such as excessive size and congestion, and inequality in income and infrastructure provision. Finally, the study stresses the limitations of the present institutional arrangement to deal with the challenges to be faced in the future.

2. Main characteristics of São Paulo Metropolitan Area

São Paulo Metropolitan Area is the largest urban concentration in South America, and one of the largest in the world. It extends for 8,051 km² and consists of 38

municipalities, in addition to the São Paulo city, the capital of the state of São Paulo and the largest city in Brazil. Table 1 below presents population figures for the largest Brazilian cities in the year 2000, the last available census. It is clear that São Paulo city stands out, with a population almost twice as large as the second largest city, Rio de Janeiro. Over time, the distance between these two cities is increasing. Map 1 below provides information on the geographical location of the largest Brazilian cities and metropolitan areas. It can be seen that they are all located in the coast, except for Brasília, a planned capital city located in the center of the country.

Map 1 also shows the geographical concentration of population in the South/Southeast region of the country. Considering the short distances between São Paulo, Rio de Janeiro, Belo Horizonte and Curitiba, these cities constitute one large agglomeration of population. Moreover, it also constitutes a very large concentration of economic activities and income in the country. The Southeast region, including the states of São Paulo, Rio de Janeiro, Minas Gerais and Espírito Santo, accounted for 58% of national GDP in 2000; the state of São Paulo alone, for 34% of national GDP. SPMA, with less than 0.1% of National territory, accounts for around half of the state's share.

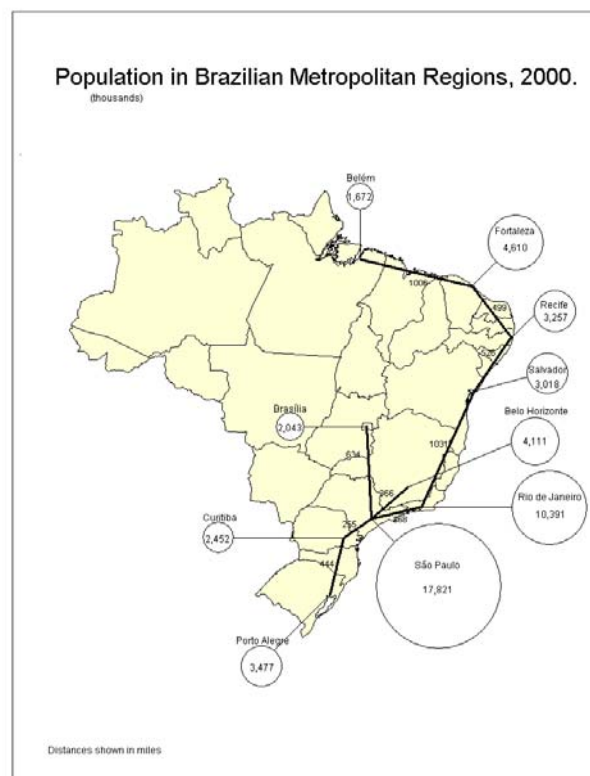
Considering the role of different cities in the national system of cities, São Paulo is classified by IBGE as a national metropolis, a ranking only occupied by Rio de Janeiro city¹. However, the geographical extent of the influence of the former city reaches twelve of the 27 Brazilian states, while the latter reaches only the nearest parts of the states of Minas Gerais and Bahia, and the neighboring state of Espírito Santo. It is interesting to show that a similar study produced by IBGE in the late 70's indicated that Rio de Janeiro and São Paulo cities occupied a similar role in the national system of cities. Recent studies by Lemos e al. (2003) and IBGE/IPEA/UNICAMP (2002) indicate that the situation is changing rapidly towards consolidating São Paulo city, and the Metropolitan Area, as the most important in the Brazilian system of cities. It seems, thus, that the evolution of the Brazilian system of cities is promoting this area as its main urban agglomeration.

¹ IBGE, Regiões de Influência das Cidades 1993

Table 1 - Population in the largest Brazilian Cities, 2000

	Total Population (1,000)	Metropolitan Area Population (1,000)
São Paulo	10,434	17,821
Rio de Janeiro	5,858	10,391
Salvador	2,443	3,018
Belo Horizonte	2,238	4,111
Fortaleza	2,141	4,610
Brasília	2,051	2,051
Curitiba	1,587	2,452
Recife	1,423	3,257
Porto Alegre	1,361	3,477
Belém	1,281	1,672

Source: IBGE, www.ibge.gov.br



3. Population Trends within SPMA

Table 2 shows population figures starting in 1950, covering the second half of the 20th Century; Table A1 provides population information by city, starting in 1970. The state's capital presented 24.1% of the state's population in 1950 and increased its share until 1980, reaching 34% in that year, an impressive gain of 10 percentual points of the state's population in such a short period. After that year its share started declining, reaching 30.5% in 1991, and 28.2% in 2000. The share of SPMA in the state's population grew until 1980, and presented slight decreases since then. This is associated with the growth in the other metropolitan cities, whose shares increased continuously since 1960. That is, in spite of the decline in the São Paulo city share in the state's population, the other metropolitan cities exhibit ever-growing shares.

Table 2 - Populational trends for São Paulo Metropolitan Area

	State of São Paulo	São Paulo Metropolitan Region		São Paulo City		Other Metropolitan Cities	
	Population (1,000)	Population (1,000)	% of State	Population (1,000)	% of State	Population (1,000)	% of State
1950	9.134	-	-	2.198	24.1%		
1960	12.974	5.371	41.4%	3.825	29.5%	1.546	11.9%
1970	17.771	8.139	45.8%	5.924	33.3%	2.215	12.5%
1980	25.040	12.588	50.3%	8.493	33.9%	4.095	16.4%
1991	31.589	15.444	48.9%	9.646	30.5%	5.798	18.4%
2000	37.032	17.878	48.3%	10.434	28.2%	7.444	20.1%

Source: www.emplasa.sp.gov.br

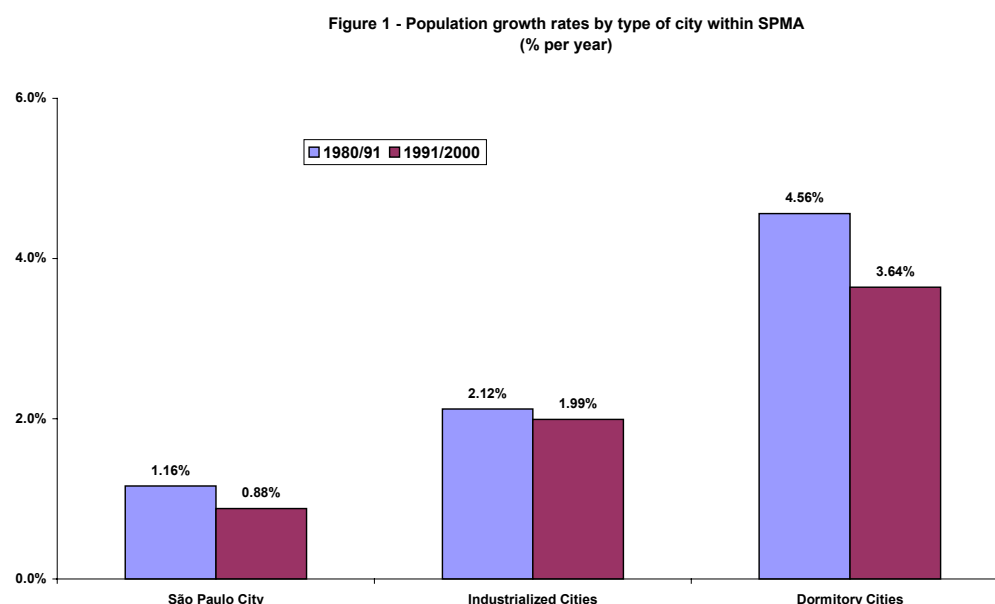
Population growth rates are declining all over Brazil, and this evident in the case of SPMA, as shown in Table 3. In the 50's, the state's population grew at 3.6% per year; in the 90's, this rate dropped to 1.8% per year. The metropolitan area showed larger growth rates in the 60's and 70's, but since 1980 is growing at a lower path than the remaining of the state. The city of São Paulo grew faster than the metropolitan region as a whole until 1970, but since then presented lower growth rates than the metropolitan area and, of course, the state. These growth rates are clearly showing that population growth in São Paulo City reached developed countries standards, and that the city tends to grow very slowly in the future. However, the other cities in the SPMA are still growing rapidly, although not as fast as other non-metropolitan areas within São Paulo State.

This diminution in growth rates, however, may hide an important aspect of the distribution of population, economic activities, and income within SPMA. The city was the first important industrial center in the country, and this industrial center was later spread out to neighboring cities within the metropolitan area. Thus, some of the cities within this area are some of the main industrial centers in Brazil, and present relatively higher income levels. However, the majority of cities within the area play a role of dormitory cities, hosting mainly low income commuting population.

Table 3 - Annual population growth rates, 1950-2000

	State of São Paulo	São Paulo Metropolitan Area	São Paulo City
1950/60	3.6%		5.7%
1960/70	3.2%	4.2%	4.6%
1970/80	3.5%	4.5%	3.7%
1980/91	2.1%	1.9%	1.2%
1991/00	1.8%	1.6%	0.9%

Figure 1 portrays population growth rates for these three cases for the last two census periods. The lower rates for São Paulo City stand out, almost half the ones for the industrialized cities and around one fourth those for the dormitory cities. The later are growing at very high rates, leading to a doubling of population around every 20 years, in spite of a sharp drop from the 80's to the 90's. This grow might be explained by the disagglomeration economies present in the area, mainly embedded in the price of land and, thus, housing costs, leading poor people to choose to leave far away from the main center, even, as it is true in most cases, if working in it.



4. The region's economy and competitiveness: strategic aspects

SPMA and its surroundings constitute the economic center of the Brazilian Economy². It has been mentioned before that the state of São Paulo hosts 34% of national GDP in general; for manufacturing, this share goes over 50%. The metropolitan area accounts for 80% of the revenue coming from the property tax on vehicles in the state, a tax proportional to the value of the fleet; the city of São Paulo alone, for 53%. The capital city holds 55% of total banking deposits in the state; the metropolitan area, 83%. A study on the market potential of different cities in Brazil indicates that SPMA has a market size four times as large as the region with the second market potential, the metropolitan area of Rio de Janeiro. Within the state, the metropolitan area has a market potential 2.5 times larger than the remaining of the state; the city of São Paulo has a market potential 9 times larger than the second city in the state (Azzoni and Capelato, 1996).

The state of São Paulo accounts for 31.1% of national employment in manufacturing, 33.3% in commerce, and 35.1% in services. SPMA is responsible for

² For a description of regional concentration and its evolution over time in Brazil, see Azzoni (2001)

53.0% of the state employment in manufacturing, 63.5% in commerce, and 52% in services. Table 4 presents some indicators of the economic structure of SPMA in the year 2000. Manufacturing accounts for almost one fourth of employment in the region, and 20.3% in São Paulo City. Commerce and Services, as expected, account for over 50% of employment, with the latter being the largest sector in terms of employment

Table 4 – Economic Structure of SPMA, 2000

	Employment		Establishments	
	SPMA	SP City	SPMA	SP City
Agriculture	0.3	0.1	0.7	0.3
Manufacturing	24.9	20.3	16.8	16.1
Commerce	15.1	15.6	37.8	37.0
Services	39.6	38.4	44.5	46.3
Public Administration	20.1	25.6	0.2	0.2

All this information indicate that SPMA is the key urban agglomeration in Brazil, with an economic basis strong enough in the past to provide the competitive advantages that have taken it to the leading role in the Brazilian urban system. Looking ahead into the future, it is important for any strategic reasoning to argue whether or not this competitiveness is to be sustainable, based on the economic conditions of the different areas in the country. For that, some comparative indicators of competitiveness were calculated, in order to indicate the region's conditions to attract new investments in the future.

Based on Azzoni and Ferreira (1996), comparative indicators of labor costs, productivity and profitability were calculated for different portions of the state of São Paulo territory. The state's average for these variables are set equal to unity and the deviations around the average are computed. A value larger than one indicates that the region is above the average for that variable (higher labor costs, higher productivity or profitability),

controlling for the distinct sectoral composition of the regions. A high indicator for labor costs does not necessarily mean low competitiveness for the region, for it could be overcompensated by high productivity in the area. For the same token, low productivity levels could be overcompensated by even lower labor costs in defining the profitability of a region.

Based on the last comprehensive census available for the state of São Paulo, indicators were calculated for manufacturing, commerce, and construction. Table 5 presents the results for the same regions defined before; the remaining non-metropolitan cities in the state were included. In the case of manufacturing, indicators are presented for 1980³ and 1996, providing conditions for the analysis of their evolution within the period. It can be seen that SPMA is positioned above average in both years (in 1980, above national average; in 1996, state average). For 1996, SPMA presented a profitability level 8% higher than the state's average, in spite of presenting labor cost levels 9% above state average. The city of São Paulo, with lower labor costs in manufacturing, also presented profitability levels well above state average (7%), granted by its comparatively high productivity levels. But the industrial cities were the ones most competitive for manufacturing, with profitability levels 10% above average, even after considering 44% above average labor costs. The dormitory cities also presented above state average indicators, although more modest ones⁴. It is clear that the metropolitan area as a whole is more competitive than all other parts within São Paulo state.

Considering the study for 1980, in which the comparison was against national averages, the distances from the average are even higher, with all cities within the metropolitan region presenting profitability levels at least 41% above the national average. More recent estimates at the state level confirm the competitiveness of São Paulo state in comparison with other states in Brazil as far as manufacturing is concerned. Thus, being above average within the state also means being above average at the national level.

A comprehensive survey provides important information on the changes experienced by manufacturing firms in São Paulo state in the early 90's, as analyzed in Klink (2001). The author considers some aspects of the productive restructuring process,

³ Results for 1980 were taken from Azzoni and Ferreira (1998)

⁴ The classification of a city into "industrial" or "dormitory" is not clear-cut. Most dormitory cities also host manufacturing plants.

such as locational strategies, technological innovation and modernization, and outsourcing. As for locational strategies, no evidence was found that manufacturing firms in the industrial cities of SPMA (including São Paulo City) were searching for an innovative milieu or a Marshallian environment. As a matter of fact, the most cited factors referred to cost reductions, as in traditional Weberian location theory. On the other hand, firms in the area presented higher proportions of employees allocated to R&D activities than firms elsewhere in the state. This is mainly explained by the location of large automobile plants in the region, as well as large plants belonging to multinational companies, as in chemicals. As a whole, however, Klink understands that the industrial system in the industrial cities of SPMA presents low endogenous potential for technological innovation and modernization, since no importance was found for the presence of universities, research centers etc. However, manufacturing in Less Developed Countries such as Brazil is constituted mainly of “fordist” plants, for which innovation consists more of adopting, or even copying, technology and ideas. It was clear in the results that SPMA plants were more aggressive in coping with the challenge of a rapidly changing environment than plants elsewhere in the state.

Moving on to commerce, the indicators are less conclusive. The metropolitan region as a whole ended up presenting profitability 2% above state average, with labor cost levels 15% above average. Labor costs are clearly a problem in this sector for the city of São Paulo, 32% above average, leading to a below average profitability. The other parts of the metropolitan area present comparatively low labor costs, and only the dormitory cities present above average profitability⁵. Again, the remaining non-metropolitan cities are all below average in terms of profitability, indicating that the metropolitan area as a whole is still competitive, in spite of different situations among its different cities. Finally, in the labor-intensive sector of construction, the metropolitan area is clearly non competitive, mainly due to its high labor cost levels. As far as productivity, the region is on average, with, combined with high labor costs, provides below average profitability.

⁵ The loose way of classifying cities into groups might explain part of this result.

Table 5 - Competitiveness indicators

	Labor Cost	Labor Productivity	Profitability
Manufacturing, 1996			
Metropolitan Region	1.09	1.08	1.08
São Paulo City	1.00	1.05	1.07
Industrial Cities	1.44	1.20	1.10
Dormitory Cities	1.05	1.06	1.06
Other non-metropolitan cities	0.89	0.90	0.90
State	1.00	1.00	1.00
Manufacturing, 1980 (reference: national average = 1,0)			
Metropolitan Region			
Industrial Cities	1.30	1.40	1.42
Dormitory Cities	1.21	1.37	1.41
Construction, 1996			
Metropolitan Region	1.06	1.00	0.96
São Paulo City	1.08	1.00	0.93
Interior	0.84	0.99	1.11
State	1.00	1.00	1.00
Commerce, 1996			
Região Metropolitana	1.15	1.02	1.02
São Paulo City	1.32	0.99	0.98
Industrial Cities	0.70	0.93	0.93
Dormitory Cities	0.64	1.27	1.27
Other non-metropolitan cities	0.85	0.97	0.98
State	1.00	1.00	1.00

Source: Calculated by the author from raw data from SEADE, PAEP, 1999.

This set of quantitative indicators describes quite clearly the economic and competitive aspects of SPMA. To broaden the description of economic competitiveness in the area, some qualitative aspects should also be emphasized. Surveys applied in 1987 and 1997 in SPMA⁶ indicate that within the tertiary sector, “services” increased its share from 50.9% in 1987, to 55,6% in 1997, following a trend present in the country as a whole. Nowadays, over 60% of national GDP is concentrated in the tertiary sector and this proportion grows with the size of the state’s economy. In spite of the low competitiveness in construction, the surveys indicate that the share of this sector within the area grew from 2.3% to 5.7% in the period. These figures indicate the trend of the region to become a

⁶ Companhia do Metropolitano de São Paulo (1997)

tertiary metropolis, and the growth of construction, a “localized” sector (in contrast to footloose), follows the increasing demand for housing associated to non-manufacturing activities. That is, even if still accounting for a significant share of national manufacturing, SPMA is clearly moving towards becoming a tertiary activity center, in the lines of Central Place Theory. The financial sector is a good example of this competitiveness, for almost all bank headquarters are now located within SPMA, moving in from different states, through a process of concentration of property or even simple geographical movement. The same holds for national associations of sectoral producers, that used to locate in Rio de Janeiro and are recently moving to Brasília or São Paulo (São Paulo City, in these cases). In sophisticated health services, SPMA is becoming the Mecca of the country, and even of the other neighboring countries in South America.

These indicators clearly point to a competitive situation for private economic activities in the metropolitan area as a whole. Therefore, in spite of high labor costs, business can still be relatively more profitable in the area than elsewhere in the country. This suggests that future investment decisions can still favor this area in the future, granting the region a good strategic position in the regional competition for new investments in Brazil.

5. Excessive Agglomeration and Disamenities: negative strategic factors

As the modern urban theory emphasizes, size matters. All models stressing agglomerative factors suggest that a certain degree of agglomeration is needed for some activities to develop in a city. This is true not only manufacturing, but also for tertiary activities. However, excessive agglomeration can be a very important negative factor. Therefore, in this section some negative aspects of SPMA will be explored, such as traffic, crime, and cost of living.

As for time spent in traffic, Table 6 presents information based on an origin/destination survey developed in 1997, by the Companhia do Metropolitano (subway company). On average, people spent 33 minutes per day for one-way movements within the area. That is, an average person spent more than one hour per day with dislocations to deal with day-to-day activities, such as shopping, working, etc. For those walking, the average is

30 minutes per day, but was clearly higher for poor people. The same holds for collective means of transportation, such as buses, trains, or subways: an average person spent 118 minutes per day with transportation, and the time was higher for the lower income brackets. People driving cars spent 56 minutes per day on average, with no clear differentiation across income classes.

Table 6 - Time spent in traffic (one way, in minutes)

Monthly Income (R\$ of 1997)	Mode			All Modes
	On foot	Bus or Train	Car	
< 250	18	62	27	32
250 to 500	17	63	28	35
500 to 1,000	16	63	27	36
1,000 to 1,800	15	60	28	36
1,800 to 3,800	14	55	26	32
> 3,800	13	49	27	29
All Income Classes	15	59	28	33

Source: Companhia do Metropolitano de SP, Pesquisa Origem e Destino, 1997

Another piece of information on this aspect is provided by Table 7, in which the average income of people spending different time with movements is displayed. The numbers come from a different survey, PNAD (Pesquisa Nacional por Amostragem de Domicílios). On average, people subject to spend more than one hour for one-way dislocations earned as less as 14% in comparison with people having to spend up to 30 minutes. Considering only household heads, the difference was much larger, 41%. This configures the classical Alonso-type model, in which people substitute transport costs for housing costs. Given the amount of income a family can earn, more time spend with movements is substituted for housing costs. This helps explaining the faster population growth of dormitory cities within SPMA.

Traffic only got worse since 1997, for very few investments in the transportation network were implemented. This indicates that size is a possible constraint for further growth, unless massive investments are made to overcome the present difficulties. The road

system is congested and needs major investments to eliminate bottlenecks; the subway system is limited in lines and stations, and should be doubled or tripled to account for traffic demand. The Brazilian roadway system is another negative factor, for all major highways converge to São Paulo City. At present, the majority of heavy cargo trucks traveling North-South have to go right through the city; the same with trucks from all over the country heading to the port of Santos, the largest in the country. A highway belt is under construction but it is not due in less than 10 years from now, given environmental restrictions and, mainly, lack of financial resources for construction.

Table 7 – Time spent in traffic, by income class, 1997

Daily time spent with transportation (one way)	Monthly Income	
	All residents	Household Heads
Up to 30 minutes	813,50	1119,40
30 to 60 minutes	808,10	953,00
Over 60 minutes	702,50	656,00

Source: Kuzuhara, 1999

Another aspect of disamenities in SPMA is the high cost of living in the area. As Table 8 shows, living in SPMA in 2002 costed 13% above the average cost of living for the 11 official metropolitan areas in Brazil (including SPMA). For housing alone, it is over 21% higher, and for education (private schools tuition, books, etc.), it is over 42% above average. It should be stressed that this comparison only involves metropolitan areas, whose sizes, as shown before in this chapter, are very large. Thus, the distance in cost of living between SPMA and non-metropolitan cities in Brazil is even higher than the numbers shown in Table 7. Another point to stress is the relative stability of the situation. Even considering oscillations between different years, it seems that the cost of living differential representing excessive agglomeration in SPMA is quite stable. The only city comparable to SPMA in terms of cost of living is Brasília, the Brazilian capital city, with a high proportion of high-salary public employees, and a highly regulated land market.

Figure 2 - Cost of living in Brazilian metropolitan areas, 2002
(as a percentage of the 11 metropolitan areas average)

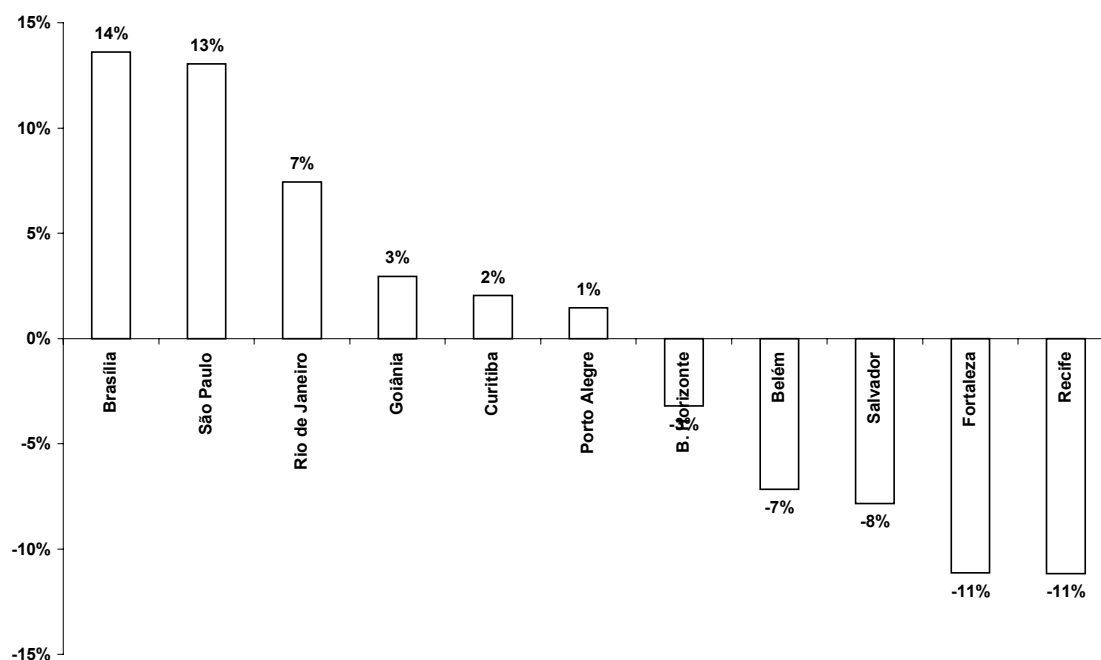


Table 8 – Comparative Cost of living in SPMA, by type of service

	General Cost of Living	Housing	Education
1996	1.142	1.213	1.556
1997	1.158	1.256	1.538
1998	1.152	1.231	1.631
1999	1.150	1.240	1.537
2000	1.142	1.234	1.449
2001	1.141	1.218	1.429
2002	1.130	1.216	1.421

Source: Azzoni et All, 2003

6. Inequality as a restriction for future growth

It has been shown in the previous section that size-related disamenities can constitute important restrictions for the future competitiveness of SPMA. In this section another aspect will be introduced, related to the high levels of inequality present within the area.

This analysis starts with the standard and well-known Human Development Index (HDI), as presented by the United Nations Development Program. HDI is the average of indicators of income, health and education⁷ and thus covers three basic aspects of living conditions. As Table 9 indicates, all portions of SPMA substantially improved on their situations over time, but the dormitory cities are always below the other two cases⁸. The bottom part of the table compares the group's situation in each year to the metropolitan average in that same year (also presented in Figure 3). It can be seen that SP City is always above average, and even more so in the last year; the industrial cities are better off than the other cases in the first three years, but drop below the average line in the year 2000. As for the dormitory cities, their situation is always below average, and even worsens in the last year.

These results indicate an important diversification of situations within SPMA. Some cities perform the function of dormitory cities and are growing fast in population, although their per capita income levels are far below the levels of the other cases. Industrial cities are sort of extensions of São Paulo City and present similar economic structures, and therefore experience similar living conditions. The central city holds some activities that are not present in other areas, and concentrate high-income population, therefore showing better indicators. When analyzing the components of HDI, it is clear that the income component is the one in which the distance among the three groups of cities is the largest, although rich cities are also better off in terms of health and education.

⁷ For an explanation on HDI, see United Nations Development Program, Human Development Reports, <http://www.undp.org/hdr2003/>

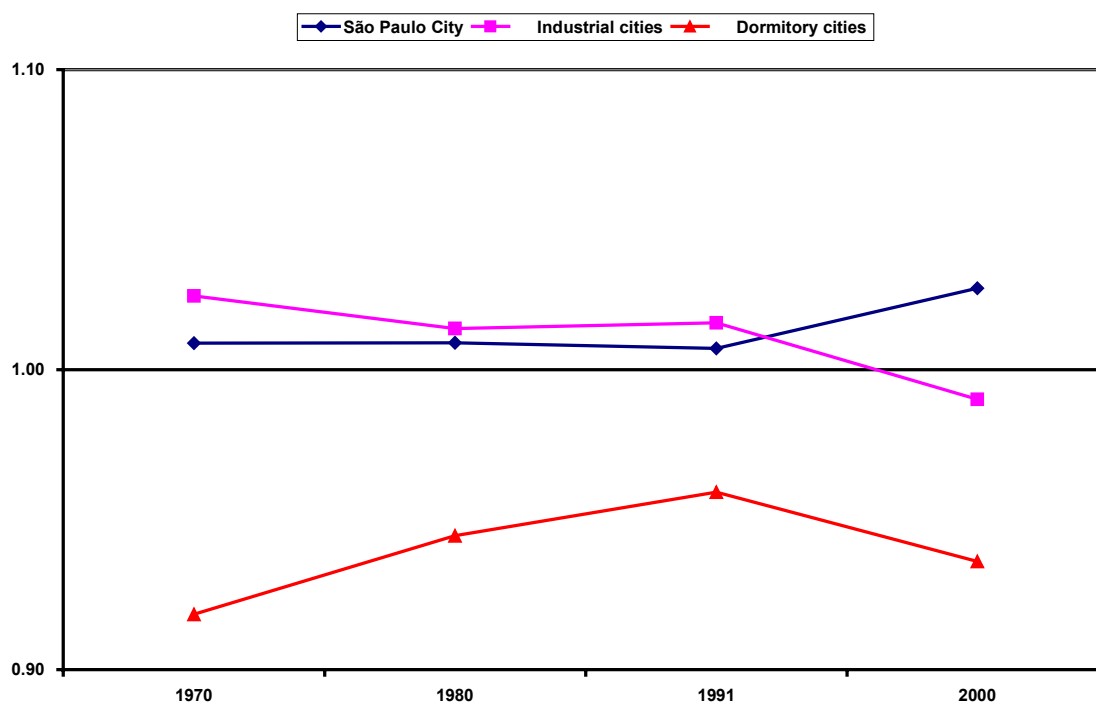
⁸ The HDI used here were produced by PNUD, the Brazilian branch of the United Nations Development Program, and are available at <http://www.pnud.org.br/>, Atlas do Desenvolvimento Humano do Brasil.

Table 9 - Human Development Index for SPMA

	1970	1980	1991	2000
Absolute Values of HDI (*)				
São Paulo City	0.61	0.70	0.75	0.85
Industrial cities	0.62	0.70	0.75	0.82
Dormitory cities	0.55	0.65	0.71	0.77
São Paulo Metropolitan Area	0.60	0.69	0.74	0.83
Relative to the metropolitan average				
São Paulo City	1.01	1.01	1.01	1.03
Industrial cities	1.02	1.01	1.02	0.99
Dormitory cities	0.92	0.94	0.96	0.94
São Paulo Metropolitan Area	1.00	1.00	1.00	1.00

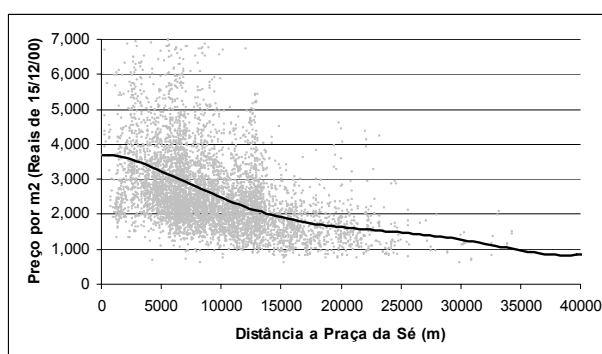
(*) HDI varies between 0 and 1

Figure 3 - HDI within SP Metro Region



Other aspects of inequality were presented in the analysis of time spent in transit. It is clear that poor people are substituting leisure time, and transportation costs, for housing costs. As expected in any economic urban model, land prices decline with distance to the city center, as shown in Figure 4 below. This information complements the analysis of time spent in traffic. In order to afford a minimum plot size, poor people have to move to distant locations, thus spending more time in transportation. Although this does not reduce their purchasing power for goods in general, it clearly deters their quality of life. And the sprawl of inhabitants in a dispersed region introduces important cost considerations for the provision of infrastructure and urban services, as will be dealt with in the last section.

Figure 4 – Land prices and distance to CDB for SPMA

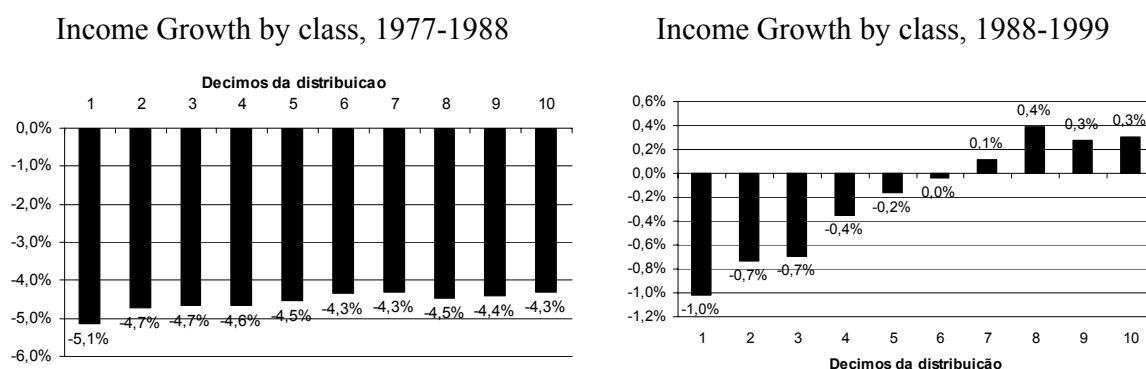


Source: Embraesp, www.embraesp.com.br/

Brazil is a country with a very high degree of personal income inequality, and SPMA is not an exception within the country, although inequality levels in the area are not as high as in other metropolitan areas in the country. However, inequality is growing faster in SPMA than in other metropolitan areas lately. In Figure 5 below some information is presented for the 80's and 90's. Between 1977 and 1988, all income brackets experienced negative income growth rates, but the four lower deciles presented even lower rates. This period is known in Brazil as the lost decade, for all the problems with high inflation, stabilization plans and their failures, etc. For the second period, 1988-1999, only the four higher deciles had positive income growth rates, with the poorer groups experiencing further decreases in their income.

The scenario is one of decreasing income for the average citizen, provoked by macroeconomic conditions, and of increasing income inequality, over a highly unequal basis. Considering inequality and low average income levels, quality of life is damaged for all population groups. Poor people tend to spend more time in transportation and rich people have to spend more income with security, for inequality has an implication in crime rates. This imposes limitations for the financing of the provision of the necessary public services, both for poor and rich people, a subject to be dealt with later on.

Figure 5 – Income growth by class in SPMA, 1977-1999

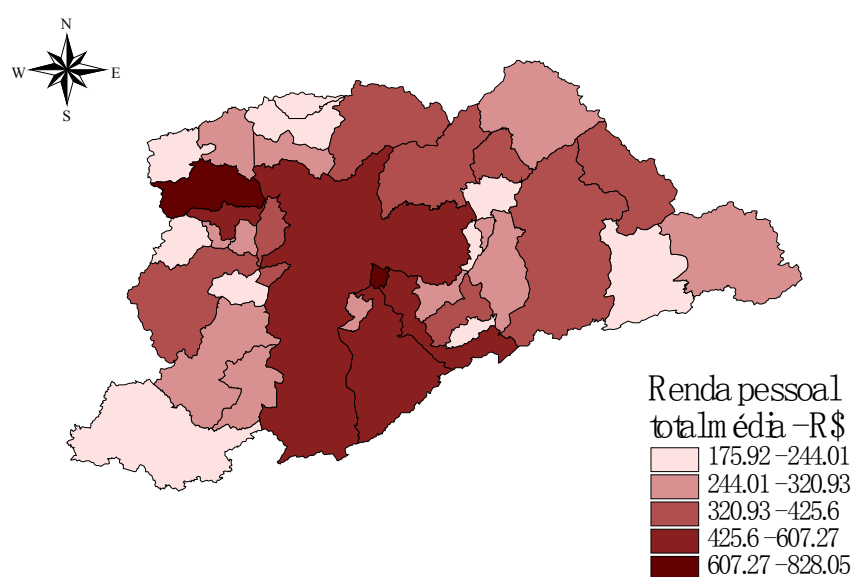


Source: IBGE, PNAD

The above analysis considers inter-personal income inequality. But for policy implications, spatial inequality is as important a subject. Maps 2 to 6 below present five aspects of spatial inequality across cities within SPMA: income, wealth (possession of TV sets, refrigerators, radio sets, etc.), infrastructure provision (sewage, electricity, water), educational level (number of schooling years), and health (infant mortality). It can be seen that income and wealth indicators are highly correlated in space, as expected. It can also be seen that they are also correlated to the infrastructure level indicator, meaning that rich people have access to better urban services. That is, rich people can either afford to buy well-served land, and thus benefit from the services, or they have political power to drive public authorities to service their previously purchased land. Anyway, poor people would be segregated from access to good urban services.

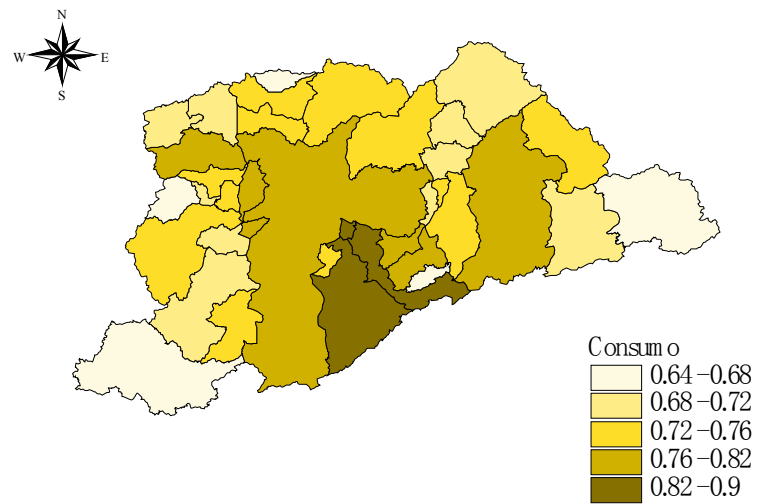
The last two maps present indicators for education and health. A negative spatial correlation between these two indicators and the indicators of income and wealth is evident. That is, income inequality among persons is reflected in basic services inequality among cities. This completes the inequality and segregation picture, with poor people having to live far away from the jobs and urban life, and to face lower quality services in infrastructure, health, and education. This framework presents challenges for any future competitiveness of SPMA, for the amount of public investments in these areas are huge, given the spread of people over a large territory, and the lower level present in these peripheral areas.

Map 2 – Average personal income levels across cities of SPMA, 2000



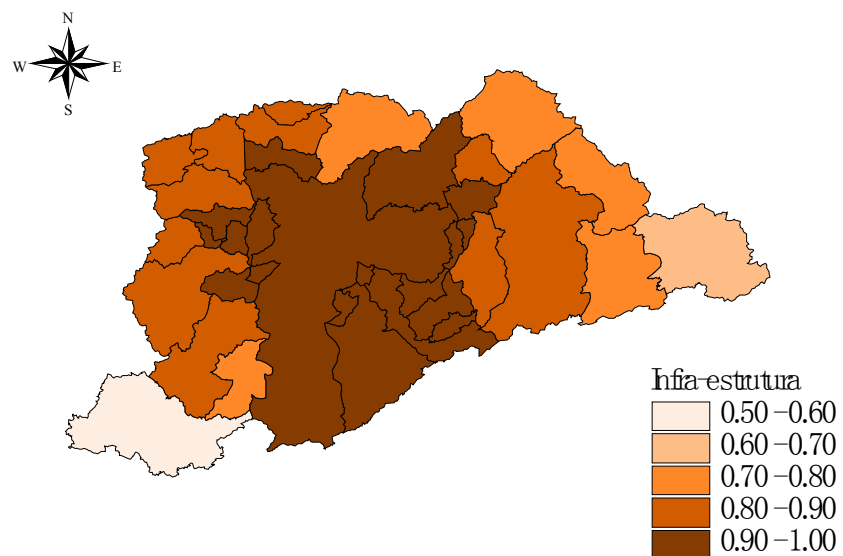
Source: IBGE, Population Census, 2000

Map 3 – Household wealth across cities of SPMA, 2000



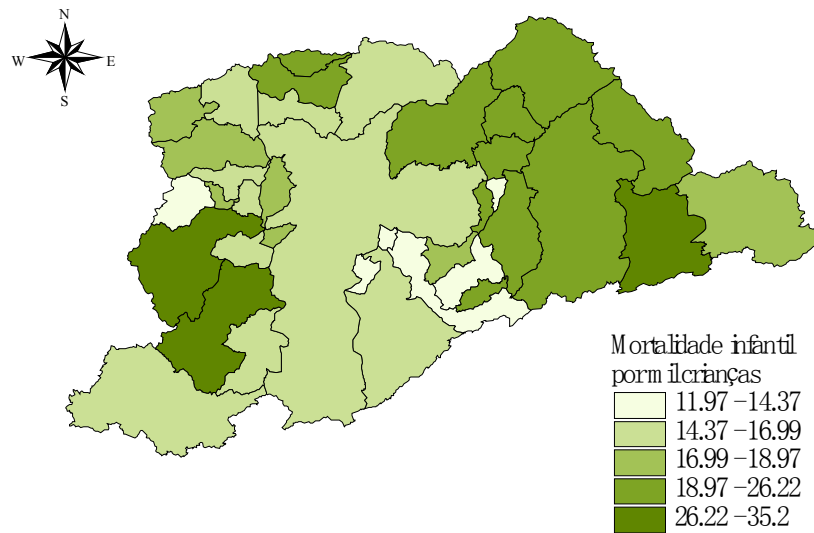
Source: IBGE, Population Census, 2000

Map 4 – Infrastructure level indicator across cities of SPMA, 2000



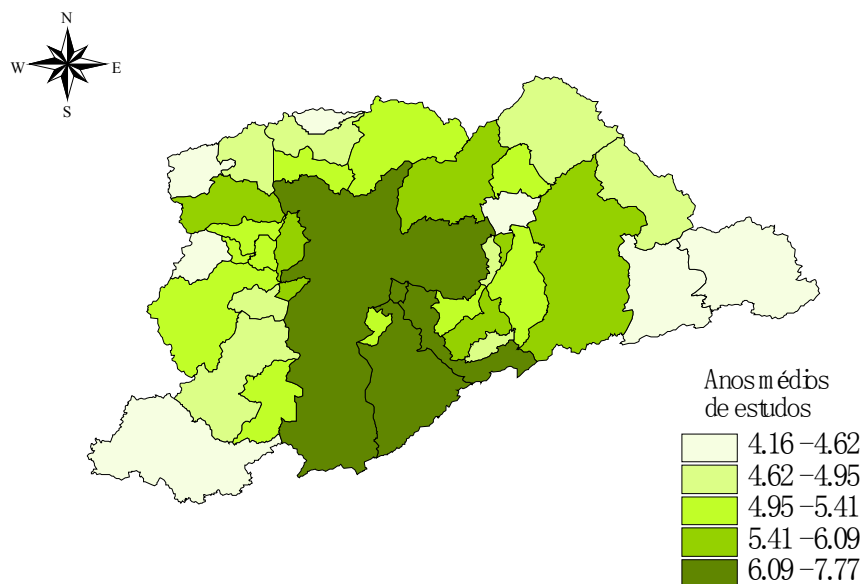
Source: IBGE, Population Census, 2000

Map 5 – Infant mortality across cities of SPMA, 2000



Source: IBGE, Population Census, 2000

Map 6 – Years of schooling across cities of SPMA, 2000



Source: IBGE, Population Census, 2000

7. Strategic aspects for future competitiveness

The above analysis portrayed SPMA as the center of the Brazilian economy, and the decision center of Brazilian business of all sectors. It has also shown that excessive size and inequality, both personal and spatial, are important aspects to be considered in any strategic planning of the region. In this section, some general considerations will be made on this issue.

Starting with competitiveness for business, all indicators presented suggest that SPMA is still competitive in the present, being able to provide profitable conditions to business of manufacturing, construction, and tertiary sectors. However, it is clear that competitiveness is presently smaller than it used to be in the past for manufacturing. For the most dynamic tertiary activities, however, the region is still competitive and probably will increase this advantage in the near future.

One important challenge comes from the aspects of excessive size and inequality. As for size, congestion levels are clearly excessive, leading to efficiency losses for citizens, as hours spent in traffic and cost of living levels clearly indicate. For business, this high cost of living end-up transformed in higher labor costs, for citizens cannot reduce their quality of life indefinitely. And time lost is also a negative factor for business, as are all size-related cost items, such as land, taxes, etc. Pollution levels for air and water are beyond any acceptable standards, posing the necessity for huge investments. These are to be paid both by the public and the private sector.

Another considerable negative strategic factor is related to inequality, both personal and spatial. Interpersonal income inequality provides negative conditions for market expansion, but also creates some pre-conditions for crime and social unrest, thus affecting all brackets of population, and business as well. Spatial inequality brings the question of having to extend public services to large areas, thus reducing efficiency in their provision, and creating the need to huge investments to attend minimum standards. All these aspects lead to the need of public investments, how to allocate them across sectors and parts of the metropolitan area, and, most importantly, how to finance their implementation.

Two points must be made in this respect. First of all, the present level of public services is way below the minimum acceptable. This indicates that the amount of

investment necessary to obtain that minimum level is far larger than the observed rate of expansion of public investments permit to expect. It is not a problem per se, for increased investments in infrastructure, health, education, police, etc. could overcome the present difficulties. The second point is related to the institutional difficulty in dealing with different actors and different scales of government: federal, state, metropolitan, and local (city).

Considering private income, it is clear that individual agents, be them persons or firms, can get benefits larger than the costs they have to pay to operate in the area. This is the typical textbook case, in which net private benefits exceed net social benefits. Therefore, firms continue choosing SPMA for their business, as well as households keep locating there. Taking wage income alone, the gross difference between SPMA and Recife and Fortaleza, the two poorest metropolitan areas in Brazil, is around 60%: an average citizen in those two cities earns as much as 60% less than a counterpart in SPMA. Part of this difference is due to individual and job characteristics, such as education, experience, sector of work, etc. Controlling for that, the difference comes down to around 45%. It is still a large difference, which can be explained by cost of living differences, as explained before in this paper. However, even after discounting for these differences, the wage income lag is over 30% between the areas. It is clear, thus, that for a private household head, even after paying for all increased costs in SPMA, the net income will be larger than income earned in the city of origin. And this difference holds for all other large metropolitan areas in Brazil, except for Brasília, being stable over the 90's⁹.

For firms, profitability indexes shown in a previous section also point to that same conclusion: firms can get better off establishing in SPMA. Of course, not all diseconomies of agglomeration are embedded in cost of living and other disamenities. Firms also incur extra expenditure with private security, additional allowance for employees to cover transportation costs, etc. However, those negative aspects do not seem to overcome private benefits, apparently providing a net result for firms. This is especially true in the case of taxes, for only a minor part of taxes paid by business is locally collected, with the bulk received by state and federal governments.

⁹ See Azzoni and Servo, 2001

7.1. Government as part of the problem

In summary, in order to allow government to provide the necessary levels of public services, individual agents would have to experiment higher tax levels in the area than they are experimenting presently. However, given the deteriorated situation, the necessary increase in public sector revenue, that is, in the tax burden of citizens and business, is immense. Given the present distribution of tax revenues across government levels, and the population income levels, the latitude for public authority to deal with the problem is limited.

First of all, interventions affecting the region can be decided at all levels of government. The federal government can lend money to the state or the cities within SPMA for investments, but it can also invest in some federal-controlled services, such as some interstate highways of interest to the city. The state government can intervene in transportation in some cities, as well as define investments in the highway system, or the subway, in São Paulo City. The city administrations have their own budgets, and they can also deal with the matters their own way. There is also a metropolitan authority¹⁰, created to coordinate all these actions. However, instead of bringing in positive aspects, these varied sources of possible interventions usually lead to paralysis.

Power is distributed in a way that each municipality is autonomous within its own borders. They have a mayor and a municipal congress, and all laws and decisions concerning the city's investments must be approved by these instances. The main source of revenue at this level is property tax, which in Brazil is very low, proportionally, in comparison to levels observed in developed countries. Cities also get part of income and value added taxes, based on population, production, and some social and/or environmental factors. In the case of SPMA, right above city municipalities there is a metropolitan authority, constituted of all 38 local administrations in the metropolitan area, as well as the state government. Although this authority was installed in the early 70's, it has performed poorly in general, and was practically inert most of the times. The difficulty is the coordination of so many different players with conflictive interests. Given the limited amount of resources, if an investment is approved for one city, all the others will suffer in

¹⁰ See Emplasa, www.emplasa.sp.gov.br

their interests. Thus, the meetings are either inconclusive or they just do not happen at all. Individual administrations perceive as more effective to negotiate with state or federal government individually, instead of having their projects discussed jointly with other interventions in the area.

One good example of this is the 175 km road beltway under construction around São Paulo City. This investment will clearly benefit the city, but it will also have positive aspects to all citizens within SPMA, and, as a matter of fact, for all Brazilians. This investment is supposed to overcome the traffic bottleneck that affects not only citizens of SPMA, but also all trucks that presently have to spend hours to cross São Paulo city in order to reach their destinations. From the federal government point of view, the gains will come from increased efficiency in production and reductions in transportation costs, which will increase competitiveness of Brazilian exports, as well as reduce the cost of goods for consumers. For the state government, gains will come from reduced congestion, but increased competitiveness is also of interest. But probably the largest benefits will accrue to the local administration, for people living in São Paulo city will experience reduced time in traffic, improved health conditions due to air pollution reduction, etc. An agreement was made between the state government, the city government, and the federal government to share the construction costs of such an important transportation corridor. It turned out that the city government stepped aside at the final moment, becoming a free rider in the process. As a result, only one fourth of the work was done, involving the cheapest and easiest parts, not the most needed ones.

If the difficulty of getting together different spheres of administration is a fact, it is also complicated to involve the average citizen and the firms in public solutions. This is part of the Brazilian, and maybe Latin, tradition of considering government as exogenous to society, something independent and responsible to provide the means for the improvement of private life. Over time, due to repeated bad and corrupt administrations, and also due to difficulties in collecting the necessary amount of taxes, private sector resistance to taxation is increasing in Brazil. That would not be a big problem if the average citizen cared about public interests. To complicate the situation, Brazilians, on average, are not experienced to deal with public concerns in a sharable fashion, tending to behave egoistically.

This was clear in two situations involving public difficulties recently. One is the shortage of energy experienced in 2001, due to three dry years in a row, and the same lack of the necessary investments over time. Given the evident danger, the public authority, now at the federal level, had to take drastic measures to reduce consumption. Although most people would understand and cooperate, free-rider type behavior was quite common. And repulse to government measures was quite common. The second situation involves air pollution within SPMA. Given the high levels of air pollution, the state government passed a law restricting the circulation of trucks and automobiles in all cities in the metropolitan region. Based on the plate number, every vehicle was forbidden to circulate one day in the week. Later, this was transformed into peak-hour restrictions only, and just for the city of São Paulo. Anyway, the reaction against these measures was very high, with the press in general criticizing government for these interferences in the freedom of citizens.

Thus, the situation is one of high demand for public investments and lack of institutional and financial resources to provide them. Would privatization do it? As considered in the case of Rodovia Castelo Branco, it does not seem to be a viable solution. This road connects the city of São Paulo to cities to the west, and was built in the early 70's as the most modern road in Brazil at the time. Due to increased traffic flow, also driven by the quality of the road, it became highly congested, leading to traffic jams very frequent and massive. The state government came to a solution through privatization, and a new modern extension was made. However, private resistance to use this turnpike road is leading the company to experience lower than expected profits, with very few vehicles using the toll road. Besides that, as a political factor important for future endeavors in this field, users organized many demonstrations, with significant political costs for state authorities.

Interestingly enough, all the cases mentioned above involve citizens with high levels of income, possessing cars, etc. That is, if extra resources are to be collected by the public authority, these will necessarily have to come from the segment of population with highest income levels. The city of São Paulo has increased the average property tax rates, introduced new levies on garbage collection and public illumination, etc. Not without a political cost, that will probably be felt in the next election.

7.2. Civil society and public engagement: the possible way

Of course, there are some alternatives appearing here and there, involving government, the civil society, and NGOs. An association of such institutions was created to renew the old downtown part of São Paulo city. Although involving some banks and private companies, as well as engaged people, it really works as a means of carrying public resources to the area, in an organized manner. Another good example is the agreement between local administrations and the private sector in the industrialized cities of SPMA, the organization Consórcio Grande ABC. This institution is trying to collectively discuss the common problems in the area, mainly the threats of a possible decay in manufacturing in the region. It has produced many studies, workshops, surveys, etc. and has been able to have a better understanding of the critical elements in the shaping of the future competitiveness of their region. However, it must be emphasized that the municipalities involved detain the largest budgets among all cities in Brazil. Therefore, it is not difficult for them to engage in such a sort of joint operation. It is good news, anyway.

The challenge rests on the institutional arena. Success will come if the private sector is appropriately involved as part of the solution for the area's problems. This can come through the traditional political system, with tax increases at all levels, or through a participatory arrangement, in which high income people will get involved and increase their contributions to the solution. Both alternatives have good aspects and severe limitations. Increasing government size seems to be out of questions nowadays, but it would probably be the fastest and easiest way of getting things done. Increasing public awareness would take more time and would probably lead to more modest results, but seems to be the only way possible in the present cultural, institutional and political situation. Meanwhile, the region has to leave with its contrasts and inefficiencies.

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