

SPATIAL SEGREGATION IN MEDIUM CITIES DURING THE 1990s:  
THE CASE OF RIBEIRÃO PRETO, SP – BRAZIL

BY

LUCIANA MOURO VARANDA MATTOS

THESIS

Submitted in partial fulfillment of the requirements  
for the degree of Master of Urban Planning in Urban Planning  
in the Graduate College of the  
University of Illinois at Urbana–Champaign, 2011

Urbana, Illinois

Master's Committee:

Associate Professor Faranak Miraftab, Chair, Director of Research  
Associate Professor Brian Deal  
Associate Professor Mary M. Edwards

## Abstract

Many are the transformations and changes in the urbanization processes in Brazil since the late 1980s when the democratic regime was established after twenty years of a dictatorship. In Brazil, the 1990s are characterized by the adoption of neoliberal policies and the country's deep involvement in a globalized economy (globalization) through the opening of the national economy. The consequences of those processes in the intra-urban spatial pattern of cities are the topic of many studies in Brazil and worldwide. Specifically, these studies seek to identify the influence of globalization in the intra-urban morphology of cities attempting to understand whether the 20<sup>th</sup> Century globalization has brought about a new spatial order within cities as to socioeconomic classes.

Although extensive research exists on processes of urban growth and spatial segregation at the metropolitan level, little has been studied in this respect for medium cities.

To address this shortcoming my thesis focuses on a medium size city, the city of Ribeirão Preto, and compares its socio-spatial pattern to that of the metropolitan region of São Paulo. I study the pattern of spatial segregation in relation to the socioeconomic inequalities in the two urban contexts and analyze how spatial inequality has been shaped by their respective urban milieus.

I first analyze census data and other socioeconomic indicators by city size to identify the national forces affecting the urban form of medium cities during the 1990s compared to cities of different sizes. Next I spatially analyze census data at the census tract level to assess how the socioeconomic inequality of the 1990s has been translated into the spatial order of both areas (Ribeirão Preto and São Paulo). To do that I use methods of cluster analysis in a geographic information system environment followed by a spatial regression to search for the variables statistically affecting spatial segregation in Ribeirão Preto.

I argue that, first there are significant differences between how the metropolitan region of Sao Paulo and Ribeirão Preto developed under the influence of neoliberalism and globalization. There is a tendency of more fragmentation in the SPMR and more concentration in Ribeirão Preto. Second, overall, there is little evidence to argue that there is a new spatial order in the intra-urban pattern structure of Ribeirão Preto. I find that segregation by the end of the 20th Century in Ribeirão Preto is very similar to patterns established by the end of the 19th Century: the poor north and the rich south. However, there are signs of changes represented by the proliferation of gated communities which brings rich and poor closer in proximity but still in a very segregated manner.

*To my husband Castor,*

*and my children Luiza and Francisco*

## ACKNOWLEDGEMENTS

This thesis was only possible due the support of many. Here is my sincere gratitude to all the persons who inspired and helped me in this academic endeavor.

I wish to express my gratitude and thanks to my thesis' adviser Prof. Faranak Miraftab, for being a major source of academic and personal inspiration on this very long journey, and for having the most welcoming office. Thanks for always showing me a meaningful direction in my research and for not placing a table between us.

I acknowledge my deep respect to my parents for making me a curious questioner of the Brazilian reality – you are the main reason for me choosing the field of urban planning and doing research.

I thank the University of Illinois for providing me the excellent academic environment and the structure needed to pursue my studies as a planner. My special word of thanks is due the staff of the Urban and Regional Planning Department, especially Jane Terry who have always been there when I had no idea what to do with the many forms. I am extremely indebted to all the faculty members in the Department of Urban and Regional Planning who have taught me not only to love cities and their many problems but to believe we can make a difference.

My special word of thanks to the committee members Prof. Mary Edwards and Prof. Brian Deal for, since my undergraduate times, being so patient – you have helped me more than you can image during my stay at UIUC.

Thanks to all those who have helped me with data acquisition: Mauro Freitas (architect in Ribeirao Preto), Ana Luiza (CODERP), Pedro J. Ferreira (CODERP), Ana Lucia (Geospacial), Carolina Zoghbi e Rafael Terra, Maria Paula e Marisa (Ribeirão Preto Planning Department).

I must mention the help of my older brother and his family who had to watch my house back in my country, and for sending me books when I need them. Thanks to Carol, my dearest friend for more than twenty years now, who almost every day skyped me with a word of encouragement.

My special word of thanks to my children Luiza and Francisco for being so adaptable in a new country and for making me smile every single day of my life.

Finally, thanks to my husband for taking care of the kids, our home and above all for believing and making my return possible – thanks for your support and patience Gordo, this work is for you.

## List of Contents

Chapter 1 – INTRODUCTION.....	1
1.1    Problem Statement .....	2
1.2    Research Methods.....	7
1.3    Research Scope and the Case Study.....	8
1.4    Thesis structure .....	13
Chapter 2 – LITERATURE REVIEW .....	14
2.1    Overview .....	15
2.2    The Globalization Era: Neoliberalism and Increased Socioeconomic Inequality During the 1990s .....	16
2.3    Medium Cities and Globalization in Brazil: The Alternative to Ill–Metropolises? .....	21
2.4    The Urban Spatial Outcomes of a Globalized Economy .....	25
2.5    The specificities of Brazilian Cities: Urban Poverty, Inequality and Segregation .....	32
2.6    Medium Cities and Urban Development: Why are they Important? .....	36
2.7    Final Remarks .....	43
CHAPTER 3 – THE ANALYSIS .....	45
3.1    São Paulo Medium Cities: Socioeconomic Analysis .....	46
3.2    Urban Inequality and Segregation – A Comparative Spatial Perspective .....	59
CHAPTER 4 – CONCLUSION.....	79
4.1    The roots of Spatial Segregation in Ribeirão Preto .....	80
4.2    Spatial segregation and Planning .....	83
Bibliography .....	87
APPENDIX.....	94

## Chapter 1 – INTRODUCTION

## 1.1 Problem Statement

This research investigates the relationship between socioeconomic inequality and spatial segregation of income groups during the period of global restructuring and trade liberalization in Brazil in the 1990s. The research analyzes medium cities<sup>1</sup> in the state of Sao Paulo and develops a comparative spatial analysis of the intra-urban structure between the Sao Paulo Metropolitan Region (SPMR) and Ribeirão Preto, a medium city in the northeastern region of the state situated 313 km from the state capital (IBGE).<sup>2</sup>

Although Brazil has made significant improvement by quantitative indicators in the last decade in terms of health, education, and living standards (components of the HDI), it continues to be a very unequal society.<sup>3</sup> According to the United Nations Development Programme (UNDP), South America is one of the most unequal continents of the world. Within Latin America, Brazil's GINI index in 2010 was 40 percent, which placed the country behind countries with lower Human Development Index (HDI) such as Morocco, Indonesia and Timor-Leste (UNDP). For instance, in 2004, the “20-percent poorest segment received only 2.75 percent of the national income [while] the upper 10 percent received 45.31 percent” (Baer, 2008, p. 161).

The high levels of inequality are also apparent within cities. Countrywide, more than 40 percent of Brazilian cities had a GINI Index above 40 percent in 2003 (IBGE). According to the Brazilian Institute of Geography & Statistics (IBGE)<sup>4</sup>, in 2003 32.6 percent of Brazilian municipalities had 50 percent or more of their population living in conditions of absolute poverty.

The IBGE data also indicates that absolute poverty tends to be concentrated in small and small-medium cities (up to 50,000 inhabitants). That is, the majority of the population living off less than 1/2 the monthly minimum wage is found in cities with less than 50,000 inhabitants (IBGE). While all cities larger than one million (inhabitants) have the highest inequality (GINI Index > 40 percent),

---

<sup>1</sup> In this thesis I adopt the following city size categories: small (up to 20,000 inhabitants), small-medium (>20,000 and ≤ 200,000), medium (>200,000 and ≤ 600,000), large (>600,000 and ≤ 1,000,000), and metropolitan cities

<sup>2</sup> Note: in Brazil there is the state of Sao Paulo, whose state capital is the city of Sao Paulo, which in turn is the center of the Sao Paulo Metropolitan Region (SPMR).

<sup>3</sup> GINI Index is widely used to measure inequality across countries, GINI=1 represent a society with perfect equality (no concentration of wealth), the lower the GINI the more unequal the country is (e.g. Norway's GINI index equals 0.78). The data presented here was extracted from the UN website accessed on February of 2011: <http://hdrstats.undp.org/en/indicators/default.html>

<sup>4</sup> These data were extracted from the press release in 2008, published in the IBGE website accessed on February 7, 2011 [http://www.ibge.gov.br/home/presidencia/noticias/noticia\\_visualiza.php?id\\_noticia=1293&id\\_pagina=1](http://www.ibge.gov.br/home/presidencia/noticias/noticia_visualiza.php?id_noticia=1293&id_pagina=1)

none of these large cities had poverty rates above 50 percent. In a few words, large metropolitan regions are the most unequal, but absolute poverty tends to be concentrated in the relative small cities.

The intra-urban spatial pattern of urban inequality and poverty has been the subject of much research. As noted by Barros (2004), most of those studies are based on models that describe the “morphological and social character of cities in the form of diagrams” (p.15). The classic mainstream literature in urban morphology<sup>5</sup> asserts that the **radial-concentric structure** of socioeconomic groups is the predominant typology in Brazilian cities (see Barros, 2004 and Villaça, 1998). That structure is characterized by the low income classes being largely concentrated in the peripheral urban ring, followed inwards by medium and higher income classes. This morphology is considered to be the result of the peripherization phenomenon defined as “[...] the process in which the city grows by the addition of low-income residential areas in the [infrastructure-deprived] peripheral ring” (Barros 2004, p. ii).

The presence of the low-income classes at the urban outskirts is considered to prove the existence of an intense process of urban segregation (Torres H. d., 2003). Peripherization limits the access of the poor to institutions, formalized opportunities, jobs, health centers, and social interaction, thus perpetuating the enduring cycle of urban poverty. That structure can also be called the ‘Reversed Burgess’ pattern, in reference to Ernest Burgess’ model of city growth in which the periphery is wealthier than the inner city. In Brazil, the “high status groups [tend to] live in the city center and the poor on the periphery” (Scargill, 1979, p. 214).

Although the majority of scholars still draw upon the centre-periphery model when investigating Brazilian cities, other studies on the socio-spatial structure of Latin American cities suggest a “model of the Latin American city” shaped by increased fragmentation and the rise of gated communities. Caldeira (1996), back in the 1990s, considered the development of the Sao Paulo Metropolitan Region (SPMR) to be geared towards concentration and heterogeneity. That is, “different social groups are closer in the city space, but they are separated by walls and technologies of security” (1996, p. 55). Twelve years later, Borsdorf and Hidalgo (2009) reaffirmed Caldeira’s observation in Sao Paulo Metropolitan area, and concluded that in Latin American cities “inhabitants live in bubbles which are detached from the local political and social environment.” For the authors, the resulting **fragmented structure of social bubbles** in Latin America is a consequence of processes such as the construction of gated communities, the construction of shopping centers, uneven

---

<sup>5</sup> “Urban morphology” is defined as a field dedicated to analyzing the spatial structure and character of urban areas by examining their patterns and processes of development over time through human/geographic aspects (and not only in terms of urban design).



transport infrastructure, industrial production, restricted access to poorer communities by walls and informal ways of separation. Within this perspective, the current model of large cities in Latin America is characterized by “island[s] of the rich located within an ocean of poverty” (Borsdorf & Hidalgo 2009).

Consequently, it could be argued that large urban centers are evolving from a polarized (sequence of rings) to a fragmented agglomeration (bubbles) of different and segregated social groups (Janoschka & Borsdorf, 2004). In other words, in the past, segregation happened via lack of infrastructure in the periphery, but today it manifests via walls.

In addition, Rolnik (2008) argued that a **centripetal model** of urban structure, where the flight of the middle and high classes towards walled low density peripheral areas (i.e. gated communities), connected to central areas, have surpassed the old center–periphery duality. According to Rolnik, this new urban configuration of Brazilian cities has deepened social segregation and created the *safe* vs. *unsafe* duality in opposition to the former *well–served center* vs. *ill–served periphery* structure (see Figure 1.I for illustration of the models).

Additionally, Villaça (1998) argued that “...the spatial segregation of the high–income classes [is, and it has been,] the most powerful internal element [...] that determines the structuring of the intra–urban space of our metropolis” (p.15). For the author, high income classes always move into the same direction forming “sectors” not concentric rings, the author named this structure the “**sectorial circles model.**”

Although the literature on urban morphology and the implications of spatial segregation is extensive and substantial at the metropolitan level (or large urban centers), little has been written about medium cities. For example, Cunha and Jiménez stated that “practically no research has been done on the relationship between segregation and access to public services in secondary cities” (2009, p.16). Rosembach et al. analyzed the pattern of spatial segregation in areas characterized by conurbation<sup>6</sup> and outside metropolitan areas.<sup>7</sup> Their study focused on cities in the state’s coastal region and in the region of Sao Jose dos Campos, and the authors affirm the center–periphery model for the cities analyzed in 2000 (Rosembach, Monteiro, Júnior, Feitosa, & Ramos, 2010).

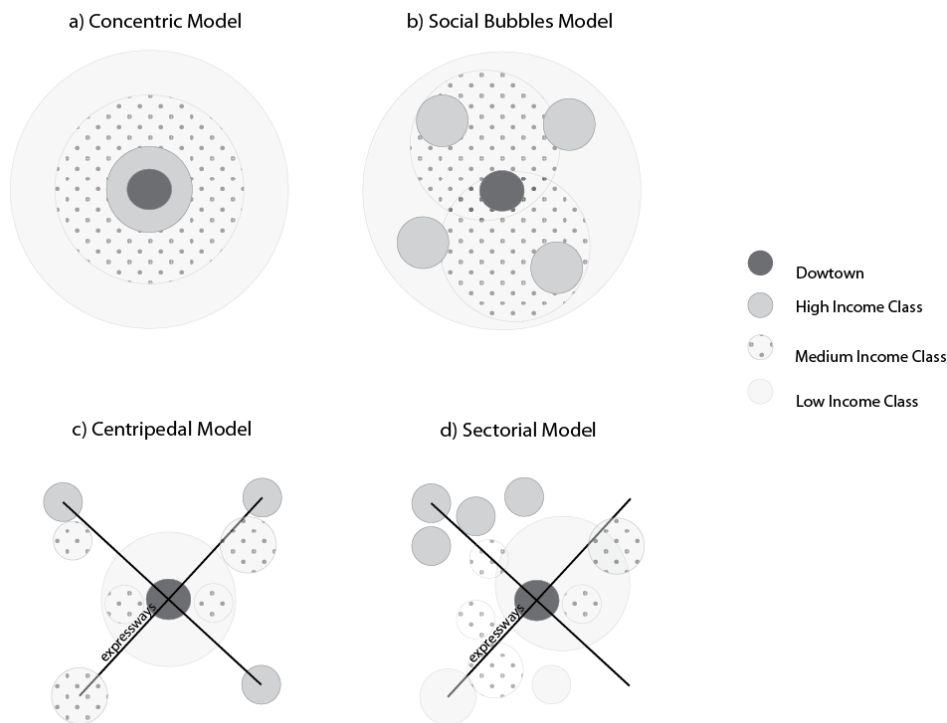
---

<sup>6</sup> “Conurbation” refers to cities and urban areas that have developed alongside and eventually have merged into one continuous urbanized area.

<sup>7</sup> See *Ampliando o olhar: metodologia para estudo comparativo dos padrões de segregação socioespacial nas regiões de conurbação de São José dos Campos e Jacaré, no Vale do Paraíba e Ubatuba, Caraguatatuba e São Sebastião, no Litoral Norte em SP* (Rosembach et al., 2010).

The present thesis attempts to address this gap. This thesis seeks to identify, first, if there is a relationship between the 20<sup>th</sup> Century globalization processes and cities spatial pattern. Second, it searches for causes of increased inequality during the 1990s and how it varied with city size – that is, has socioeconomic inequality increased more in large and metropolitan regions than in medium or small cities in the state of São Paulo? Lastly, it seeks to characterize spatial inequality (segregation) by identifying the predominant spatial pattern in one case study during the 1990s. I use a comparative analysis of intra–urban morphology to describe spatial inequality. That is, the analysis will draw upon comparisons between a medium city, Ribeirão Preto, and the largest metropolitan region in the country: the São Paulo Metropolitan Region (SPMR). The overall question I seek to answer is: are medium cities becoming more unequal, segregated, and fragmented?

**Figure 1.1:** Urban Models of Brazilian Cities



Elaborated by the Author based on Barros (2004), Borsdorf and Hidalgo (2009), Rolnik (2008), and Villaça (1998)

### 1.1.1 Research Question

Given their significant social inequality which affects the location of urban elements, infrastructure, and mobility, the analysis of segregation is of crucial importance within the analysis of intra-urban models in Latin American cities (Caldeira T. , 2000 ; Haddad & Nedovic-Budic, 2006 ; Sampaio, 2003; Rolnik, 1999 ; Smolka & Larageira, 2008 ; Villaça, 1998, Telles, 1994).

Spatial segregation is not only a consequence of urban elements' location, it is indeed a consequence of social struggle. According to Villaça (1998, p. 46), it is “produced by the dominant class and [...] is a necessary process for the existence of social dominance”. Likewise, patterns of spatial segregation “accentuate class differences and strategies of separation” (Caldeira T. , 2000, p. 215). Moreover, “...the areas where families live represent an important factor in the improvement or deterioration of their material conditions [also referred to as the] ‘geography of opportunities’ or conversely the accumulation of disadvantage (Cunha & Jiménez).

This thesis aims to explore the existence and the pattern of residential, homogenous areas in one medium city and draw a comparative analysis framed by the context of globalization and neoliberalism in the 1990s. As such, the central question of this research is the following:

***Have medium cities become more unequal over time, and what is the resulting residential urban segregation pattern in the 1990s?***

Through a case study, the city of Ribeirão Preto, I will demonstrate that although medium cities tend to be less unequal than metropolitan regions under neoliberalism and globalization at the end of the 20<sup>th</sup> Century, segregation is the determining element of the urban model and development in the city. High income residential areas split the city into ‘sectors’ of homogenous income classes, rather than forming the model of concentric rings traditionally used to analyze cities in Brazil. Moreover, the urban structure of Ribeirão Preto by 2009 suggests that the recent changes observed in the SPMR by Caldeira (2000) can be also be identified. That is, high-income groups live in highly segregated (gated) communities but in proximity to poor areas.

## 1.2 RESEARCH METHODS

In order to analyze and assess inequality and spatial segregation in medium cities, this thesis is divided into two parts: socioeconomic (statistics) and spatial analysis. The research uses quantitative methods at the city level and spatial analysis methods at the most disaggregated level available (the Census block) for the period between 1991 and 2000. This is the most recent period for which census data is available.

The overall goal of the socioeconomic analysis is to draw a picture of the general income inequality scenario across medium cities in the state's hinterland in the 1990s. The economic variable considered in this work is the difference in income, which is the proxy to best capture the existence of inequality. This proxy, represented by the Gini index, will measure the overall inequality among different cities' classes. These are examined before and after major policies of trade liberalization which were adopted in Brazil in the 1990s – policies that deeply affected inequality, the distribution of wealth, and the process of urbanization (issues discussed in the literature review).

Using these data, I seek to determine whether inequality has increased with city size<sup>8</sup> during the 1990s in the state of Sao Paulo and how the concentration of poverty has changed among the different city sizes. Moreover, the analysis attempts to verify if the IBGE's findings elucidated in the Problem Statement Section can be held for the state of Sao Paulo during the 1990s: **poverty concentrates in smaller cities and inequality in larger urban centers**. In brief, the analysis seeks to isolate the problem of inequality (and poverty) in medium cities and determine if it is indeed an increasing tendency in fast-growing intermediate urban centers.

Framed by the findings of the socioeconomic analysis, a spatial analysis will be performed to identify the spatial dimension of socio inequality pattern in terms of residential segregation at the Census block level. By segregation, I mean a higher concentration of a specific social group at certain spatial locale than in the rest of the city. The spatial analysis attempts to indentify (and to quantify) **which pattern of segregation is predominant** (concentric rings, clustered, social bubbles, random, centripetal, etc.) in the case study under the period analyzed in comparison to the largest metropolitan region in the state. The analysis uses segregation indexes and methods of cluster analysis to develop an urban model of the case study.

---

<sup>8</sup> Telles (1995) have shown that in Brazil as a whole, city size is positively associated with segregation; however, he found that industrialized areas are likely to have lower income inequality.

### 1.3 RESEARCH SCOPE AND THE CASE STUDY

The scope of this thesis is medium cities in the state of Sao Paulo, Brazil. I will first analyze data among cities based on categories of city sizes. Then, I carry out a more detailed spatial analysis in one of those cities: the city of Ribeirão Preto.

The literature has not reached consensus as to what is, or what defines, a “medium city.” Often they are called “intermediate urban centers.” In general, city classes are only to offer a context-dependent and convenient delimitation for researching, since methods for city classifications are quite debatable and relative to the analysis’ scale. In this section I briefly present the debate regarding city definitions and make the case for studying medium/intermediate urban centers in the state of Sao Paulo, Brazil.

As mentioned before, city definitions are very relative, that is, whatever is large in Sweden (where the largest city has approximately one million inhabitants) might not be in Brazil (where the largest city has almost 11 million inhabitants). A town of 20,000 might not be large if compared to Sao Paulo, but it is definitely large if compared to Borá, the smallest city in the state with approximately 800 inhabitants. In Greece, for instance, the largest medium city has 100,000 inhabitants (Costa, 2002). In Brazil, the 100,000/500,000/1,000,000 are the most used upper limits to group cities into the small, medium, and large categories. These are also the city classes used by the Brazilian Geography & Statistics Institute (IBGE), the national institution responsible for conducting the Brazilian Census. In other words, the “medium city” status depends upon a specific situation inserted in a specific context.

Additionally, the role each city plays as nodes (its function) within the regional, national and international network is key when determining where medium cities are in the urban hierarchy. As Rondinelli (1983) stated, “population density, physical size, the proportion of the labor force engaged in nonagricultural occupations, the mix and diversity of functions located within a city, its physical characteristics, and its relationships with other cities and towns must all be used to refine demographic criteria” (ibid., p.47).

Besides, as pointed out by Montgomery (2008), “multiple social, economic, administrative and political judgments come into play in the formulation of city definitions” (p.19). In this sense, the definitions of ‘consolidated metropolitan regions’ in Brazil are a good example. According to Villaça (1997), there is a widespread belief that the status of ‘consolidated metropolitan regions’ brings up administrative or political advantages for cities. This only happens through specific state legislation, which involves numerous actors, jurisdictions, and a long process of political advocacy.

Notwithstanding the limits of demographic-based city classes, whereas retaining the simplicity of demographic thresholds as a proxy for a city's service basis, I will use city classes determined by population sizes within the state of Sao Paulo, Brazil. Located in the country's southeastern region, the state of São Paulo is the richest and most populous state in the country (Figure 1.II). Nowadays, the state represents 21.7 percent of the national's total population and 33 percent of the country's GDP (IPEA).

Unlike the dominant literature that limits city size to three categories (small, medium and large), I group cities into smaller size ranges (varied by increments of 200,000 inhabitants) which, I argue, allows us to capture the more desegregated specificities of each category. I also take into consideration the fact that a significant number of medium cities are located in metropolitan regions and, as such, they are part of an urban system much more complex than medium cities in the hinterland. Grouping metropolitan and non-metropolitan medium cities into one single category would neglect the intrinsic specificities of metropolitan regions as a whole. Consequently, metropolitan medium-sized cities (a total of 65 cities in the state of Sao Paulo) and other cities that are part of consolidated metropolitan regions, regardless of their size, are included in one specific class named "metropolitan regions." The goal is to eliminate the metropolitan bias, that is, to recognize processes that are very specific to metropolitan regions and are not comparable to non-metropolitan regions. In brief, this research adopts city size classes as small, small-medium, medium, large-medium, and metropolitan, subdivided by increments of 200,000 when necessary (see Table 1.II).

**Table 1.I:** Classes of City Sizes in the state of São Paulo

Cities/Classification	Population Size	Total Population			# of Cities (in 2010 Pop.)	% of the Cities in the State
		1991	2000	2010		
<b>small</b>	up to 20.000 hab.	2,360,386	2,799,857	3,051,053	396	61.4
<b>small-medium</b>	> 20.000 ≤ 100.000	4,797,286	5,479,159	6,029,798	145	22.5
	> 100.000 ≤ 200.000	2,060,718	2,460,634	2,790,805	22	3.4
<b>medium</b>	> 200.000 ≤ 400.000	2,297,501	2,702,855	3,018,959	11	1.7
	> 400.000 ≤ 600.000	662,767	851,991	994,746	2	0.3
<b>large-medium</b>	> 600.000 ≤ 800.000	879,052	1,044,236	1,232,658	2	0.3
	> 800.000 ≤ 1.000.000	-	-	-		
<b>metropolitan regions</b>		18,531,215	21,693,671	24,134,141	67	10.4
	<b>Total</b>	<b>31,588,925</b>	<b>37,032,403</b>	<b>41,252,160</b>	<b>645</b>	<b>100%</b>

Source: IBGE, SEADE

The majority of the cities (396 cities) in the state of São Paulo have population smaller than 20,000 inhabitants (61 percent). These **small** cities represent 7.4 percent of the state’s population. The second group of cities, the **small–medium** cities, range between 20,000 and 200,000 and represent 26 percent of the state’s municipalities and 21.4 percent of the state’s population. The third group encompasses **medium** cities with populations between 200,000 and 600,000 and represent 2 percent of the state’s cities and 7.3 percent of the state’s population. Within the medium city group, cities with population between 400,000 and 600,000 show the highest annual growth rate between 1991 and 2000: an average of 2.83 percent per year. However, the highest annual growth rates in the last decade have been in **large–medium** cities with populations between 600,000 and 800,000: 1.67 percent per year between 2000 and 2010 (see Table 1.II) – it is from this group that the case study for the spatial analysis is drawn. Lastly, the **metropolitan regions** group which is comprised by small, medium and huge cities that form the three official consolidated metropolitan regions in the state (Campinas, Santos, and São Paulo) (Figure 1.II).

**Figure 1.II:** São Paulo State and the Case Study



Source: ESRI, IBGE  
Elaborated by the author

For the spatial analysis the second largest city of the **large–medium** category is this thesis’ case study: Ribeirão Preto (see Figure 1.II for localization). The reason for choosing this city is twofold. First, in the 1990s, Ribeirão Preto had a population under 500,000 and was considered by the IBGE a medium city. Yet, in 2010, Ribeirão Preto became categorized as a “big city” by IBGE with a population just over 600,000. How that transition took place is the object of interest of this research: did it also evolve from a sequence of rings, to a fragmented, socially defined bubble urban structure (like Sao Paulo)?

Second, Ribeirão Preto is located within one of the largest ‘urban agglomerations’ (UA) in the State of Sao Paulo, surrounded by fast growing cities (the small–medium city group).<sup>9</sup> Caiado (2004) analyzed the implementation and the overall dynamic of the state UAs and concluded that there is a new reality in the state’s hinterland where problems that were in the past exclusive of metropolitan areas can also be found in medium cities. These problems include the lack of coordination among municipalities within the same region and rapid population growth. In addition to those aspects pointed out by Caiado (2004), this thesis seeks to analyze if segregation and significant inequality, traits typically related to metropolitan areas in the past, are also present in medium cities and specifically in the spatial structure of Ribeirão Preto.

Additionally, the population of Ribeirão Preto has increased significantly. If the same trend persists in the near future, it is likely that it will become a consolidated metropolitan region such as Campinas and Santos did in the past. Since segregation and inequality seem to be associated with larger urban areas (especially metropolitan), it is crucial for planners to acknowledge the existence, or absence, of significant urban inequalities and the process of segregation in order to properly address these issues in the future. Additionally, this is a city considered economically<sup>10</sup> one of the most important cities in the state and to the best of my knowledge, no study on segregation in the city of Ribeirão Preto has been conducted in terms of quantification and modeling. Through the analysis and better understanding of the overall dynamics in Ribeirão Preto (and medium cities in general), regional and urban planning can further explore the real possibilities and constraints they face.

---

<sup>9</sup> The UAs are legal tools established by the state constitution in 1994. They intended to coordinate regional and inter-urban development within state boundaries; however, they have never been implemented. The UA provides a legal framework to group adjacent cities that completely or nearly characterizes conurbation. Based on a representative council system, each UA would be responsible to integrate urban and regional planning (similarly to the system of counties USA) (Caiado, 2004).

<sup>10</sup> Ribeirão Preto’s GDP per capita is above the state’s average (R\$ 24,898.11 and R\$24,457.00 respectively) and is responsible for 1.3 percent of the state’s GDP



**Table 1.II:** Population and Annual Growth Average Rate (%) between 1991 and 2000 by City Classes

Cities/Classification	Population Size	Total Population			Annual Rate Growth (%)		
		1991	2000	2010	91/00	00/10	91/10
<b>small</b>	up to 20.000 hab.	2,360,386	2,799,857	3,051,053	1.92	0.86	1.36
<b>small-medium</b>	> 20.000 ≤ 100.000	4,797,286	5,479,159	6,029,798	1.49	0.96	1.21
	> 100.000 ≤ 200.000	2,060,718	2,460,634	2,790,805	1.99	1.27	1.61
<b>medium</b>	> 200.000 ≤ 400.000	2,297,501	2,702,855	3,018,959	1.82	1.11	1.45
	> 400.000 ≤ 600.000	662,767	851,991	994,746	2.83	1.56	2.16
<b>large-medium</b>	> 600.000 ≤ 800.000	879,052	1,044,236	1,232,658	1.93	1.67	1.80
	> 800.000 ≤ 1.000.000	-	-	-	-	-	-
<b>metropolitan regions</b>		18,531,215	21,693,671	24,134,141	1.77	1.07	1.40
<b>Total</b>		<b>31,588,925</b>	<b>37,032,403</b>	<b>41,252,160</b>	<b>1.78</b>	<b>1.08</b>	<b>1.41</b>

Source: SEADE

## 1.4 THESIS STRUCTURE

This thesis has the following structure. Chapter 2 presents the literature review which covers themes related to segregation/inequality and city form in the 1990s: globalization and city form, poverty and inequality, and medium cities (the scope of the analysis).

The literature review will first assess the historical context of the data being analyzed (the neoliberal era) and socioeconomic inequality/spatial segregation. This section contextualizes the data under analysis and seeks to identify theories of urban structure that could be applied to Brazilian cities and/or medium cities. It argues that there is no single theory or model that fits the Brazilian context and, as such, the analysis of inequality and segregation in medium cities should be analyzed case by case. The literature review also discusses urban poverty and medium cities in order to provide context for the socioeconomic and spatial analysis provided in Chapter 3.

Chapter 3 is divided into two parts: socioeconomic and spatial. Section 1 presents the socioeconomic analysis across the city categories defined above in terms of urbanization, poverty, migration, employment, and income/education inequality. Section 2 evaluates how such socioeconomic scenario, revealed in section 1, is spatially translated into the urban structure of the case study, Ribeirão Preto, at the Census block level comparatively to the metropolitan region of Sao Paulo. Lastly, Chapter 4 concludes by discussing the roots of spatial segregation in Ribeirão Preto and showing the similarities and differences with the SPMR.

## CHAPTER 2 – LITERATURE REVIEW

## 2.1 Overview

Given that the urban structure of cities (spatial pattern) is socially produced and is articulated to non-spatial process such as politics, economics, and ideology (Villaça, 1997, p.12), this Chapter contextualize the socioeconomic scenario of the 1990s in Brazil. That is so because in the 1990s, Brazil adopted neoliberal policies and became actively involved in the global market. Those macroeconomic forces have impacted all socioeconomic groups' livelihood and how they interact within cities (Marcuse & Kempen, 2000).

Although what is known as “globalization” is not “automatically translated into spatial patterns,” (Marcuse & Kempen, 2000) the analysis' focus lies in the overall specificities of the intra-city spatial effects that can be observed during the 1990s. As such, in this Chapter I aim to review the literature that helps us understand the ways in which broader economic restructuring and liberalization policies implemented at the national level in the 1990s (the period of the data under analysis) may have influenced socioeconomic inequality and consequently, urban segregation. I will first review the scholarship that examines how urban structure is affected by the globalization of neoliberal policies. Second I discuss the literature that specifically concerns this relationship in regards to medium cities. In the third section of this review I discuss theories linking urban form (intra-urban structure) and globalization and their contested grounds. Section 4 places poverty and inequality into the discussion of globalization and Brazil. Finally, in section 5 I analyze the importance of medium cities in terms of urban and regional planning.

## 2.2 The Globalization Era: Neoliberalism and Increased Socioeconomic Inequality During the 1990s

The 1980s was a decade of radical changes in Latin American countries, marked by processes of redemocratization and the end of military regimes. Concomitantly, Brazil started the 1990s deeply engaged in neoliberal reforms largely linked to the globalized economy. According to the classic economic literature, trade liberalization is considered to promote increased welfare because of better allocation of national resources and economic growth in the medium to long run<sup>11</sup>. On the other hand globalization,<sup>12</sup> the channel through which trade liberalization is achievable, brings major changes to the way individual households interact producing and changing the social and spatial order of cities. Moreover, the intense flow of technology, labor, resources, goods, and people among markets is the determinant of a global economy (globalization) which is “spatially dispersed” but “globally integrated” (Sassen, 2001).

The globalization/spatial order relationship is based on the assumption that urban areas are “influenced by developments and decisions on higher spatial levels” (Marcuse & Kempen, 2000, p. 5). This section investigates how globalization and neoliberal policies have changed the urban structure of cities (directly or indirectly). To be more specific: have globalization and neoliberalism increased inequality and therefore affected spatial segregation in cities and/or in Brazil? In order to assess such a relationship I trace the major forces and origins of neoliberal processes in Brazil at the national level.

The roots of neoliberalism and free trade date back to the years following the Great Depression in the USA, which lasted between 1929 and early 1940s (Hetzl, 2007, p. 2). The concepts and ideas of the neoliberal paradigm were first applied in Chile following the military coup headed by Augusto Pinochet in 1973. After Chile, neoliberalism and free market concepts were widely embraced by Western countries such as Great Britain under the Thatcher administration and the USA under President Ronald Reagan (Brender, 2010).

Since then, most of the developed countries and international development organizations raised the flag of neoliberalism as the proper means for reaching and maintaining economic efficiency

---

<sup>11</sup> Ricardo David, author of the Law of Comparative Advantage was the first to advocate free trade among countries. His argument is that if a country specializes in the production of goods which produces most efficiently, the total output will be increased, resulting in improvements in allocative efficiency and economic welfare.

<sup>12</sup> Globalization here is considered to be a set of different processes that is the object of many theoretical and empirical works within a variety of different fields (e.g. geographers, urban planners and sociologists). I borrow Marcuse & Kempen's (2000) definition of globalization: globalization is “a combination of new technology, increased trade and mobility, increased concentration of economic control, and reduced welfare-oriented regulatory action of nation states” (pp.5).

based on the *laissez-faire* premises. Neoliberals call for maximum deregulation, liberalization, privatization and global economic integration to spur economic growth and reduce poverty (Crotty, 2000). Neoliberals argue that this set of policies is necessary to allow “national economies and the integrated global economy to operate efficiently, more or less like the models of a perfectly competitive market system found in neoclassical microeconomic textbooks” (Ibid.: p.2). Under the described system, once a deregulated national economy is operating more efficiently, resources flow to the most productive sectors, yielding higher levels of output, stabilizing financial markets, and improving the economic performance in developing countries through the flow of technology (ibid.).

The adoption of the neoliberal agenda in Latin America in the 1990s is deeply linked to the Washington Consensus. In 1989, John Williamson presented a paper in a conference where he listed “the central areas of policy reform that most people in Washington thought were needed in most Latin American countries at that time [and labeled it as the] ‘Washington Consensus’ ” (Williamson 2004–05: p.195). The list described ten items<sup>13</sup>, derived from the political and economic commonalities among Latin American countries, to be adopted by those countries in order to cope with internal debt and fiscal crises (a consequence of the disproportionate foreign indebtedness from the 1970s).

The Washington Consensus was globally implemented through supra-national organizations such as the International Monetary Fund (IMF) and the World Bank. Through the 1990s onward these institutions were able to enforce structural adjustment policies and force governments, including Brazil’s, adopt principles of neoliberalism.

Critics of neoliberalism have shown that, generally, the acclaimed benefits of a global market remain to be seen. They argue that neoliberalism fosters a non-egalitarian development between hemispheres, countries, rural and urban populations, cities, and neighborhoods. Regional inequality has been vastly debated within the context of globalization. Chakravorty (2005) argued that the gap between “leading and lagging” regions has increased in the late twentieth and the early twenty-first centuries. According to this author, “there is general agreement in this literature that leading regions are prime recipients of new productive investment, and as a result growth is concentrated in a few places while stagnation ... is widespread” (2005, p. 32). The consequence of this flux of investment is increased interregional inequalities which is “the driving force behind income inequality changes”.

---

<sup>13</sup> Originally, the list can be summarized as follows: 1) cuts on budget deficits; 2) redirection of public expenditure toward neglected fields (such as infrastructure, education, and health), 3) tax reform, 4) financial liberalization, 5) unified exchange rate, 6) quantitative trade restriction, 7) abolition of barriers impeding foreign direct investment (FDI), 8) privatization of state enterprises, 9) abolition of regulations that impede the entry of new firms to increase competition, and 10) secure property rights (Williamson 2004-05).

Nationally, *laissez-faire* policies are at the core of neoliberalism's negative effects. The not-so-active role of governments (encouraged to be limited to the provision of goods and services such as defense and law enforcement) and compliance with the free market has actually "widened the gap between the haves and have-nots" (Drakakis-Smith, 2000). Moreover, Rodríguez and Rodrik (2000) showed that empirical evidence has failed to demonstrate "that integration into the world economy is such a potent force for economic growth that it can effectively substitute for a development strategy" (p.318).

At the national level, neoliberal policies, such as extensive privatization programs, have concentrated wealth into the hands of fewer. During the 1990s, 55 percent of the world's privatization took place in Latin American countries (Chong & López-de-Silanes, 2004). In the last twenty years, Latin America was the region which experienced the largest decline in the state's share of production (ibid.). In Brazil, the late 1980s marked the beginning of liberalization, largely based on reduced tariffs and fluctuating exchange rates policies. By October of 1991 standardized processes of privatization started and the opening of the economy was emphasized by the national government. In the 1980s, only the relatively small firms were privatized. In the early 1990s the federal government adopted a strong program of privation through general liberalization policies. The program, called the "Modernizing Program," privatized large state firms processes under the rule of President Fernando Collor (Baer, 2008).

As consequence, privatization dominated the 1990s: sanitation, roads, bridges, railways, steel sector companies, light companies, petrochemical, etc., were all privatized and by 2005 a total of 120 state enterprises were sold countrywide (Baer, 2008, p. 232). Baer stated that the manner in which state-owned enterprises were sold (to the highest bidder) had "either a negligible or even negative impact on the distribution of wealth in Brazil" (Baer 2008: 233). The state, by selling major firms to the highest bidders, increased the concentration of the means of production in the hands of a few already large domestic companies or foreign buyers. According to the author, the economic efficiency of privatization in Brazil are undeniable (i.e. firms' profitability has increased as consequence of increased efficiency<sup>14</sup>); however, such "pattern of development cannot ignore the potential political and social consequences ... which implicitly assumes that distribution effects can be ignored" (Ibid:

---

<sup>14</sup> Nellis (2003) argues that the privatization of infrastructure in Latin America has not only increased firms' profitability, but also the access to infrastructure, the network coverage, and the quality of services. However, the author recognizes that the absence of a well-functioning legal and economic setting to foster privatization "may produce sub-optimal, perhaps negative outcomes—particularly in the case of infrastructure/network industries, and particularly with regard to distributional concerns" (p. 20).

p.237). Alternatively, as eloquently noted by Deák & Schiffer (2007), “neoliberalism as a policy [in Brazil] in addition to promoting privatization and concentration of capital and income, it acquired an additional meaning: it became a new cover for old *entreguismo* – the handing over of key branches to foreign capital ... globalization now also evoked to justify ... open door policies that offer up the home market to unequal competition from abroad” (p.100).

The massive privatizations undertaken in Brazil have also affected the rates of unemployment in urban centers. After privatizations, millions of public jobs positions disappeared, significantly increasing unemployment and poverty in urban areas (Sposito E. S., 2006).

According to Pereira (2006), low rates of economic growth and a decrease in the rate of investments characterized the post-liberalization period in Brazil. Between 1990 and 2000, the share of imports in domestic consumption rose from 3.2 percent to 11.9 percent and “productivity growth has been the answer to increased competition in only a limited sectors’ case” (Bonelli, 2002 cited in Pereira 2006, p.132). Pereira also asserted that since 1992, unemployment has increased from 5.7 percent to 7.6 percent in 1999 (although she recognized that it is not clear how much of the increase can be attributed to that decade’s trade reforms<sup>15</sup>).

Neoliberal policies adopted in Latin America countries, and specifically in Brazil, have negatively affected socioeconomic equality within countries and among countries. Notwithstanding the generalized benefits of integrated economy and globalization<sup>16</sup>, the intention of this reflection on neoliberalism and globalization is to expose the unevenness of such development strategies and the resulting increased inequality which is justified as temporary economic adjustment (e.g. Kresl and Fry 2005). In a few words, although globalization can bring opportunities, not all territories or social groups have the capacity of maximizing/capturing the benefits and opportunities.

The high levels of unemployment (as a consequence of the opening of markets and the competition of imported products, combined with extensive privatization) and the limited role of public funding (as a result of neoliberal adjustment policies) have directly affected the urban structure of cities in Brazil. As a matter of fact, the number of slum-dwellers in Latin America increased from 111 to 127 million in the 1990s (Smolka & Larageira, 2008, p. 100) and substandard housing became “the rule rather than exception for city growth in Latin America” (ibid.).

---

<sup>15</sup> However, according to IBGE, between 2003 and 2007 unemployment rates have declined from 12.3 to 9.3 percent of the economically active population – that time frame corresponds to the rule of president Lula (2003-2010), known for its redistribute policies.

<sup>16</sup> I.e. eventual economic growth, faster communication and transportation, increased variety of products, increased cultural ties, and increased access to products and services limited before to only a few



According to Rolnik (2008), there is a new spatial order of cities in metropolitan areas in Brazil which is the consequence of changes taking place in the 1990s discussed above (production restructuring and structural adjustments). Rolnik noted that the 1990s were marked by increased segregation, densification of low income areas, and the sprawl of industries towards the periphery (rural land) in the search for cheaper land. Along with the flight of industries to the urban outskirts, new investments went into gated communities and peripheral developments were dedicated to the high income classes. The flight of the high income classes to the outskirts is, according to Rolnik (2008), explained by the increased violence resulting from increased poverty.

Under the influence of neoliberal policies within the context of a globalized economy in the 20<sup>th</sup> Century, the State started to play the “regulatory role” rather than investing in areas such as urban infrastructure and housing. Such decreased investment had a “cascade effect,” as argued by Ueda (2006). The diminished role of the State, allied with the inefficiency of public institutions, has generated a general sense of urban insecurity and high rates of violence.

What about medium cities specifically? How have those processes (globalization) affected their urban structure? The next section reviews the literature that seeks to answer this question.

### 2.3 Medium Cities and Globalization in Brazil: The Alternative to Ill–Metropolises?

It was during the 1970s, a period of intense rural exodus and high urbanization rates, that medium cities were placed at the center of urban and regional planning research in different countries.

According to Costa (2002), the concept of medium cities (or intermediate centers) appeared for the first time in France, between 1971 and 1975, under the development of the VI Socio Economic Development Plan. This plan represented an important period of the *aménagement du territoire* process, which since the 1950s promoted the spatial decentralization of population and economic activity in France. Medium cities were considered key nodes for the advancement of a balanced urban hierarchy whose main purpose was the mitigation of the problems faced by large urban centers at that time.

In Brazil, the 1970s were marked by intense rural exodus along with the concentration of population and economic activities in large metropolitan areas. These processes were accompanied by significant growth of medium cities. The 1970s were the beginning of the problematic urbanization process the country still faces today. The shrinking of the rural population was very significant, decreasing from 44.6 percent of the population in 1970 to 21.6 percent in 1996. Moreover, between 1980 and 1990, rural exodus “reduced the rural population by 4.5 million” in the Southeast region (which includes the state of São Paulo, Minas Gerais, Espírito Santo and Rio de Janeiro) (Perz, 2000, p. 24). According to Perz (2000), rural–urban migration between 1986 and 1991 “was selectively directed toward small urban centers as well as large cities such as [metropolitan regions]”; consequently, medium cities and their respective spatial order were deeply affected by the 70s rural exodus in Brazil.

To briefly summarize the twentieth century’s urbanization process in Brazil, I borrow Moysés’ (2007) critical assessment:

1. Up to mid 1960s – “**tolerable urbanization**”: cities offered a reasonable quality of life and a diversified supply of jobs within the three sectors (industrial, service and commerce);
2. 1960/70s – “**problematic urbanization**”: rural immigration rates were extremely high, accompanied by high population concentration in metropolitan regions;
3. 1970/80s – “**chaotic urbanization**”: the quality of life falls down to troublesome levels in medium and large centers in spite of the integrated development plans sponsored by the *Serviço Federal de Habitação e Urbanismo* (SERFAU – Urbanism and Housing Federal Service)<sup>17</sup>

---

<sup>17</sup> The SERFAU was created in 1964 and extinct in 1974; its primarily goal was to manage “the modernization” of cities.

4. The 1990s – “**explosive urbanization**”: this period was characterized by a new urban lifestyle, increased social fragmentation, reduced numbers of job positions, and increased urban violence as a consequence of the lack of consistent and long-term urban policies.

During the **problematic** and the **chaotic** urbanization process (1970s and early 1980s), the main Brazilian urban policies paid great attention to medium cities. Under the *Plano Nacional de Desenvolvimento I e II* (PND – National Development Plan I and II), medium cities were implicitly or explicitly used to inhibit the rural–urban migratory flux towards metropolitan and large centers. This policy was implemented in order to improve efficiency within some production sectors, while nodes within the national socioeconomic system were multiplied and expanded (Filho & Serra, 2001). The PND II (1974) is considered to be the first national urban strategy adopted in Brazil. It sought to foster the development of the urban system in a systematic and a more even manner. The “secondary centers” status attributed to medium cities was central to national development and the decentralization of production from the southeast metropolitan regions (São Paulo and Rio de Janeiro) (Steinberger & Bruna, 2001).

The 1990s, the period of **explosive urbanization**, sets the stage for my analysis and for the importance of the fast-growing medium cities. Graham and Marvin (2001) refer to the patterns of urbanization in this historical era as “splintering urbanism” indicating processes by which the privatization of networked infrastructure (water, roads, telecommunication, transport, energy, etc.) “unevenly bind spaces together across cities, regions, nations” (p.11). That is, the replacement of state-controlled management of infrastructure by profit-driven-private companies has often meant in developing countries, higher charges, deteriorating services, and further distances between “valued ‘citadels’” and the “lower-income spaces that surround them” (p.375).

In this line, Deák & Schiffer (2007) argued that the provision of infrastructure saw a sharp decrease in investments at the national and local levels. At the national, the sectors of energy, roads, and telecommunications can be mentioned; and at the local level, the project such as the expansion of the subway system in the metropolitan region of São Paulo, which began in the 1970s and by 1990s it was “merely forty-five kilometers long” is illustrative (Deák & Schiffer, 2007, p. 102). It was indeed, according to Maricato (2000), during the 1990s that, each Brazilian metropolis had within its limits another metropolis: the metropolis of slums apart from the legal/formal city.

According to Filho & Serra (2001), under globalization and the neoliberal policies adopted in Brazil in the 1990s, three main forces affected the distribution of wealth and population in the country: i) the restructuring of production, ii) opening of the national market, and iii) decreased role of the

State. They identify two opposing tendencies as consequences of the effects of the production restructuring taking place in the 1990s: the deconcentration and the concentration of different production processes. As a consequence of the flexibility brought about with advanced communication technologies, industries were able to spread out their low-skill production processes toward regions outside metropolitan regions, aiming to lower costs. Meanwhile, high-skill research, intensive production processes tended to be further concentrated in metropolitan regions, where universities and research centers were already located (Filho & Serra, 2001). Yet, production dispersion has not been the only outcome of the 1990s industrial restructuring. According to Souza, “unemployment, growing informality” and “increasing importance of criminal strategies of survival” accompanied the production restructuring in the 1990s (2001, p. 439). These secondary tendencies, according to Souza, are the main source of the socio-political-spatial segregation of urban space in large Brazilian metropolises.

Regarding the opening of markets in the 1990s, the elimination of tariffs and the resulting input cost decrease increased the competitiveness of certain productive areas in the country. However, this process has further increased regional inequality (between cities), according to Filho & Serra (2001). The authors argued that regional producers of goods that were submitted to the unfair competition of cheap imported products were negatively affected. Wealth and production become further concentrated in cities and states already industrialized and well served with infrastructure, such as the hinterland of São Paulo state. Contrary to policies adopted in the preceding decades (under the PDNs discussed above), the national government during the 1990s prioritized macroeconomic policies geared towards monetary stability and the mitigation of fiscal crisis, paying little attention to regional inequality or urban development (Steinberger & Bruna, 2001).

The main consequence of this industrial restructuring in the state of Sao Paulo was a significant modification of urbanization and demographic trends. The main trend observed during the period of explosive urbanization was named by Milton Santos (1993),<sup>18</sup> the “desmetropolization” process. That is, population distribution data showed that the “old metropolitan regions” (especially São Paulo and Rio de Janeiro) were not shrinking, but medium cities were increasing in size and population at higher rates – a deconcentration of industrial employment and a deconcentration of urbanization (Souza, 2001). Given such demographic dynamics, Santos argued that intermediate

---

<sup>18</sup> Milton Santos is probably the most influential Brazilian urban thinker. Born in 1926 he passed away in 2001. He was the son of slaves who, through his studies, collected *Honoris causa* in more than eleven universities from seven different countries. In 1994 he was the recipient of the Vautrin Lud International Geography Prize (the Nobel prize within the field of Geography) – the only non-Anglo-Saxon-European recipient since the creation of the prize.

urban centers were becoming the *locus* of increasing intellectual work and the source of information necessary to foster the economic activity. In Santos' own words:

[...] the future years, probably the next decades, will be marked by an increasing flux of poor to large centers; simultaneously, medium cities will see an increasing flux of middle classes. (1993 p. 123 – my own translation)

In Brazil, the importance attributed by Santos to medium cities is somehow novel given that their importance have been traditionally assessed on the basis of their geographic location and their political-administrative significance (Souza, 2009), not by their innovative or intellectual production attributes. Accordingly, Diniz & Razavi (1999) showed that the industrial deconcentration process in the early 1990s was also a result of increased wage, land, and pollution control costs within the São Paulo Metropolitan Region. These increased costs, coupled with empowered labor unions forced enterprises to locate “outside of, but not far from, Sao Paulo city” – that is toward the hinterland of the states' boundaries (ibid, p.102). Such circumstances have fostered the development of technological centers in medium cities such as Campinas and São José dos Campos.

Additionally, the decreased role of public investment as consequence of the decreased role of the State have also affected infrastructure in urban areas. The privatization of strategic sectors such as roads, railroads, electricity, and telecommunication has limited direct investment in urban areas that would otherwise contribute to the spatial deconcentration of industry and population. Nationally speaking, the result was the concentration of production in urban areas already well-served by infrastructure such as the southeastern region (which includes the state of Sao Paulo). Because medium cities in Sao Paulo were well-provided with infrastructure (in comparison to other regions) they became the locus of industry development and population growth. Within this new context, medium cities act as “articulation node” where increased flux of goods and products across medium cities has taken place (Filho & Serra, 2001).

The medium cities in the urban hierarchy in Brazil are crucial to neoliberal policies adopted in the 1990s, the period of explosive urbanization. During the 1990s, the traditional old metropolitan centers were deeply affected by the structural changes in the national economy (restructuring of production, opening of the national market, and decreased role of the State) as a result of globalization and neoliberal policies. Metropolitan regions were not as attractive as in previous decade, mainly due to the losses in job opportunities and the intensified poor quality of life, which are the direct effects of increased poverty, inequality, and the deconcentration of industry. Concomitantly, medium cities started to attract not only poor migrants from other regions of the country but also middle/high-skilled professionals escaping from the chaotic metropolitan centers (Souza, 2009). Those are the

main forces affecting and shaping the spatial order of medium cities in São Paulo under globalization and neoliberal policies.

## **2.4 The Urban Spatial Outcomes of a Globalized Economy**

In the previous section I highlighted the national and international macro policy context of the 1990s. This decade was characterized by high socioeconomic inequality and increased poverty due the indirect effects of globalization and direct effects of neoliberal policies. In this section, I review the literature that specifically links globalization and city form worldwide and in Brazil. Globalization brought enormous transformations on all realms of urban lives during the twentieth century. However, it is already common sense that although places and people face the same wave of transformations and trends at the global level, globalization affects people, countries, and cities in different manners and through a series of intermediate levels.

By looking at the theoretical framework linking globalization and city form, I seek to answer the following question: is there a city form specific of, or at minimum resulting from, globalization that might be used to analyze medium cities? To answer that, I look at the main concepts and hypotheses from the literature on globalization and city form. In particular, I discuss how globalization affects city form in large urban centers and metropolitan regions in developed countries. Second, I discuss how those hypotheses have been studied/applied in the Brazilian context and discuss the work of Brazilian authors “reading” Brazilian cities under the umbrella of globalization. Third, I focus on medium cities and the impacts of globalization on their urban structure.

### **2.4.1 City Form under Globalization: any Specificity?**

According to Marcuse & Kempen (2000), there are four main changes on household interactions the spatial order of cities resulting from globalization. First, household interactions are influenced by the restructuring of economic activities and production processes. Because of the increased division of labor that is becoming “more capital-intensive and less dependent on manual labor,” (ibid, p.6) some cities lose manufacturing employment while others gain jobs in the service sector. Consequently, the

demand for low- and high-skilled jobs is altered and the ways in which different classes within the social stratum interact and live alongside is modified.

Second, globalized production processes affect the pattern of migration and demographic trends because workers “seek to improve their position ...by moving to places where a better life can be expected” (ibid. p.7). This migratory pattern encourage processes of “urbanization, suburbanization, desurbanization and re-urbanization ... motivated by the creation of attractive residential areas” in order to attract high skilled working classes (ibid. p.7).

Third, globalization has changed the role of the public sector. Specifically, under the principles of neoliberalism mentioned above, the public sector is encouraged to be minimally interventionist, meaning decreased subsidies and financial support of those that are not in a strong position in the labor market. In some countries, the “process of concentration and segregation may be further exacerbated by the declining welfare-oriented role of the state in housing” (ibid, p.10). Marcuse & Kempen further argued that the income of the low-classes declined as subsidies are reduced.

Marcuse & Kempen (2000) argued that the societal forces discussed above shape cities into what they called a “quartered city.” Under that concept, city form is the result of the arrangement among specific types of neighborhoods (quarters) expected to be found at specific locations: citadels (protected enclaves of the elite), gentrified areas (mainly high-income professionals, often single), suburbs (owner-occupied single family housing with green environments that are nice places for children), tenement areas (working class areas, mixed occupancy housing), ethnic enclaves (self-defined communities which protect a specific ethnic group), and the excluded ghetto (the abandoned city where race or ethnicity is combined with social class).

Gentrified areas (one type of “quarters” discussed above) is related to the theory of “global city” which is a process resulting from the more polarized society under globalization. According to the literature on global cities, there is a new model of urban form in developed countries given the new globalized economy (globalization). This new socio-spatial arrangement is considered to be the result of the world’s economic production system and the resulting global network of strategic urban centers which are considered to be the best “production sites” (Sassen, 2001). In this sense, Sassen (1998) claimed the existence of a “dual-city,” an urban scenario resulting from globalization processes that do not foster the expansion of a Fordist middle class. For Saskia Sassen, globalization creates a kind of “socio-economic symbiosis” in which the wealthy and the poor are dependent on each other.

Saskia Sassen’s theories developed from earlier studies by John Friedmann. Friedmann and Wolff (1982) argued that the “character of the urbanizing processes – economic, social, and spatial –

which define life in [the principal regions in the global urban network], reflect, to a considerable extent, the mode of their integration into the world economy” (Friedmann & Wolff, 1982, p. 309).

In line with Friedmann & Wolff, Sassen (2001) argued that the spatial dispersion of economic activities was accompanied by the agglomeration of central financial functions in a few financial centers, of which she analyzed New York, London, and Tokyo – the so-called the “global cities.” Sassen asserts that the new structure of the economic activity has changed the organization of work and therefore the social order of cities. Under the new circumstances, information and telecommunication technologies tend to be agglomerated at key centers because of the required complex physical facilities necessary to run top-level control and management activities. At the same time, by shifting production overseas to take advantage of lower labor costs in not so developed countries, production processes becomes dispersed. The combination of these divergent forces (dispersion and agglomeration) within globalization is the basis for the emergence of the Global City, which are strategic major cities.

For Sassen, the shift from an industrial to a service-based economy in developed countries has brought about increased “socio polarization” to the detriment of the middle class. The bottom line of such a shift is an emerging urban society that is socially and spatially fragmented and highly polarized.

Manuel Castells, on the other hand, analyzes the relationship between globalization and city form mainly through the “information age perspective.” Castells (2005) argued that three aspects of cities have been transformed: their functions, their meanings, and their forms. Those aspects are being transformed by urban trends summarized as follows: automated agriculture, concentration of population (metropolitan regions), advanced telecommunications, social relationships characterized simultaneously by individualism and communalism, disintegration of the tradition patriarchal family, emergence of network enterprises, multiethnic cities, global criminal economy, emergence of defensive spaces/segregated areas, urban places as consumption items, double movement of inclusion in transterritorial and exclusion by spatial differentiation, emergence of mega-metropolitan regions, and increased organized socio/environmental movements.

Castells considered these to be new forces and trends that directly alter the urban milieu in the early 21<sup>st</sup> Century, a milieu he refers to as “the informational city.” He also acknowledges that old issues such as segregation and inequality persist. Under this perspective, network society creates “mechanisms of exclusion – technological apartheid in the era of the Internet” (Castells 2005, p.57). Once again, increased segregation is considered to be the likely outcome of a globalization where the



“fragmented metropolis and the individualization of communication reinforce each other to produce an endless constellation of cultural subsets” (p.52).

#### **2.4.2 City Form under Globalization: The Brazilian Specificities**

In Brazil, it is undeniable that the restructuring of the world economic system (globalization) during the late 80's and early 90's brought changes in the pattern of spatial and social segregation. However, Villaça (1998) argued that national and international forces (neoliberalism and globalization) have significantly affected processes of urbanization, not the intra-urban form itself in Brazil. These new urbanization processes in turn have deeply influenced the urban formality/informality relationship. That is, the relationship between the illegal city (slums) and the formalized city (legal) has been modified under globalization.

Rolnik (1994) argued that the informal/irregular city has been noticeably growing under the influence of neoliberal capitalist forces. Moreover, such increase is accompanied by the formal city changing into a growing number of private, controlled, and semi-public enclaves (ibid.; Caldeira, 1996). Spatially, the 1990s represents the reaffirmation of polarized cities: the formal and the informal cities live and develop alongside. In South America, the city of Sao Paulo reaches the 'climax' of the dual city phenomenon according to Clara Irazábal (2005), because that is where "... the rich becomes fewer and wealthier while the poor become more numerous and destitute" (ibid., p 30).

In Brazil, considerable thought has been given to the way globalization employs Western concepts of planning and policy, such as "efficient city", "global city", "strategic planning", and "urban marketing". It was during the 1990s that urban planning in Brazil started to make use of "commodity language" in face of urban problems. At the center of this new planning rationale is the concept of efficiency, a concept whose attention is devoted to the consumers, not to the citizens of urban space (Maricato, 2000).

The application of imported neoliberal "strategic planning" practices – which by essence are alienated from developing countries' realities – has reached only to the "formal city" while the "illegal city" has been completely disregarded (ibid.). In 1989, for instance, in the city of São Paulo there were more than 30,000 illegal streets, meaning that more than 2.4 million people did not have the right to an address and were almost never incorporated in master plans. According to Maricato, the importing of neoliberal western concepts of city efficiency and planning has contributed to the incomplete

modernization and aggravated the forces of social exclusion of cities. Maricato further argued that it is not due to the absence of 'comprehensive plans' that Brazilian cities possess considerable problems: comprehensive plans exist and are of good quality according to her. The main issue is that urban planning is only applied to a few segments of the society/city: "the market for others, the law for different others, modernity for different few, and citizenship only to some" (2000, p.125).

Moreover, Ferreira (2004) argued that the adoption of strategic planning practices, combined with the restless pursuing of a "global city," status has been detrimental to the metropolitan region of Sao Paulo. These reforms, he argued, served the local elite and private real estate investments.

In addition to the "glamour" behind the idea of a "global city" worshipped by the wealthy, developers are able to politically maneuver and direct public funds to regions of the city that are already well provided with infrastructure. Newly constructed *business districts*, which legitimize the city in the global sphere are example of this. That is, the city grows by the interest of a politically strong group whose life is globally oriented while those left behind are alienated by the globalized economy and are forced to move even further away to the periphery.

As Ferreira argued, "more than global, the dynamics driving city form in São Paulo represents the most archaic patrimonialism, that is, the appropriation of the public by dominant private sectors in favor of their own interest" (2004, p.19). This urban dynamics reinforces the structural inequalities inherited from colonial times. Under Ferreira's point of view, changes in production processes, neoliberal policies, a globalized economy, are only one side of the spatial pattern of the metropolitan region of São Paulo, many local processes and historic background have to be taken into consideration.

### 2.4.3 Final Remarks

This urbanization–focused review of globalization literature illustrates insights offered by the global cities literature – Friedman’s World City, Sassen’s Global City, Castells’ Informational City. While most of the theoretical models on globalization era and city form are derived from the context of developed countries, spatially they imply one characteristic that find commonality with that observed in Brazilian metropolitan region: increasing fragmentation and segregation of different socioeconomic groups.<sup>19</sup>

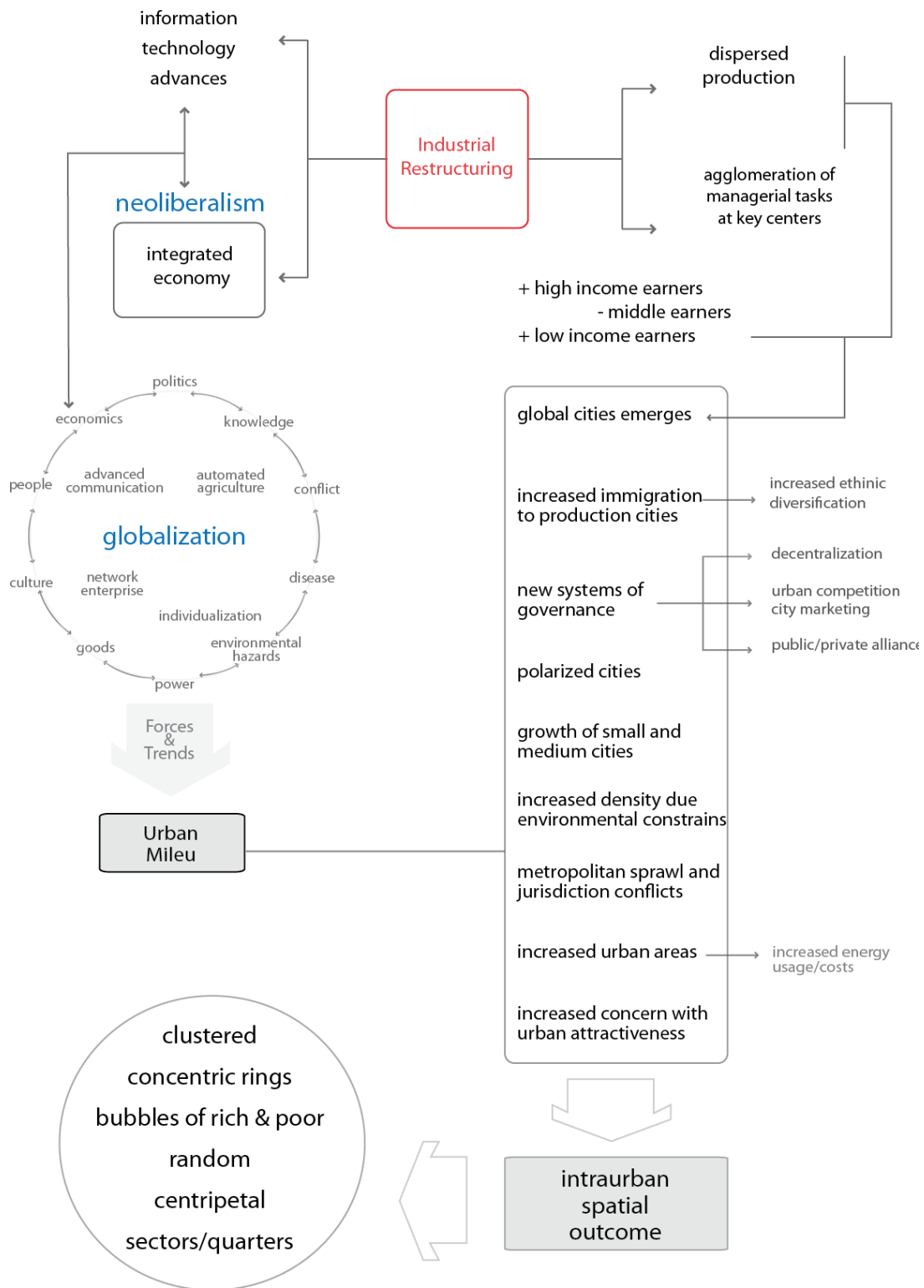
The literature that examines globalization in respect to Brazilian cities reveals that the consequences of globalization on the urban territory are many and significantly affect innumerable aspects of city life, especially, urban governance, urbanization, land tenure, and social exclusion. Above all, the very concept of globalization and neoliberal ideas of city management, and its implicit discourse, has been acutely questioned by scholars such as Ferreira (2004) and Maricato (2000).

Succinctly, however, I can say that globalization has contributed to the “... fragmentation processes [which] imply diverse territories that make up the geography of inequalities” (Souza, 1995, p. 66). The resulting intra–urban patterns of this process of fragmentation are context–dependent and diverse (see Figure 2.I). The analysis conducted in Chapter 3 presents a systematic study of the social and spatial structures comparatively as “means of learning through differences, rather than seeking out similarities” (McFarlane, 2010, p. 728).

---

<sup>19</sup> Such discussion is located within a little explored topic within urban theory in developing countries: the “bias in urban studies towards Western cities and the relegation of cities in poor countries to residual categories [which] makes the irrelevance of urban theory a real possibility in the light of global trends in urbanization” (Robinson, 2006, p. 2).

**Figure 2.I: Globalization Theoretical Diagram: Searching for Urban Forms**



Source: Elaborated by the Author based on Borsdorf & Hidalgo (2005-2009), Sassen (2001), Barros (2004), Castells (2005), Janoschka & Borsdorf (2004), Drakakis-Smith (2000), Ferreira (2004), Torres (2003), Marcuse & Kempen (2000), and Rolnik (2008).

## 2.5 The specificities of Brazilian Cities: Urban Poverty, Inequality and Segregation

In the majority of large Latin American cities, the gap between the poor and the rich is quite evident. Inequality is vividly unveiled to you at every moment. A quick drive around the city and it will not take too long to find yourself in the disturbing, very common, situation: at your left a brand new imported Porsche, at your right a fairly old man pushing his handcart full of collected garbage material to be sold at a recycling center. Drive more, and you will see a lot of unwelcoming streets closed off, with an private guard at the entrance. Walk around, and you will see entire neighborhoods walled off, with highly controlled entries, while in the surrounding streets children are at the traffic light selling candies to survive. Take a tour, and you will see fences, beautifully painted, that hide the urban poor from the rest of the city while expressways open the path for those who own a car. In short, poverty and wealth inequality is the most critical issue in cities of the developing world (Werna, 2000).

To explain why this inequality exists would be an exhaustive and enduring task meriting an exclusive research project. It is common knowledge, however, that in Brazil socioeconomic inequality materializes itself in spatial segregation and in a territorial exclusion that goes beyond the concept of poverty or social disparities (Rolnik, 1999). As such, this section focuses on the concept of inequalities, framed by urban poverty, that develop side by side with spatial segregation.

From the outset it is important to note that in Brazil, residential segregation has traditionally been analyzed on the basis of income classes rather than any race related factor. Socioeconomic segregation rather, than racial segregation, is considered to be the real urban problem in Brazil. That does not mean race is not an important aspect of the spatial segregation in Brazilian cities (Telles, 1994). Nevertheless, it is a fact that segregational legal tools, whether racially or socially defined, never existed in Brazil as in South Africa or USA. However, the absence of legal tools that would assure the full participation of all society's groups (including African Brazilians) in the formal urban milieu is a type of de facto segregation. Segregation in Brazil is a legal issue not by the presence of legal tools that would enforce it, but due to the absence of tools that would otherwise avoid it.

The main obstacle in studying race is the lack of data at the intra-urban level, that is, at the census track level especially for small and medium sized cities. However, Telles (1994) argued that there is little, but substantial, academic work related to the issue of spatial segregation and race in Brazil, breaking apart the myth of a "racial democracy" traditionally voiced by many Brazilians.

Telles (1994) showed, through dissimilarity indexes, that "residential segregation based on race takes place" in cities like São Paulo, Rio de Janeiro, and Salvador. Moreover, racial segregation is

clearly correlated to class segregation as African Brazilians are concentrated in the low-income classes and whites in the medium-classes. Accordingly, Silva (2006) verified that blacks are a majority in the poor periphery (around 50 percent) while they only represent 17 percent of the population in the central areas of the SPMR. This type of social structure can be somehow expected in a country that has allowed slavery to last more than 300 years and has constantly denied the existence of racism since then (Jere-Malanda, 2008).

Poverty, and the perception of poverty, varies significantly across urban spaces and can be defined based by several attributes of wellbeing: lack of income, food consumption, access to health care, basic material needs, access to infrastructure, geographic isolation, access to resources, and social vulnerability. The most common measures of poverty are based on thresholds derived from a desirable social standard. It is widely known and accepted that poverty is a long term, persistent and complex phenomenon; however, relatively new by the end of the 1990s was “first, the impetuous and urgency given to the spread and deepening of poverty by the structural adjustment programmes imposed by the World Bank and IMF, [and second], the increased awareness of the spatial shift in poverty to more concentrate pockets in towns and cities” (Drakakis-Smith, 2000, p. 133).

Accordingly, the capitalist “city as commodity” thinking, promoted by the neoliberal agenda, fostered the market logic of “get-rich-quick” in which property owners and developers are mainly responsible for maintaining and intensifying the spatial segregation of poorer groups. Rentiers do that by continually feeding land speculation, that is, owners keep off the market their properties awaiting better prices, and real estate developers’ profits come from “land use changes they promote through their own projects” (Scheingart, 1996, p. 68).

Within that context of land speculation combined with the political maneuvering of wealthy groups, what one sees in Brazil again is the formal city being further legitimized while the informal city remains unnoticed as stated (Rolnik, 1999). That is largely explained by infrastructure investments which tend to be concentrated in areas with lower need, that is, a “bias toward the elite groups” as shown by Caldeira (1996), Werna (2000), Lima (2001), Sampaio (2003), Ferreira (2004), Haddad & Nedovic-Budic (2006), among many others.

In mid-sized cities over 20,000 in the state of Sao Paulo, the tendency of fragmentation existed since the end of 1990s (Rolnik, 1999). The author stressed the connection between the economic development and territorial exclusion through the analysis of regularized and illegal cities in Guarujá, Diadema, and Jaboticabal. The author pointed out that “traditional urban regulation,” based on intra-urban zones classified according to floor area ratio, height, and setbacks indexes was

inefficient in addressing social exclusion and frequently resulted in exclusionary policies. Rolnik (1999) sought to evaluate how planning tools in cities over 20,000 in the state of Sao Paulo are capable of constructing cities that are environmentally and socially equitable. Based on an index of “territorial exclusion<sup>20</sup>” constructed from Census variables, the author concluded that territorial exclusion is highly linked to wealth concentration, that is, to socioeconomic inequality. The author showed that, zoning and planning tools have served the purpose of keeping poverty far away from well-served areas.

Accordingly, urban governance (or urban management) is a crucial tool when addressing poverty segregation and inequality. The literature offers a vast array of strategies that differ in terms of how inequality should be addressed. Chakravorty (2005), for instance, argued that urban inequality should not be considered to be a “pressing issue in urban development.” Considering that increases in inequality is commonly considered to be a consequence of a technological shift and higher productivity, the author argued that urban management should address poverty directly rather than inequality.

Beyond urban government, the way the space is constructed (besides infrastructure), and how it cognitively affects inhabitants, is of great significance when addressing inequality. However, the relationship between urban design and socioeconomic inequality has been little explored (Lima, 2001). Lima (2001) by linking empirical and theoretical aspects, showed how the configuration of the transportation axis deeply affected the mobility of the poor and therefore their access to the formal urban opportunities and facilities. In other words, Lima illustrated how limited urban mobility is associated to spatial segregation. The author argued that social life and interaction can indeed be promoted through urban design. Moreover, in developing countries, “studies involving land uses and urban forms indicate that the local economy of the city depends on the city layout” (ibid., p.494). Through the analysis of axis (street layout), Lima showed that the periphery of Belém is a disintegrated residual region within the urban fabric, that is, it is an “area to pass through.” Such city layout “contributes to the fragmentation and isolation of peripheral areas [characterized by] pockets” of poverty (ibid, 498). Meanwhile, high-income classes also live in segregated spaces, but in a coherent city layout which has assured the wealthy good accessibility to retail spaces and facilities through the urban region.

---

<sup>20</sup> The territorial exclusion concept, also known as “social exclusion” index, attempts to quantify how much households and families are socially vulnerable due to segregation, inadequate infrastructure and absence of social and public institutions.

Urban poverty and urban periphery are intrinsically linked concepts in Brazilian cities. According to Sposito (2004), the 20<sup>th</sup> Century's urbanization process has indeed reinforced the center-periphery urban typology. Within that process, the periphery is negatively defined when compared to the city's center. Contrary to what is commonly seen in US cities, where middle classes make the majority of the peripheral population, in Brazil the poor were pushed outwards the urban core. The displacement of the poor toward the periphery is, according to Sposito, a consequence of the "real estate speculative game" which freely acts in the production of the urban fabric. The occupation of the periphery irregularly takes place, while juxtaposed cities with different socioeconomic contents, patterns, cohesion, and habitats are constructed.

Since the 1980s, the real estate market has increased its attention towards medium cities. This increase is due the industrial deconcentration towards the state's hinterland, the decreased economic significance of small urban center because of increased mechanization of the rural production, and the better life quality compared to metropolitan regions (Sposito M. E., 2004). According to Sposito, the process of verticalization in medium cities during the 1980s, reinforced the center-periphery structure. This is so, because apartment's blocks were private developments associated to central areas at the same time as government's action to alleviate the issue of habitation deficit targeted the periphery areas of medium cities through the construction of *conjuntos habitacionais* (public housing developments).

The occupation of the periphery by the poor further increases spatial segregation of low-income classes by limiting their access to urban institutions and opportunities. To conclude, poverty and urban segregation are realities that "feed each other" in Brazil. Planning tools have traditionally intensified the segregation and exclusion of the urban poor from the formal city and social and public institutions. The low investments in peripheral areas, the limited mobility of the low income groups, land speculation, biased intra-urban regulation driven by larger developers are some of the factors that contribute to increased spatial segregation.

Given that segregation and inequality are intrinsic characteristic of Brazilian cities, in the next chapter (Chapter 3) I analyze these characteristics in depth. I show that as we go up in the urban hierarchy (from the smallest to the largest city), poverty and inequality increase in the state of Sao Paulo. Section 2 of Chapter 3 seeks to quantify segregation and analyzes how poverty is spatially distributed in our case study. But first, the following section presents the context of medium cities and justifies the importance of studying them.

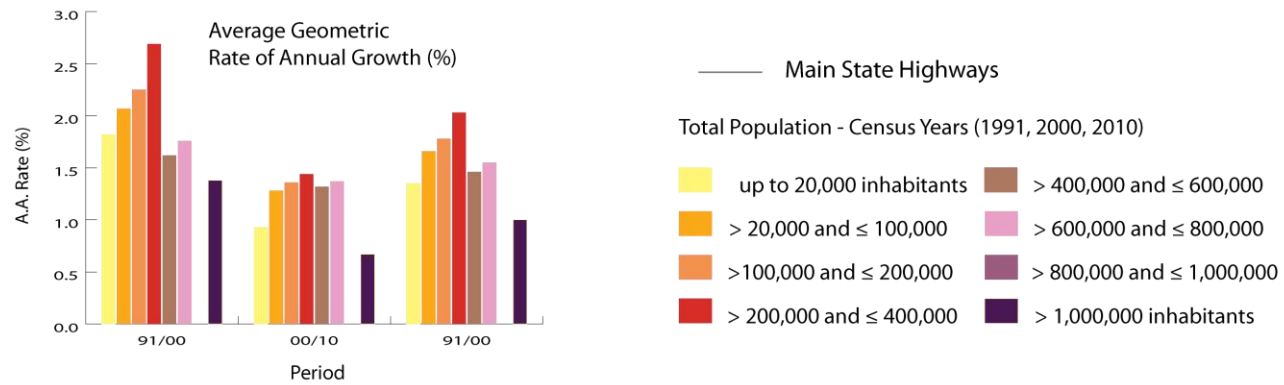
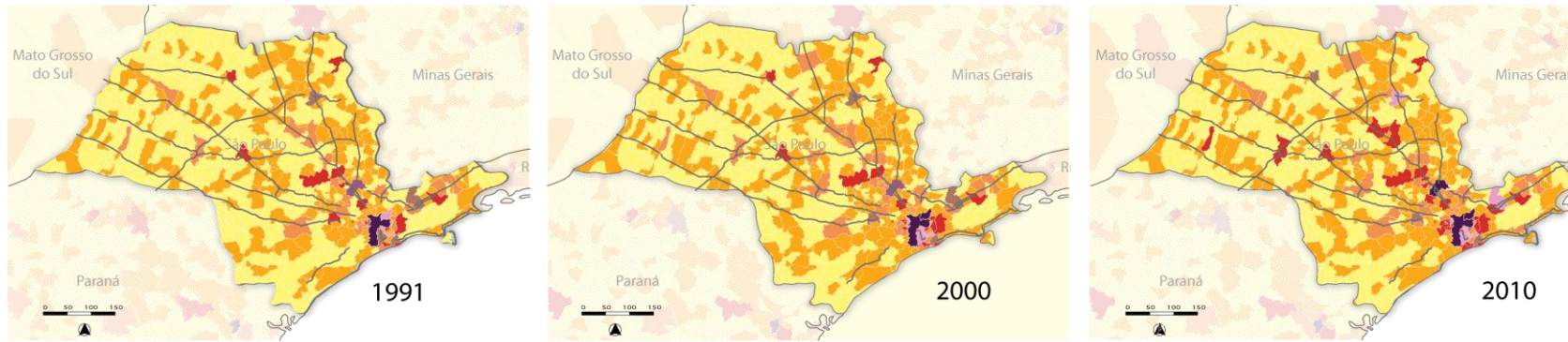


## 2.6 Medium Cities and Urban Development: Why are they Important?

In the developed countries' context, medium cities are considered a necessary channel through which "innovations and the benefits of urban growth [are] diffused" (Rondinelli, 1983). That corroborates with the rank-size rule, which, according to Rondinelli (*ibid.*), can be applied to many developed countries. In short, the rank-size rule states that "in a country with rank-size distribution, the population of any city is inversely proportional to its rank in the hierarchy" (*ibid.*, p.17) – meaning that those countries would have a small number of very big cities, innumerable medium cities, and a large number of small cities. That structured system of cities allows the diffusion of development and innovation in industrialized countries which is explained by the central place theory. The central place theory states that developed countries have established a system of central places which provide for higher-order goods (expensive and low rates of exchange) and smaller centers with high rates of good exchanges (lower-order goods). High-order goods are expensive goods that the population does not purchase often; accordingly, low-order goods are products that are purchased often (newspaper, groceries, etc.). That structure characterizes a balanced and integrated system of cities, or a balance pattern of urbanization, which allows people to access certain markets in any part of the country.

Following the central place theory, which legitimates the role of medium cities as the channel of development and growth, we see that many developing countries deviate from the rank-size distribution and are often characterized by a "dominant primary city" which concentrates a significant number of people, industries, services, facilities and infrastructure. As pointed out by Mitchell-Weaver (1991), developing countries are marked by primacy and gaps in the city distribution – a convex dashed curve distribution instead of a linear function. From that perspective, the dominance of a primate city has often been considered a sign of underdevelopment; or as put by Bhattacharya, "a strongly held view about urbanization in developing countries is that current city size distribution are too primate:... their urban populations are too concentrated in a few large cities" (2002, p. 4220). Such a theory has been refuted by Andrade and Lodder (1979) who shows that there is no concrete evidence to confirm "the correlation between economic development and the national cities network structure" (cited in Andrade & Serra, 2001).

**Figure 2.II:** São Paulo State: Total Population 1991, 2000 and 2010 by Classes of City Size



Source: IBGE and IPEA Data  
 Elaborated by the author  
 February, 2011

Aside from developed/underdeveloped theory, the development and growth of medium cities in Brazil has been documented by a series of scholarly works and by media such as newspapers and magazines' articles, books, government programs and policies, and by the local population. In quantitative terms, medium cities in Brazil are growing fast, that is, a significant number of them have noting, however, that the increased participation of medium cities proportionally to the country's total population is largely a consequence of growth in medium cities located adjacently to metropolitan regions. That is, metropolitan regions are expanding toward medium cities in the periphery, and this process should not be directly related to "**population dispersion**" (Andrade & Serra, 2001). Still, the growth of medium cities is significant. In 1970, cities with population between 50,000 and 500,000 comprised 26.5 percent of the national population. In 2000, that percentage increased to 35.7 percent – a 9.2 percentage point increase. Meanwhile, cities with more than 500,000 inhabitants have increased from 19 to 27 percent, an 8.6 percentage point increase (Andrade & Serra, 2001).

Recent works on urban growth theory hold that cities grow in sequential order: the "sequential city growth theory." Based on data of cities worldwide, Cuberes (2011) empirically showed that early in the process of urbanization, the largest regions are the first to develop. But as time passes, the fastest growth rates are diverged to smaller cities "farther down in the urban hierarchy" (p.232). According to Cuberes, the largest center grows up to a critical size, and then the "second largest city starts growing at a significant pace until it too reaches a critical size, and so on" (2011, p. 229). Recent data in Brazil seem to corroborate with such theory. Between 1991 and 2000, in the state of Sao Paulo, the fastest growing cities have populations between 200,000 and 400,000 (see Figure 2.II)<sup>21</sup>. Simultaneously, the city of Sao Paulo has annually increased by a 0.88 percent rate, signaling that it might have reached its "critical size." So one can expect medium cities to keep growing fast for some time in the future, especially in the state of Sao Paulo where the primacy of the city of Sao Paulo seems to be slowly fading.

Based on the theory of sequential city growth, one can expect medium cities to rapidly reach the status of "big cities" and eventually "metropolitan regions" where population growth will be concentrated. Urban and regional planning in medium cities should seek to address issues characteristic of metropolitan regions before the consequences become environmental and socially unsustainable. As shown by Rolnik (1999), economic and social inequalities in urban areas have implications that impact the function of cities. According to the author, in Brazil, large metropolitan

---

<sup>21</sup> It should be mentioned that a lot of cities showing high growth rates are located around, or in, metropolitan regions such as Santana do Parnaíba in the SPMR, one of the fastest growing cities of the state.

areas with high socioeconomic inequalities and spatial segregation are characterized by: i) urban sprawl towards the periphery; ii) car dependence as a consequence, iii) environmentally protected areas are often occupied by informal settlements, putting in risk the public health of the entire city, iv) the real estate market become much more speculative given that structure and spatial quality is concentrated in a few areas of the city, and most importantly v) high indices of urban violence. In a few words, socioeconomic inequality and spatial fragmentation are the basis of the poor quality of life in metropolitan regions in Brazil.

### **2.6.1 Medium Cities within the State of Sao Paulo**

Brazil's industrialization has deeply affected regional development and city growth, as discussed in section 2.3. Specifically, in the state of Sao Paulo, the beginning of the industrialization process in the mid– nineteenth century was a consequence of the primary export model, which the most important economic activity was the production of coffee concentrated in the Sao Paulo plateau. The export revenues generated from the coffee production “fueled demand for consumer goods and urban services [while] earnings were transferred to other activities” in the state's capitol, the city of São Paulo (Diniz & Razavi, 1999, p. 101). However, after coffee production experienced a number of crises (especially the 1929 crisis) in the early 20<sup>th</sup> Century, the primary export model was substituted by an import–substitution industrialization model. This model was based on a great inflow of international investment which greatly benefited the state of São Paulo and especially the state's capitol – the state's share of national industrial production increased from 16 percent, to 45 percent, to 58 percent in 1907, 1939 and 1970, respectively (ibid.).

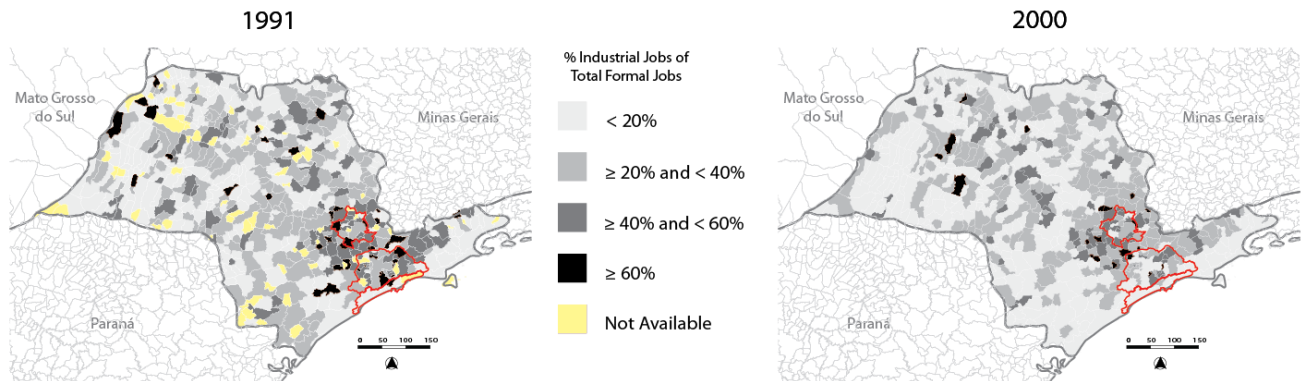
However, since the late 1980s and early 1990s, the concentration of industries in the São Paulo Metropolitan Region (SPMR) has taken a different direction. As consequence of the market opening policies adopted in the 1990s, which allowed the massive entry of cheap imported products that drove out local competition, the industrial production dispersed. That is, industrial job opportunities spread out towards the hinterland of the state. Figure 2.III shows the proportion of jobs in the industrial sector to total formal employment. It also displays the percentage growth rates of jobs in the industrial sector between 1991/2000 in the state of São Paulo. Darker colors are cities in which the number of jobs in the industry have grown the most; conversely, the lightest grey color represents cities that have lost jobs in the industrial sector. It is clear that cities in the hinterland, outside metropolitan regions,

are becoming more industrialized (which follows Sathler & Miranda, 2010). The maps also show that the share of industry in total formal employment is declining in the state as a whole: total industrial jobs decrease 20.4 percent in the 1990s.

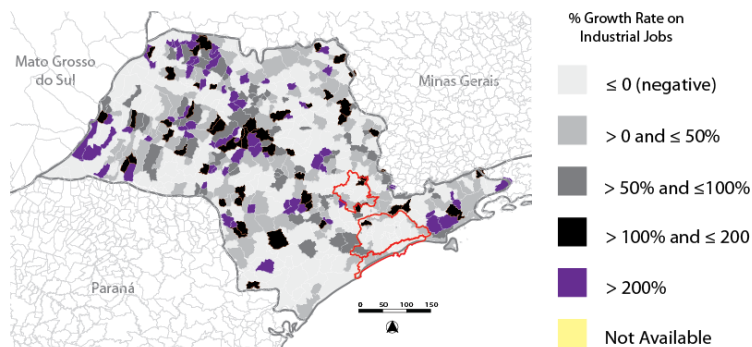
The opening of the market itself does not explain the dispersion of industries within the state boundaries. Several economic and noneconomic factors combined to disperse industrial activities and the population within the state (Sathler & Miranda, 2010).

**Figure 2.III: % Growth Rate of Industrial Formal Employment, São Paulo State from 1991 to 2009**

% Industrial Formal Employment, Sao Paulo State - 1991 and 2000



% Growth Rate of Industrial Formal Employment, Sao Paulo State - 1991/2000



Source: SEADE, IBGE  
 Elaborated by the author  
 March, 2011

The main economic factors are the automated agricultural activities that created centers of agribusiness in the hinterland; public investments in technological centers such as the petrochemical and informational technology sectors in Paulinia and Campinas; improvements in the state highway network; and the increased costs associated with the industrial production in the São Paulo Metropolitan Region (SPMR). On the other hand, noneconomic factors, such as the deterioration of the quality of life and fragile labor conditions, in the SPMR also facilitated the dispersion of the population toward intermediate and small urban centers.

The immediate consequence of such economic and noneconomic factors is a reconfiguration of population distribution and migration. The period between 1995 and 2000 was the first which the SPMR showed negative migratory net rates – migratory rates of cities such as Campinas and Santos were significantly higher than the RMSP (cities that were considered part of consolidated metropolitan regions officially in 2000 and 1996, respectively).<sup>22</sup>

Medium cities' recent robust population growth and intense economic expansion is illustrated by the preliminary results of the Census 2010 and by data on local and national gross domestic product (GDP). According to IBGE, in 2000 in Sao Paulo State, 21 cities had population between 200,000 and 600,000 inhabitants. One decade later, that figure jumped to 30, representing approximately 24 percent of the state population in 2010. Out of that group, 23 cities grew by rates higher than the state's rate and 18 had rates higher than the national rate between 1990 and 2000. In 2010, medium cities accounted for 7.4 percent of the national population (see Table 2.I). Between 2000 and 2010, only five out of fifteen cities with population between 200,000 and 600,000 inhabitants presented growth rates lower than the megacity of Sao Paulo. As stated before, a significant number of these fast growing cities are located around metropolitan regions (Sao Paulo, Campinas, and Santos); however, there is also a significant number of them located along the main intrastate transportation axis in the hinterland (see Figure 2.II).

In addition to the significant share of the state's population, this group of medium cities accounted for approximately 23 percent of the state GDP in 2008,<sup>23</sup> a total of R\$ 230.4 million (approximately \$392 million US\$ in 2011 exchange rates). That is an impressive number given that this group represents only 0.54 percent of the nation's municipalities, while accounting for 7.2 percent of the country's GDP (see Table 2.I). In sum, the main tendency we observe is that population

---

<sup>22</sup> Consolidated Metropolitan Regions are officially recognized by state law, whose main goal is to establish and perform urban planning at the metropolitan level and receive public funding for integrated planning.

<sup>23</sup> According to the SEADE Foundation - the state government statistics agency.

growth and the country's wealth are not further concentrating in large metropolitan regions.

Academia has noticed this phenomenon and the popular press has loudly cheered it. In 2008, the *Folha de São Paulo* (one of the highest newspaper circulation rates in the country) published an article about medium cities and their incredible economic growth. The article explored the recent industrialization of cities between 100,000 and 500,000 and the resulting increase in their share within the national GDP. That, according to the article is evidence of the recent trend of a regional decentralization process that is taking place countrywide since the 1990s. In another highly visible occasion in 2010, one of the main magazines of Brazil, called VEJA, published a forty seven page journalistic article about medium cities and their incredible economic and population growth. The article entitled *Cidades Médias – Aonde of Futuro já Chegou* (Medium Cities – Places where the Future has Arrived) (VEJA, 2010), optimistically claims that the future of the national development will take place in medium cities, where the quality of “life is better, opportunities exist, and the territory is more controlled and planned” when compared to large metropolitan regions.

That sort of optimistic view ought to be considered with caution, since countrywide the unbalanced, unequal model of city development observed in most of the large metropolitan regions is being replicated over and over. That is why a recorded history of the evolution of these cities becomes necessary in order to plan, monitor and intervene before they become like the São Paulo metropolis. Above all, it is necessary to ensure that medium cities will indeed be capable of performing their role as crucial nodes within the national development agenda of creating a more equitable and inclusive society.

## 2.7 Final Remarks

As stated before, countless studies explore intra–urban dynamics in metropolitan regions and large urban centers. Although in smaller numbers, a significant amount of research has been done about medium cities especially in the last decade within the Latin American context. Scholars doing this research include, but are not limited to Rolnik (1999), Andrade & Serra (2001), Carvalho (2003), and Costa (2002) . In the 1990s, as noted by Andrade & Serra (2001), national and worldwide academic events such as the *Villes Moyennes – Space, Société, Patrimoine* in France in 1995, the *Seminário Internacional Ciudades Intermedias de América* in Chile in 1996, and *I Jornada de Pesquisadores sobre Cidades Médias* in Brazil in 1999 are examples of the interest in medium cities. The creation of the *Rede de Pesquisadores sobre Cidades Médias* (Research Network on Medium Cities) and the *II Simpósio Internacional Sobre Cidades Médias* realized in Urbelândia, Brazil in 2006 are good examples of the recent interest on medium cities. My research attempts to contribute to the discussion of inequality in medium cities, a topic insufficiently explored at the intra–urban level. Second, I seek to offer a comparative study to better understand medium cities’ local dynamics in relation to metropolitan regions.

The main motivation, as put forth by Carvalho (2003), is that globalization in Brazil seems to have caused the “metropolitization” of the urban space in the sense that fragmentation and socioeconomic exclusion are now widespread within the many levels of the urban hierarchy. Phenomena exclusive to metropolitan regions in the past are now manifested in medium cities. Embedded in the context of globalization in the 20<sup>th</sup> Century and the spread of the neoliberal urban logic, the analysis presented in the next Chapter seeks to investigate **how socioeconomic inequality behaved during the time of trade liberalization across medium cities, and how such inequality was spatially translated into the urban milieu in terms of socioeconomic group distribution/segregation?**



**Table 2.I: Group of Cities with Population  $\geq$  200,000 and  $\leq$  600,000 inhabitants outside Metropolitan Regions in Sao Paulo State**

	Total Population			GDP (in millions R\$)*			GDP per Capita (R\$)*		
	2000	2010	Growth (%)	2000	2008	Growth (%)	2000	2008	Growth (%)
<b>Brasil</b>	169,799,170	185,712,713	9.37	2,409,322	3,205,793	33.06	14,070	16,910	20.18
<b>São Paulo State</b>	37,032,403	39,924,091	7.81	732,484	1,003,016	36.93	19,780	24,457	23.65
<b>São Paulo City</b>	10,434,252	10,659,386	2.16	276,793.50	357,116.68	29.02	26,398	32,493.96	23.09
<b>São Paulo State Medium-size Cities (in 2000)</b>									
1 Presidente Prudente	189,186	207,625	9.75	2,864.79	3,182.33	11.08	15,143	15,629	3.21
2 Araraquara	182,471	208,725	14.39	3,194.34	3,924.43	22.86	17,506	19,332	10.43
3 Jacaréí	191,291	211,308	10.46	4,416.13	4,307.48	-2.46	23,086	20,818	-9.82
4 Marília	197,342	216,684	9.80	2,492.11	3,056.84	22.66	12,628	14,393	13.97
5 São Carlos	192,998	221,936	14.99	3,438.26	3,912.67	13.80	17,815	18,155	1.91
6 Limeira	249,046	276,010	10.83	4,139.93	5,646.02	36.38	16,623	20,906	25.76
7 Taubaté	244,165	278,724	14.15	5,379.98	6,887.55	28.02	22,034	25,404	15.29
8 Franca	287,737	318,785	10.79	3,186.28	3,791.90	19.01	11,074	12,159	9.80
9 Bauru	316,064	344,039	8.85	4,443.96	6,004.12	35.11	14,060	17,764	26.34
10 Piracicaba	329,158	364,872	10.85	5,760.50	8,853.17	53.69	17,501	24,797	41.69
11 Jundiaí	323,397	370,251	14.49	8,722.15	15,106.55	73.20	26,970	41,959	55.58
12 São José do Rio Preto	358,523	408,435	13.92	5,834.31	7,056.70	20.95	16,273	17,760	9.13
13 Sorocaba	493,468	586,311	18.81	9,820.80	13,072.89	33.11	19,902	23,138	16.26
14 Ribeirão Preto	504,923	605,114	19.84	9,549.04	13,896.53	45.53	18,912	23,838	26.05
15 São José dos Campos	539,313	627,544	16.36	23,436.99	20,718.59	-11.60	43,457	34,081	-21.58
<b>Total</b>	<b>4,599,082</b>	<b>5,246,363</b>	<b>14.07</b>	<b>96,679.57</b>	<b>119,417.77</b>	<b>23.52</b>	<b>0.0434571</b>	<b>0.03</b>	
<b>% of State</b>	<b>12.4%</b>	<b>13.1%</b>		<b>13.2%</b>	<b>11.9%</b>				
<b>% of National</b>	<b>2.7%</b>	<b>2.8%</b>		<b>4.0%</b>	<b>3.7%</b>				

\* GDP and GDP per capita for Brazil estimated using 2009 prices

Source: SEADE, IBGE and IPEA Data  
Elaborated by the author

## CHAPTER 3 – THE ANALYSIS

### **3.1 São Paulo Medium Cities: Socioeconomic Analysis**

The first section of this Chapter analyzes the main socioeconomic characteristics of medium cities, considering the city categories defined and discussed in section 1.2 of Chapter 1 (small, small–medium, medium, large–medium, and metropolitan cities). The socioeconomic analysis draws upon data available at the city level and attempts to comparatively situate the dynamics of medium cities in the 1990s. I specifically look for trends noted by the literature and discussed in the previous Chapter: increasing poverty, changes on the urban employment basis, urban growth and increased inequality.

The second section looks at the city of Ribeirão Preto, the case study, to characterize spatial segregation in medium cities. I perform a comparative analysis between Ribeirão Preto and the São Paulo Metropolitan Region. The spatial analysis will make use of clustering analysis, a spatial method widely used to identify regions in space where higher than expected counts of an event are observed.

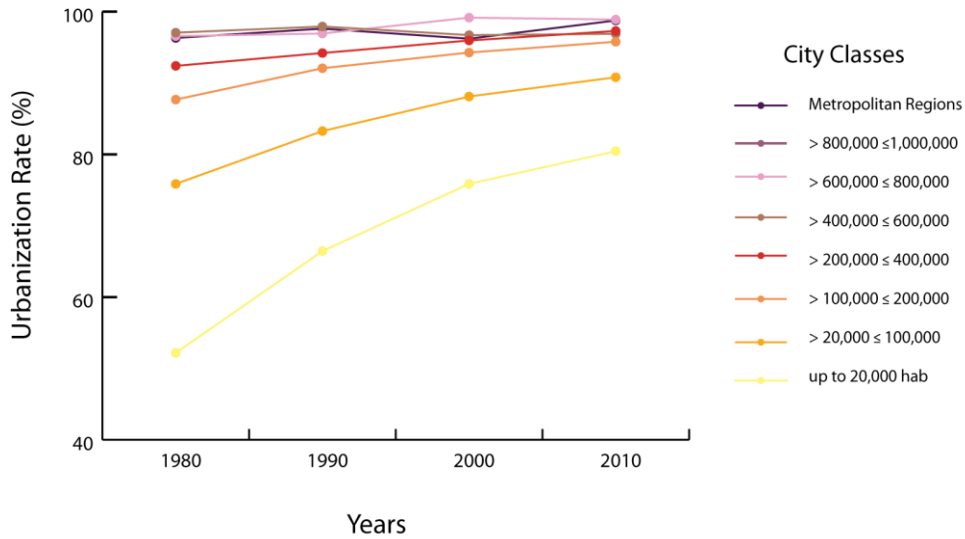
#### **3.1.1 Territory & Urbanization in the State of São Paulo during the 1990s**

The contemporary process of urbanization in Brazil is highly dynamic, that is, the urban hierarchy and the characteristics of urban regions are constantly changing. Medium cities have shown significant population growth in the last decade, which affects the physical territory of cities traditionally accompanied by intense urbanization. Overall, rates of urbanization within the state of São Paulo are still increasing at a significant pace, especially within cities at the bottom of the urban hierarchy (small cities). Figure 3.I displays the urbanization rates (weighted averages) for each of the city classes in the state of São Paulo. This figure illustrates how small and medium cities have been experiencing an intense process of urbanization since the 1980s and the beginning of the 1990s. Thirty years ago, small cities (up to 20,000 inhabitants) had on average half of their population rural and half urban – today the rural population in these cities comprises only 20 percent of total population on average.

In the last decade, the urban population of metropolitan regions increased slightly, while cities of the medium upper range leveled off. It is also worth noting that cities in the 600,000 and 800,000 range shown urbanization rates slightly above those of the metropolitan areas between 1990 and 2010. That is, the urban populations of large medium cities are still increasing, whereas metropolitan regions have stabilized. If rates of the last decade persist throughout the next decade, it is likely that 76 percent of cities statewide will be 80 percent urban by 2020. That is, three quarters of cities in the state

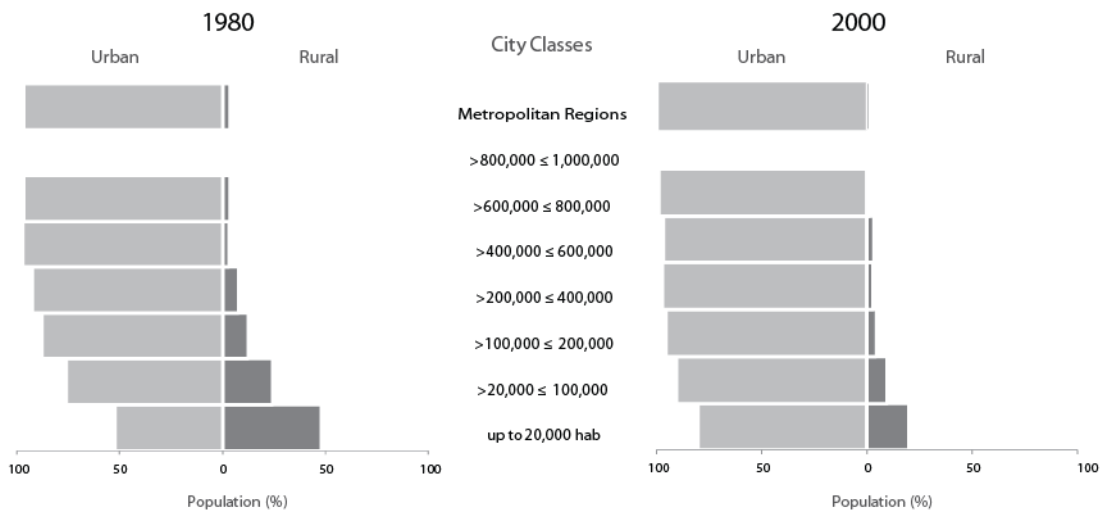
will be urban, and only a small percentage of the state population will bear the rural status of living (see Figure 3.II) (source: SEADE).

**Figure 3.I:** Urban Population (%) between 1980 and 2000 by City Class (Urban Pop/Total Pop) in the state of São Paulo



Obs: The rates for each city class were calculated as weighted averages based on their total population and urban population.  
Source: SEADE

**Figure 3.II:** % Rural/Urban Population between 1980 and 2000 by City Class (Urban Pop/Total Pop)



Obs: The urban/rural populations for each city class were calculated as weighted averages based on their total population and urban population.  
Source: SEADE

### 3.1.2 Absolute Poverty and Migration in the State of Sao Paulo

To look at poverty levels, I use the standard measure of poverty used by the IBGE (Brazilian Institute of Geography & Statistics). That is, people living in households where the per capita monthly income is equal or less than one half the national minimum wage are considered to be in, “absolute poverty.” At the municipal level, data are available through the Institute of Applied Statistics Research (IPEA).

Between 1991 and 2000, the percentage of the state population living in poverty increased by 1.5 percentage points. Table 3.I below summarizes the general trends in terms of population in poverty in the state’s cities. Although the number of cities with high percentage of population in poverty decreased during the period (from six to two percent), the number of cities with poverty levels between 10 and 30 percent increased significantly. To be precise, in 1991, only 54 percent of cities had poor populations between 10 and 30 percent; in 2000, such figure jumped to 80 percent. That is, in 2000 most of the cities, or 80 percent, had poverty rates between 10 and 30 percent, as opposed to 54 percent in 1991. Those numbers suggest that cities in the state are becoming alike in terms of poor population (see also Figure 3.III) – in other words, they do not deviate significantly from one another, more than 80 percent of cities fall within the 10 and 30 percent range.

Among city classes, small and small–medium cities showed the most significant decrease in poor population. Meanwhile metropolitan regions showed the greatest increase, 4.25 percentage points, even though their state’s share population decreased by 0.08 percentage points. Medium cities and large–medium cities also showed significant increase in poor population, albeit their share of the state population has slightly increased in the period. These numbers strongly suggest that poverty is concentrating in the largest cities (above all in metropolitan cities) – moreover, they suggest that the increase in population is not being accompanied by increase in poverty in small cities.

Figure 3.III below displays the location of cities categorized by the poverty levels shown by Table 3.I. The Southwestern region of the state is where high rates of poverty persisted during the 1990s. Regarding metropolitan regions, the poverty rate increased while the hinterland showed signs of decreasing rates.

**Table 3.I:** Absolute Poverty Rate in São Paulo in 1991 and 2000 by City's Poverty Rate

	1991		2000	
	N° Cities	% State Cities	N° Cities	% State Cities
<b>&lt; 10%</b>	64	9.92	48	7.44
<b>10% &lt; 30</b>	349	54.11	518	80.31
<b>30% &lt; 50%</b>	196	30.39	68	10.54
<b>&gt; 50%</b>	36	5.58	11	1.71
<b>Total</b>	645	100%	645	100%

Source: SEADE, IPEA Data

**Table 3.II:** Absolute Poverty Rate 1991 and 2000 by City Class

Cities/Classification	Population Size	Poverty Rate			Proportion of State Pop		
		1991	2000	% Change (p.p.)	1991	2000	% Change (p.p.)
<b>small</b>	up to 20.000 hab.	30.45	23.37	-7.08	7.47	7.56	0.09
<b>small-medium</b>	> 20.000 ≤ 100.000	19.54	16.73	-2.81	15.19	14.80	-0.39
	> 100.000 ≤ 200.000	12.84	12.39	-0.46	6.52	6.64	0.12
<b>medium</b>	> 200.000 ≤ 400.000	10.07	10.53	0.46	7.27	7.30	0.03
	> 400.000 ≤ 600.000	7.94	9.52	1.59	2.10	2.30	0.20
<b>large-medium</b>	> 600.000 ≤ 800.000	8.70	10.83	2.13	2.78	2.82	0.04
	> 800.000 ≤ 1.000.000	-	-	-	-	-	-
<b>metropolitan regions</b>		9.45	13.70	4.25	58.66	58.58	-0.08
<b>São Paulo State Total</b>		12.86	14.37	1.51			

Source: SEADE, IPEA Data

An important question about the change of poverty among cities is if the poor population is fleeing from the adverse conditions of metropolitan regions or if the intra-urban social structure was influenced by other factors (such as improvement on labor relations and increase in income). Unfortunately there is no data available to test whether the poor or the rich is moving around or whether out-of-state population is moving in – in other words, there is no data which specify the

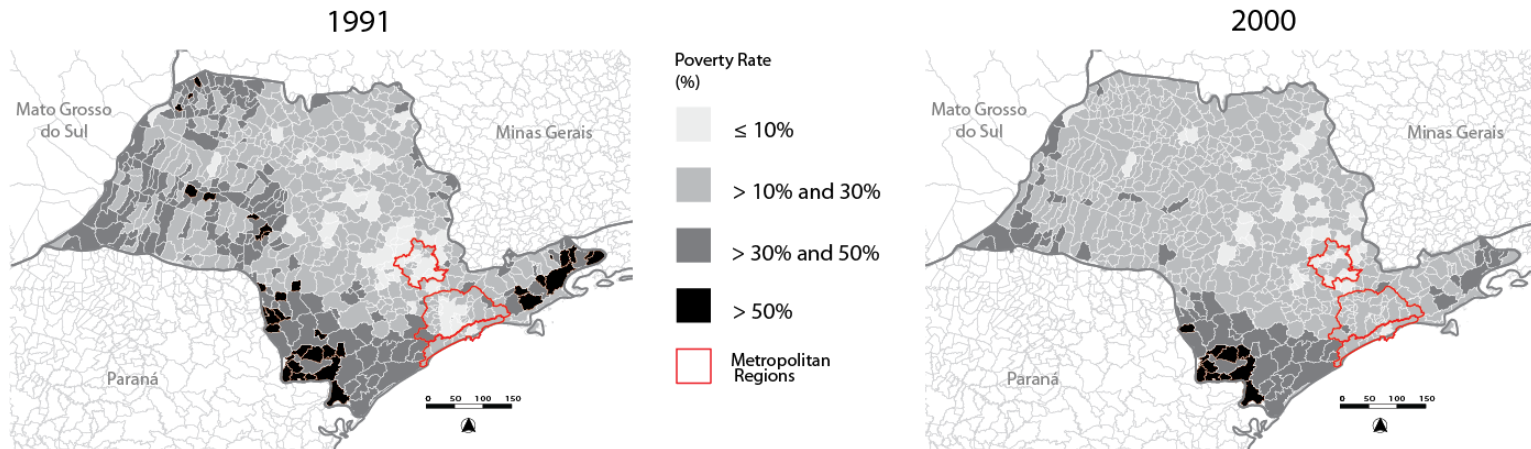
destiny, origins and income classes of migrants for all cities in the state. However, to test any indication of a possible association between poverty and migration, the data on net migration<sup>24</sup> are mapped below the poverty levels. Figure 3.III shows the migratory fluxes within cities in the state. A few conclusions can be drawn from the mapped data. First, the southeastern region of the state is where poverty and low rates of migration occur. There are few cities in the northwestern region with very high rates of net migration, those are cities considered technologic nodes (e.g. Ilha Solteira) or cities around urban university centers (e.g. Bady Bassit near São José do Rio Preto). Additionally, the majority of cities with increased migration rates seems to follow the main transportation axis that originate in the São Paulo Metropolitan Region and spread out towards the hinterland (northeastern region).

---

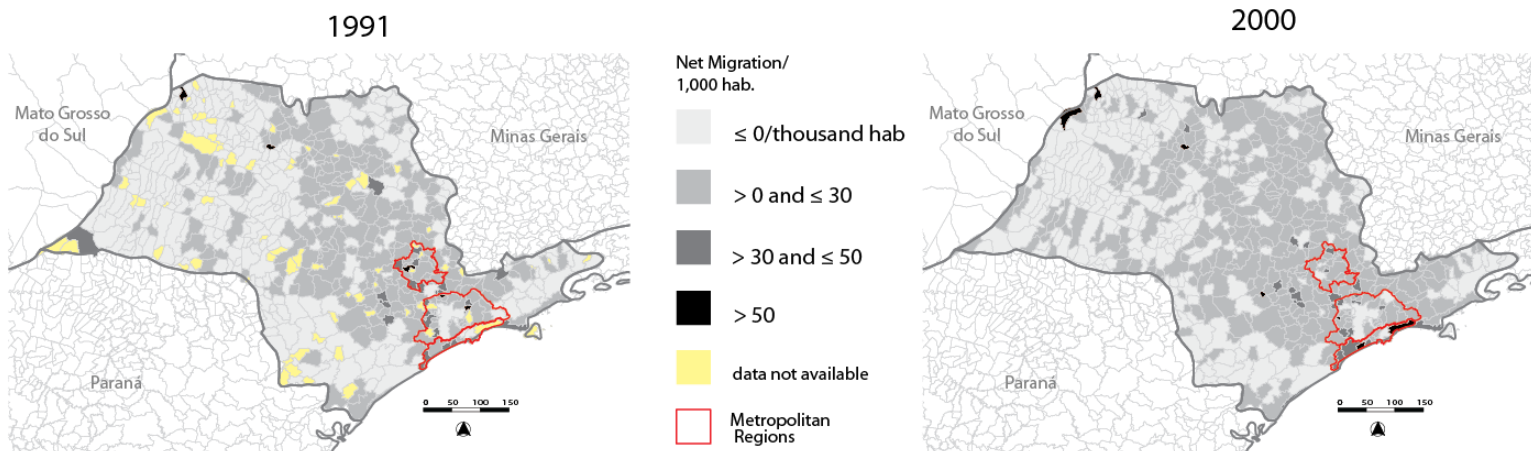
<sup>24</sup> Net migration rate equals = (in population – out population / total population within census years) \* 1000

Figure 3.III: Poverty Rate and Net Migration per 1,000 inhabitants between 1991 and 2000

Poverty Rate, São Paulo State - 1991 and 2000



Net Migration Rate/Thousand Hab., São Paulo State - 1991 and 2000



Source: IPEA, SEADE, IBGE  
 Elaborated by the author  
 March, 2011



### 3.1.3 Unemployment and Employment Share in the state of São Paulo

As discussed in the literature review in Chapter 1, the 1990s were marked by the spatial dispersion of production in the state of São Paulo and high rates of unemployment. Table 3.III shows unemployment rates for each city category. Metropolitan regions had the highest increase in unemployment rates (12.6 percent points), but in all cities, the percentage of unemployed population increased significantly in the 1990s.

**Table 3.III:** Unemployment Rates across City Classes 1991 and 2000

Cities	Population Size	1991			2000			91/00 % Change
		EAP*	Employed	% Unemp	EAP*	Employed	% Unemp	
<b>small</b>	up to 20,000 hab,	992,862	969,115	2.4	1,295,205	1,134,161	12.4	10.0
<b>small-medium</b>	> 20,000 ≤ 100,000	2,062,976	1,997,156	3.2	2,622,740	2,237,246	14.7	11.5
	> 100,000 ≤ 200,000	887,521	851,356	4.1	1,196,966	1,010,135	15.6	11.5
<b>medium</b>	> 200,000 ≤ 400,000	1,015,563	969,840	4.5	1,345,595	1,141,359	15.2	10.7
	> 400,000 ≤ 600,000	287,627	272,752	5.2	419,054	352,425	15.9	10.7
<b>large-medium</b>	> 600,000 ≤ 800,000	956,948	908,370	5.1	1,357,354	1,138,128	16.2	11.1
	> 800,000 ≤ 1,000,000	-	-	-	-	-	-	-
<b>metropolitan regions</b>		8,282,784	7,726,009	6.7	10,861,123	8,761,040	19.3	12.6

\* EAP = Economically Active Population

*Source:* IPEAData (População Economicamente Ativa e População Ocupada)  
Elaborated by the author  
March, 2011

It is interesting also to note that production's dispersion was accompanied by a significant increase of employment in the service, commerce, and construction sectors. As show by Table 3.IV, the group of small cities accounted for the largest growth rates in all economic sectors. Employment in agriculture was further concentrated in small cities statewide. Employment in agriculture decreased in large–medium cities, slightly increased in metropolitan regions (probably due agriculture production on edge cities in the Campinas and Santos area). However, medium, large–medium, and metropolitan regions decreased their participation in the state total agriculture employment. In 1991, small cities accounted for 25 percent of the state agriculture employments, in 2000 they accounted for 32 percent. As a matter of fact, the economic participation of small cities in all sectors increased during the 1990s (see Table 3.V). Employment in industrial production decreased in metropolitan regions, large–medium, and medium cities, suggesting that in the 1990s industries dispersed in the state.

**Table 3.IV:** Employment Growth Rate by Sector among City Classes 1991 and 2000

Cities/Classification		% Growth Rate 91/00		
		Primary	Secondary	Tertiary
<b>small</b>	<b>up to 20,000 hab</b>	235	28	66
<b>small-medium</b>	<b>&gt;20,000 ≤ 100,000</b>	132	2	28
	<b>&gt; 100,000 ≤ 200,000</b>	120	4	31
<b>medium</b>	<b>&gt;200,000 ≤ 400,000</b>	65	-9	52
	<b>&gt; 400,000 ≤ 600,000</b>	190	-3	41
<b>large-medium</b>	<b>&gt; 600,000 ≤ 800,000</b>	-23	-11	47
	<b>&gt; 800,000 ≤ 1,000,000</b>			
<b>metropolitan regions</b>		74	-31	28
<b>Total State</b>		<b>142</b>	<b>-20</b>	<b>31</b>

OBS: Primary Sector: agriculture; Secondary Sector: Industry; Tertiary Sector: Commerce, Construction, and Services

Source: SEADE,  
Elaborated by the author  
March, 2011

Table 3.IV shows in more detail the participation of each city class in the economy of the state. As noted before, small cities increased their participation in all sectors (except for service which remained constant). On the other side of the urban hierarchy, metropolitan regions have decreased their participation on the state's economy. Large-medium cities increased their participation in service employment, suggesting that their service base is becoming more diversified and their role as regional nodes is becoming further emphasized. Employment in construction increased significantly in medium cities, in line with the significant population growth, since more people means more infrastructure, housing, roads, etc.

To a certain extent, between 1990 and 2000, industries seem to be deconcentrating. Contrary to previous decades, the share of employment in industry increased in small and medium cities and decreased in metropolitan regions. Actually, the participation of all cities in terms of formal employment increased, as opposed to metropolitan regions. In industry, the most significant increase in employment was within cities in the 20,000 and 100,000 inhabitants range (3 percent increase). At the same time, large-medium cities showed a decrease in terms of employment in agriculture and industry, but a significant increase in services, commerce, and construction – this suggests that those cities are becoming important regional nodes by developing their service base.

**Table 3.V:** Economic Activities among Cities 1991 and 2000

Cities/Classification		1991											
		Agriculture	% State	Commerce	% State	Construction	% State	Industry	% State	Service	% State	Total	% State
<b>small</b>	<b>up to 20,000 hab</b>	32,226	24.90	27,691	2.96	5,580	1.76	91,280	3.76	111,865	3.53	287,166	3.77
<b>small-medium</b>	<b>&gt;20,000 &lt; 100,000</b>	54,008	41.73	104,350	11.16	21,265	6.69	247,954	10.21	276,682	8.73	764,197	10.02
	<b>&gt; 100,000 &lt; 200,000</b>	16,673	12.88	55,910	5.98	14,677	4.62	137,778	5.67	126,206	3.98	375,246	4.92
<b>medium</b>	<b>&gt;200,000 &lt;400,000</b>	8,053	6.22	77,523	8.29	16,621	5.23	190,242	7.83	150,939	4.76	491,972	6.45
	<b>&gt; 400,000 &lt; 600,000</b>	389	0.30	24,925	2.67	7,095	2.23	48,616	2.00	49,209	1.55	142,255	1.87
<b>large-medium</b>	<b>&gt; 600,000 &lt; 800,000</b>	3,093	2.39	33,528	3.59	8,628	2.71	65,479	2.70	75,062	2.37	207,555	2.72
	<b>&gt; 800,000 &lt; 1,000,000</b>												
<b>metropolitan regions</b>		14,978	11.57	610,946	65.35	243,947	76.76	1,647,397	67.83	2,378,344	75.07	5,357,552	70.25
<b>Total State</b>		129,420	100	934,873	100	317,813	100	2,428,746	100	3,168,307	100	7,625,943	100
Cities/Classification		2000											
		Agriculture	% State	Commerce	% State	Construction	% State	Industry	% State	Service	% State	Total	% State
<b>small</b>	<b>up to 20,000 hab</b>	107,856	34.47	49,113	3.72	7,896	1.76	117,123	6.05	183,597	4.40	465,585	5.78
<b>small-medium</b>	<b>&gt;20,000 &lt; 100,000</b>	125,516	40.12	155,245	11.76	22,072	6.69	252,947	13.08	339,351	8.13	895,131	11.12
	<b>&gt; 100,000 &lt; 200,000</b>	36,692	11.73	83,335	6.31	15,329	4.62	143,245	7.40	158,737	3.80	437,338	5.43
<b>medium</b>	<b>&gt;200,000 &lt;400,000</b>	13,254	4.24	112,895	8.55	25,089	5.23	173,331	8.96	233,525	5.60	558,094	6.93
	<b>&gt; 400,000 &lt; 600,000</b>	1,130	0.36	40,070	3.03	8,103	2.23	47,085	2.43	66,621	1.60	163,009	2.03
<b>large-medium</b>	<b>&gt; 600,000 &lt; 800,000</b>	2,376	0.76	51,738	3.92	10,541	2.71	58,250	3.01	109,904	2.63	232,809	2.89
	<b>&gt; 800,000 &lt; 1,000,000</b>												
<b>metropolitan regions</b>		26,048	8.33	828,000	62.71	219,891	76.76	1,142,586	59.06	3,080,722	73.83	5,297,247	65.81
<b>Total State</b>		312,872	100	1,320,396	100	308,921	100	1,934,567	100	4,172,457	100	8,049,213	100

Source: SEADE,  
Elaborated by the author  
March, 2011

### 3.1.4 Income and Education Inequality among Cities

Overall, the 1990s was marked by a significant decrease of low income households in the state of São Paulo, but an increase of absolute poverty, which was followed by increase in earnings in the state as a whole (Table 3.VI). The census in Brazil collects data on income by brackets. For the ease of the analysis the ten original brackets are grouped into four following Torres (2004). Traditionally, low/medium/high classes are determined based on this subdivision, low-income households being those with up to three minimum wages per month; medium-income between three and ten; and high-income households with earnings above than ten monthly minimum wages.

Two factors might explain the increase in the percentage of households with no income: increase in absolute poverty statewide and changes in the census questionnaire. In 1991 the census considered those with “no income” and “no declaration” under distinct categories; however, in 2000 the “no declaration” category was dismissed. Among city classes, metropolitan regions and small-

**Table 3.VI:** % of Households by Income Brackets among Cities- 1991 and 2000

YEAR 1991			% of Households by Income Brackets			
			No Income	up to 3	> 3 and ≤ 10	> 10
N° of Minimum Monthly Wages						
<b>small</b>	up to 20,000 hab	3.20	75.56	17.58	3.67	
<b>small-medium</b>	> 20,000 ≤ 100,000	3.72	64.14	26.04	6.11	
	>100,000 ≤ 200,000	4.18	56.22	31.77	7.83	
<b>medium</b>	>200,000 ≤ 400,000	5.36	48.49	35.62	10.53	
	>400,000 ≤ 600,000	3.23	46.61	38.20	11.96	
<b>large-medium</b>	>600,000 ≤ 800,000	4.02	40.91	39.88	15.19	
	>800,000 ≤ 1,000,000	-	-	-	-	
<b>metropolitan regions</b>		0.00	40.81	38.30	14.76	
<b>Total State</b>			<b>5.26</b>	<b>48.52</b>	<b>34.37</b>	<b>11.85</b>

YEAR 2000			% of Households by Income Brackets			
			No Income	up to 3	> 3 and ≤ 10	> 10
N° of Minimum Monthly Wages						
<b>small</b>	up to 20,000 hab	6.04	62.40	26.22	5.34	
<b>small-medium</b>	> 20,000 ≤ 100,000	6.42	49.86	34.92	8.79	
	>100,000 ≤ 200,000	6.18	41.58	40.68	11.56	
<b>medium</b>	>200,000 ≤ 400,000	5.77	36.42	42.94	14.88	
	>400,000 ≤ 600,000	6.14	34.04	43.80	16.02	
<b>large-medium</b>	>600,000 ≤ 800,000	6.49	32.58	43.73	17.20	
	>800,000 ≤ 1,000,000	-	-	-	-	
<b>metropolitan regions</b>		10.85	32.25	40.14	16.76	
<b>Total State</b>			<b>8.81</b>	<b>37.84</b>	<b>38.97</b>	<b>14.38</b>

Source: IBGE  
Elaborated by the author  
March, 2011

medium cities behaved in the same way. That is, the percentage of low income households decreased in all city categories. Accordingly, the percentage of medium and high income households increased.

The “size” of each income class varies with city size. The proportion of low income households decreases as city size increases, and the size of high income class increase as city size increases. In conclusion, in smaller cities the proportion of low income population tends to be larger than in metropolitan and medium cities. Overall, middle income classes correspond to 40 percent of the population in medium cities, which has not varied significantly between 1991 and 2000.

If on the one hand we saw an increase in poverty and a decrease in the proportion of low income households in metropolitan regions, on the other hand the gap between the rich and the poor increased (i.e. inequality) between 1991 and 2000 in metropolitan regions. As to the other city sizes categories, inequality decreased when measured with the Gini Index (Table 3.VII). In 1991, the largest urban areas (large–medium and metropolitan) were less unequal than small and small medium cities. However, in 2000, medium cities became less unequal when compared to small cities and metropolitan regions. Meanwhile, large–medium cities did not vary significantly. In 1991 and in 2000, small cities were the most unequal in terms of wealth distribution.

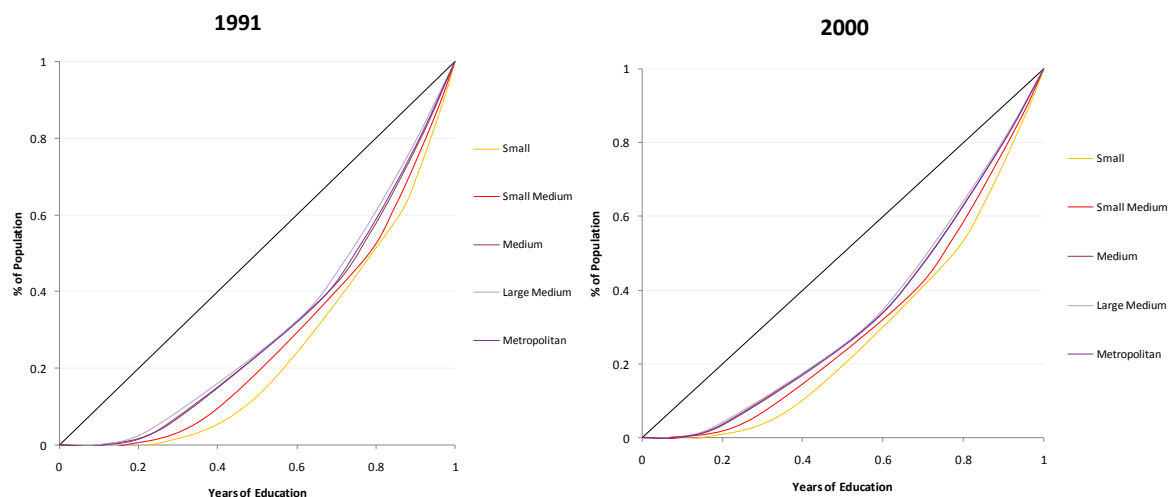
In terms of education attainment, inequality is even more evident. Although throughout the 1990s, the percentage of population with low education attainment decreased significantly in cities statewide, the gap between those with few years of education and more years of education was still very evident by 2000. Figure 3.IV below shows the Lorenz Curve for education attainment. It is clear that years of education increase with city size, that is, in larger urban centers households have more years of education than in small cities.

**Table 3.VII:** Gini Index for Income Share - 1991 and 2000

City Size	Population	Gini Income Index	
		1991	2000
<b>small</b>	up to 20,000 hab	0.526	0.524
<b>small-medium</b>	> 20,000 ≤ 200,000	0.517	0.508
<b>medium</b>	>200,000 ≤ 600,000	0.501	0.483
<b>large-medium</b>	>600,000 ≤ 1,000,000	0.488	0.480
<b>metropolitan regions</b>		0.498	0.513

*Source:* calculated by the author based on data of IBGE Census 1991 and 2000  
 Elaborated by the author  
 March, 2011

**Figure 3.IV: Educational Attainment Lorenz Curve - 1991 and 2000**



*Source:* calculated by the author based on data of IBGE Census 1991 and 2000  
 Elaborated by the author  
 March, 2011

### 3.1.5 Final Remarks

In sum, the 1990s the state of Sao Paulo was marked by intense urbanization for cities of all sizes, especially in small–medium and small cities which still had a significant rural population by 1990. Medium cities now have the same urbanization rates as metropolitan areas, and soon the state will be almost entirely urbanized.

Statewide, the population living in absolute poverty increased in the 1990s by 1.5 percentage. However, cities with high and very low poverty rates decreased in the period, suggesting that cities are becoming alike in terms of absolute poverty rates. The greatest increase in absolute poverty happened in metropolitan regions, followed by medium and large–medium cities – that suggests that absolute poverty is becoming concentrated in large urban centers in the state. Poverty does not seem to be correlated to migration, as the highest rates of migration happens in urban centers located along state highways, and not in cities with high incidence of poverty.

Industry has spread its employment opportunities towards the hinterland in the 1990s. Employment in agriculture has become more concentrated in small cities while medium, large–

medium and metropolitan regions saw a significant increase in services, commerce and construction. With the exception of metropolitan regions, overall, all cities increased their participation in the state's total formal employment.

And finally, the percentage of low income households decreased in all city categories while the percentage of middle and high income households increased. Although the number of low-income households decreased, the gaps between rich/poor and educated/non-educated are still very significant. Medium and large-medium cities are less unequal than metropolitan regions and small cities in terms of wealth concentration.

In sum, we see that in the 1990s, medium cities were urbanizing fast, population growth was significant, the tertiary sector became a major source of employment, and poverty increased but medium cities seem to be less unequal than metropolitan and small cities (as shown by the GINI Index). How are those trends identified at the city level, and how have they affected the intra-urban space? The research strategy adopted to answer that question is the in-depth descriptive analysis of a case study. The next section presents the spatial analysis of the city of Ribeirão Preto.

### 3.2 Urban Inequality and Segregation – A Comparative Spatial Perspective

In order to describe patterns, causes, and consequences of social urban models, measures of urban segregation are necessary. Urban segregation, specifically urban *residential* segregation in this thesis, is defined as “the degree to which two or more groups live separately from one another, in different parts of the urban environment” (Massey & Denton, 1988, p.282). Therefore, socioeconomic segregation is considered to be the degree of separation “between residences of the lower class and the residences of the middle and upper classes ... from one another in different neighborhoods of the city” (Flores, 2009).

Several methods and indices are available to calculate the intensity and map the pattern of urban segregation. Because groups live apart from one another in a variety of ways, those methods and indices vary according to which “dimension” of segregation is being measured. To account for the many ways groups are segregated from one another, Massey and Denton (1988) classify the key dimensions of segregation: evenness, exposure, concentration, centralization, and clustering. For the purpose of this thesis’ analysis, evenness and clustering are used.

The evenness dimension compares the differential of spatial distribution of two groups among the areas of a city. The most widely used measure is the Dissimilarity Index which measures the percentage of a certain group that would have to change “their area of residence to achieve an even distribution” (ibid., p.284). Often the dissimilarity index is computed alongside measure of exposure which accounts “for the degree of potential contact, or possibility of interaction, between minority and majority group members (ibid., 287). That is, this index is dependent upon the extent to which two groups share common residential areas and is described as the probability of a member from one group to interact with a member from another group (Massey & Denton, 1988). A value of 1 indicates complete isolation (homogeneity) and a 0 indicates non-segregation (heterogeneity).

As put by Flores (2009), the dissimilarity index is a “simple and straightforward measure [of evenness which is] relevant in the case of Latin America cities” (p.27). It ranges from 0 to 1, where 0 means no segregation and 1 means perfect segregation. However, this index does not identify patterns of population, that is, it does not identify which areal units are segregated and which are not segregated. The dissimilarity and the isolation indices are global and nonspatial measures. They express different dimensions of segregation of the city as a whole and do not account for intra-urban variation. But to compare how groups are segregated between two different cities, the dissimilarity and the isolation indices are useful for descriptive and comparative purposes. These are the indices I



use to compare the degree of segregation of income brackets, between Ribeirão Preto and the São Paulo Metropolitan Region (SPRM), during the 1990s.

In order to analyze and compare patterns of intra–urban segregation, that is, which area of the each study area is more or less segregated, I compare the spatial local and global indices of segregation. The goal is to measure and to locate clustering, defined as the “extent to which areal units inhabited by a particular group adjoin one another in space” that is, “which neighborhoods belong to a cluster of poverty, which neighborhoods are segregated in terms of clustering, and which neighborhoods are not segregated” (ibid., p. 26–27).

I first conduct an exploratory analysis of densities in order to find concentrations of poor and rich households in Ribeirão Preto and SPMR during the 1990s. Second, I compute clusters and identify global measures of spatial segregation for each area.

Finally, to further characterize intra–urban segregation in Ribeirão Preto, and see how segregation is correlated to different variables such as education and the existence of gated communities I construct a spatial lagged model. All the analysis is performed in a GIS environment (ESRI) and uses the software suites R and GeoDa.

The next section (3.2.1) presents the comparative analysis of segregation measured by aspatial indexes. I show that, although Ribeirão Preto and SPMR are very different in population size and medium cities tend to be less unequal than metropolitan regions, they have similar spatial segregation levels. The following section (3.2.2) presents an exploratory analysis of density in order to identify indicators of spatial segregation.

Section 3.2.3 measures and identifies spatial segregation within each study area. Finally, the last section will further explores intra–urban pattern in Ribeirão Preto through a spatially lagged model. I analyze variables that might affect the segregation of low and high income households in the city.

### 3.2.1 Segregation in Ribeirão Preto and São Paulo – Different Sizes but Similar Segregation Levels

Figures 3.V and 3.VI display the maps of Ribeirão Preto and São Paulo to illustrate their respective urban scenarios. Ribeirão Preto is located 300 km from the state capital. The total population in 2011 is estimated to be 615,576 inhabitants (SEADE). Its GDP accounts for 1 percent of the state's total and 50 percent of the city's formal employment is in the service sector (SEADE). Between 1991 and 2000, demographic density in Ribeirão Preto grew 89 percent, whereas, in the SPMR density increased 16 percent (SEADE).

According to the United Nation Development Program (UNDP), Ribeirão Preto's Human Development Index (HDI) in 1991 was 0.822 and increased to 0.855 in 2000.<sup>25</sup> During the same period, the HDI in the SPMR increased from 0.792 to 0.828 (UNDP). The SPMR has almost 20 million inhabitants (SEADE) and 59 percent is of the total employment is in the service sector. Both regions possessed the same trend in formal employment: decreases in agriculture, construction, and industry and increases in commerce and services (SEADE). Also, both urban areas present HDI considered very high by UNDP and higher than Brazil's HDI, which was 0.649 in 2000.

In Ribeirão Preto in 2000, 96 percent of housing had adequate urban infrastructure (e.g. access to piped water, electricity, garbage collection, and sewage system). Adequate housing in the SPMR represented 86 percent of the region's total housing units (SEADE) in 2000. Although access to infrastructure, health, and education is not a pressing issue in these two urban areas (expressed by the HDI and by the proportion of adequate housing units), I argue that income groups experience different degrees and dimensions of spatial segregation.

Table 3.VIII displays both the dissimilarity and the isolation indices for the two regions. These are calculated between low/non-low, medium/non-medium, and high/non-high income classes at the city level. These indices measure the “extent to which paired groups deviate from each other in their distribution across census tracts” (Telles, 1995, p. 1208). The income brackets are the same used in section 3.1.4: low-income are those households with earnings up to three minimum wages per month, middle-income households' earnings between three and ten minimum wages, and the high-income households' earnings above ten minimum wages.

---

<sup>25</sup> HDI data from the PNUD Brazil: [www.pnud.org](http://www.pnud.org) downloaded on April, 2011. The HDI is an index constructed to capture and measure improvements in educational, health and economic aspects across countries.

**Table 3.VIII:** 1991 and 2000 Dissimilarity and Isolation Index by Income – Ribeirão Preto and São Paulo Metro Region

	Income Classes	1991			2000		
		%Pop	Diss Index	ISO Index	%Pop	Diss Index	ISO Index
<b>Ribeirao Preto</b>	<b>Low</b>	43.65	0.31	0.49	35.66	0.35	0.54
	<b>Middle</b>	40.97	0.16	0.57	44.70	0.20	0.52
	<b>High</b>	15.38	0.54	0.56	19.64	0.54	0.56
<b>São Paulo Metropolitan Region</b>	<b>Low</b>	46.50	0.31	0.55	43.59	0.35	0.53
	<b>Middle</b>	38.22	0.19	0.42	39.42	0.20	0.28
	<b>High</b>	15.28	0.51	0.37	16.99	0.56	0.42

*Source:* calculated by the author based on data of IBGE Census 1991 and 2000  
Elaborated by the author

The rule of thumb states that values of dissimilarity above 0.60 are considered high, under 0.30 are low, and values between 0.30 and 0.60 are considered moderate levels of segregation (Massey & Denton, 1988). In Ribeirão Preto, the main tendency in the 1990s was that of increasing segregation of low- and middle-households (from 0.31 to 0.35) when measure by the Dissimilarity Index. High-income household's level of segregation did not change over that period but is still significant, 0.54 – that is, 54 percent of the high-income households would have to move from one area of the city to another to make the distribution of the population (high and non-high) even across the city. Middle-income classes have low levels of segregation in both regions (Dissimilarity Index), and high income households are slightly more segregated in the metropolitan region than in Ribeirão Preto.

The index of isolation in Ribeirão Preto only the low-income isolation index increased in the 1990s, from 0.49 to 0.54. That is, the probability that a low income household shares the same census tract with another low income increased by 5 percent points – low-income became more isolated (segregated). That is not the case in the SPMR, within this urban region, low income became less isolated (from 0.55 to 0.53). However, high income households in the SPMR became more isolated (from 0.37 to 0.42) whereas in Ribeirão Preto they maintained their level of isolation between 1990 and 2000. The middle and the high-income classes decreased segregation in terms of isolation. In the SPMR only the high-income households increased both segregation indices.

However, as measured by the dissimilarity index, it can be argued that Ribeirão Preto and the SPMR share similar characteristics by the end of the 1990s for the low- and high-income (Table 3.VIII).

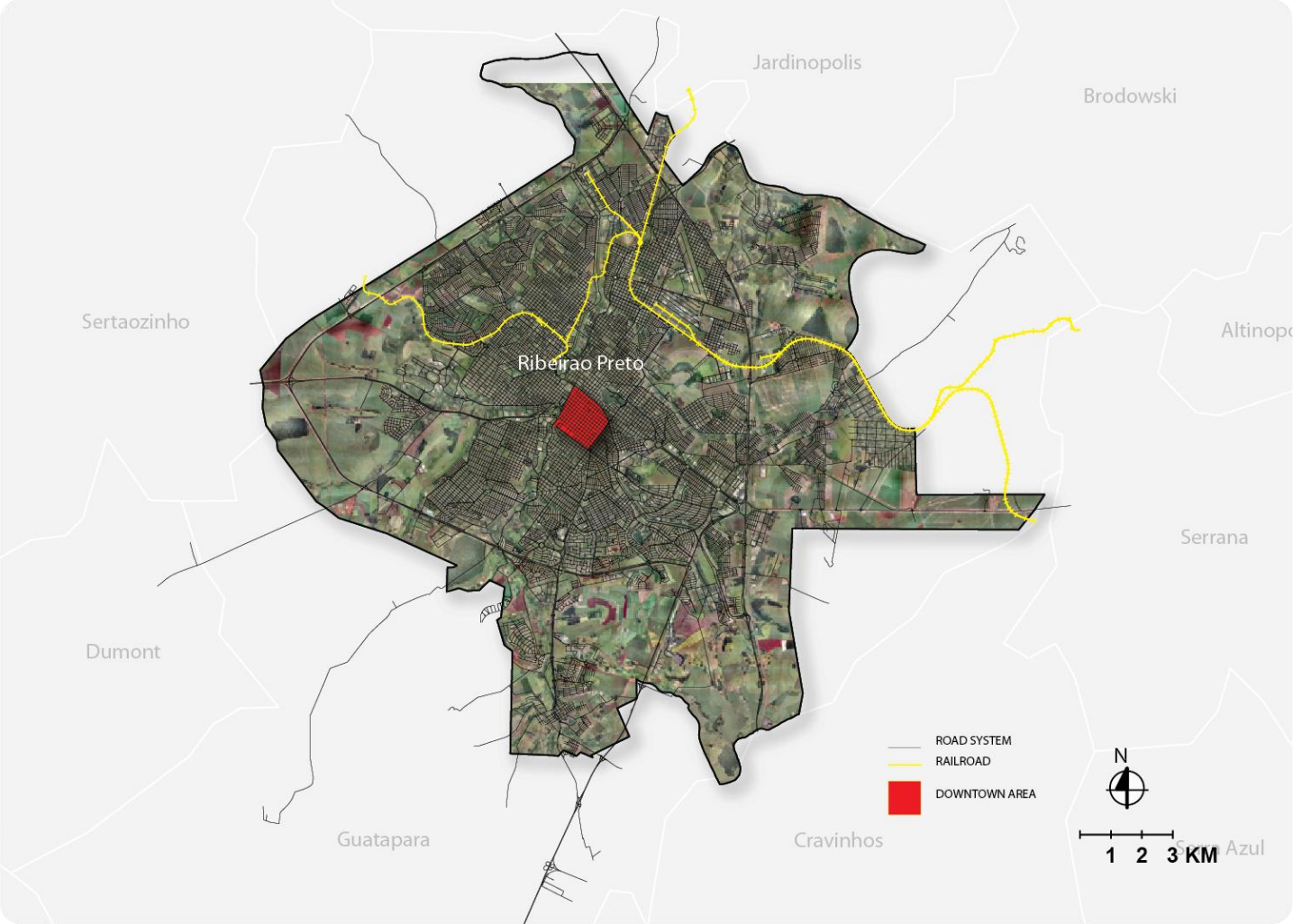
It should be noted that segregation indices do not take into consideration the existence of walls and fortified apparatus when measuring residential segregation. Indices only take into consideration how even a population is distributed across a region, and that is probably why none of the calculations displayed by Table 3.VIII are not within the range considered high (above 0.60) despite the fact that the most of the population live very segregated. This is one qualitative characteristic of spatial segregation that has to be mentioned. Living in a mixed census tract does not mean living in a non-segregated tract, especially in Brazil where mixed can actually signify the very opposite. As eloquently stated by Caldeira (2000), justified by “the fear of crime and the production of stereotypes of dangerous others (the poor for example)” high- and medium-income classes built fortified enclaves (p.331). This new urban form “has deep consequences for the way in which public space and public interactions are shaped” (p.331).

In short, in Ribeirão Preto, low-income became more segregated while high-income households did not change their level of segregation. In the metropolitan region of Sao Paulo, on the other side, low- and high-income households became more segregated<sup>26</sup> (as Dissimilarity Index). The next section looks first at the main spatial pattern of residential segregation by income groups in Ribeirão Preto as compared to the SPMR. Second, it quantifies and explores variables of the existing segregation by the end of the 20<sup>th</sup> Century in Ribeirão Preto.

---

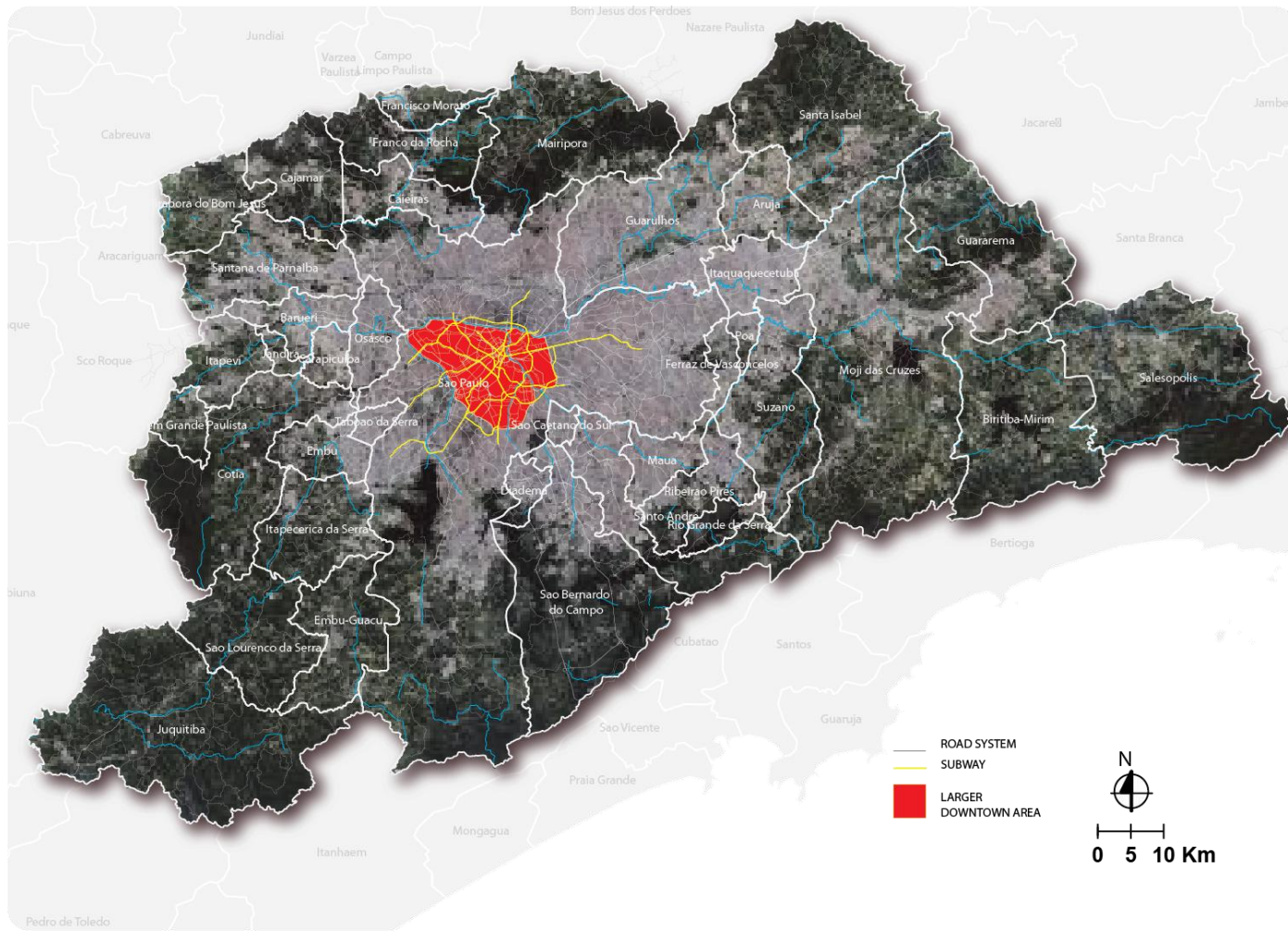
<sup>26</sup> The change in the isolation index for low income in the SPMR is probably due to the reduction of the low-income population, given that this index is sensitive to the overall number of low income households.

Figure 3.V: Ribeirão Preto, SP – Brazil



Source: IBGE, CODERP, Ribeirão Preto Planning Department  
Elaborated by the author  
May, 2011

Figure 3.VI: São Paulo Metropolitan Region, SP – Brazil



Source: IBGE, CEM, GoogleEarth  
 Elaborated by the author  
 May, 2011

### 3.2.2 Spatial Segregation: Quantities and Patterns

I have shown that, quantitatively, segregation at city level is similar in Ribeirão Preto and in SPMR for the low- and high-income groups. I now turn to the spatial distribution of such segregation. This section seeks to identify and quantify the main pattern of concentration (segregation) of households by income classes through the analysis of density/concentration/clusters of income groups. I look specifically at the low- and high-income groups since the citywide measure of dissimilarity have show that middle-class, households tend to be less segregated, suggesting that they are more evenly spread within each area.

Since my main goal is to “model” urban segregation, that is, to represent graphically how income groups are distributed across city areas I look at significant concentration of low- and high-income households in Ribeirão Preto and SPMR. The analysis is sequenced in three phases:

- **Exploration:** I explore overall indicators of concentration of high- and low-households based on simple density analysis of the absolute number of households. The goal is to see if there is any indication of higher densities of low- and high-income households in certain regions across each study area;
- **Validation:** this part of the analysis validates the primary findings of the exploratory analysis. That is, do regions with high levels of low- and high-income households have significant clusters in terms of dissimilarity? Alternatively, the concentration of census tracts with high dissimilarity values dependent on values at neighboring locations?
- **Explanation:** given the scenario described by the exploratory and the validation phases I explore how different variables affect the pattern of segregation in Ribeirão Preto.

- **EXPLORATION – HOUSEHOLD DENSITY ANALYSIS**

To identify where low- and high-income groups tend to be disproportionately concentrated (and therefore segregated), I first calculated density estimations in a Geographic Information System (GIS) environment <sup>27</sup>.

I first created a point shapefile from population census tracts, in which points represent density of households in 1990 and 2000 for each urban area. In the SPMR, each point represents 20 households classified as low-, middle- and high-income households. In Ribeirão Preto, each point corresponds to five households of each income class. Based on the number of household, by income group, points were assigned to census tracts using the suite R, a software for statistics analysis. I then calculated densities in ArcInfo (ESRI) using the Kernel estimation tool.<sup>28</sup>

Figure 3.VII displays density maps for households by income in Ribeirão Preto and in SPMR in 1990 and 2000. Red dark areas indicate areas with high densities of high-income households, blue dark areas indicate regions with high densities of low-income households. The main characteristic that jumps out of this first exploratory analysis is that Ribeirão Preto and SPMR have very distinct urban forms by income classes. Densities indicate that the city of Ribeirão Preto is heavily structured into axes, one at the northeastern side (where high densities of low-income seem to be located) and one at the southeastern side (where high-income households seem to be more concentrated). The SPMR's urban form is very different from that axial structure. The metropolitan regions still holds pattern of the center-periphery structure, with low-income concentrated at the out regions and the high-income in the main central area of the region.

Between 1991 and 2000 little has changed in Ribeirão Preto. The main dichotomy “rich area vs. poor area” is maintained. However, in São Paulo we see indications of changes. Although the main characteristic is still one of sequential rings, a more fragmented development, that is, “bubbles of rich” among “bubbles of poor” can be observed (east and southwest). Based on simple density analysis we see that low- and high-household seem to be concentrated in one or other area across both urban

---

<sup>27</sup> I did “eye checked” the resulting point shapefiles for inconsistency such as points being assigned to places where nobody lives such as lakes and rivers. These maps were generated based on Bill Ranks density maps found at [www.radicalcartography.net](http://www.radicalcartography.net).

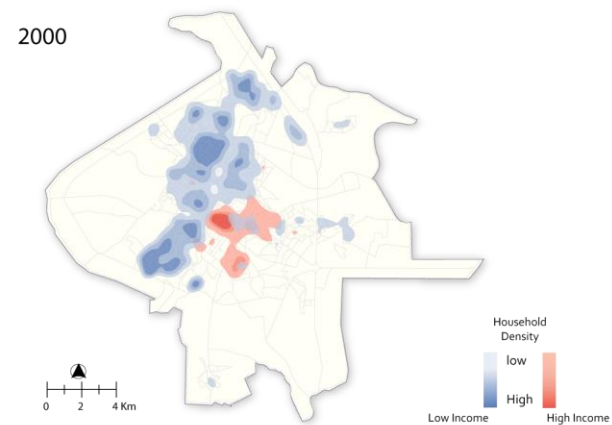
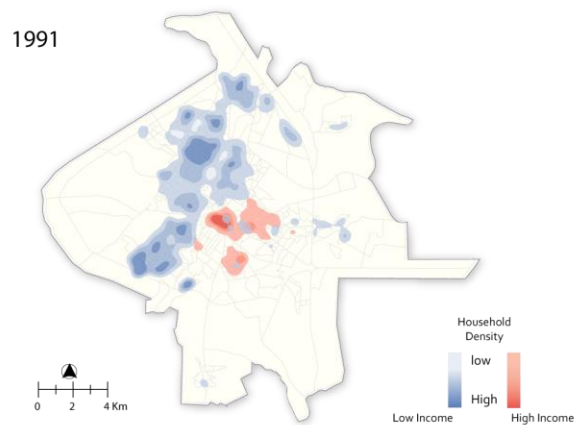
<sup>28</sup> I do recognize the limits of representing events as dots density. For instance, Walter & Gotway (2004) do not recommend the use of dot density for public health application because of the “visual temptation” to interpret dots as the actual location of events. However, for the purpose of illustrating population distribution, this approach revealed to be plausible due to two aspects. First, when dots are assigned within census tracts, they are contained by relatively small boundaries within the city's highest density areas and are very close to their real location. Second, by representing household by points (as opposed to areal units) followed by a Kernel estimation to construct a trend surface map, the incompatibility between the 1991 and the 2000 Census modified boundaries are diminished for the sake of representation. Also this method takes into consideration the fact that household distribution does not respect stark boundaries such as census tracts.



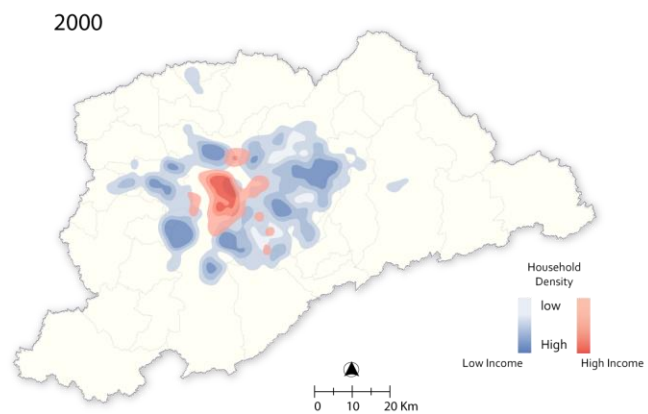
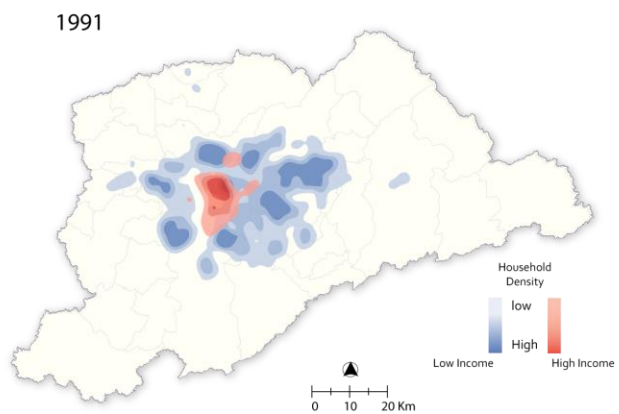
regions. But do these areas of high density characterize significant clusters of low- and high- households, or these are just the result of random events? The next section further explores the significance of these clusters suggested by density based on the analysis of global and local indicators of spatial association (LISA). These are the most used indicators to evaluate the existence of clusters of a specific variable in the spatial distribution across a study area. For the local and global spatial indices, my variable of interest is the concentration of census tracts with high values of dissimilarity for high- and low- income households.

**Figure 3.VII:** Ribeirão Preto and the São Paulo Metropolitan Region: Density Estimation of Low- and High-Income Households 1991 and 2000

Ribeirão Preto



São Paulo Metropolitan Region



Source: IBGE Census 1991 and 2000  
Elaborated by the author  
May, 2011

- **VALIDATION – SPATIAL AUTOCORRELATION, THE GLOBAL AND LOCAL INDICATORS OF SPATIAL SEGREGATION**

Table 3.IX shows the Global Moran's  $I$  measured for 1991 and 2000 for the percentage of low and high income households by census tract. Given that for all situations Moran's  $I$  is significant, local indicators of spatial correlation (LISA) statistics are used to identify clusters of low and high income households in each urban area for 1991 and 2000 (see Figures 3.VIII and 3.IX).

Global Moran's  $I$  is used to measure "the degree to which the socioeconomic characteristics in any given neighborhood are similar to those in the contiguous neighborhoods" (Flores & Wilson, 2009). This measure assumes that near observations (in this case, dissimilarity values) are more related (similar) than distant things. Values of Moran's  $I$  range from  $-1$  to  $+1$  indicating perfect dispersion and perfect correlation respectively, and  $0$  indicates the random distribution of the variable under analysis. High values of Moran's  $I$  (above  $0.3$  or  $-0.3$ ) indicate strong spatial autocorrelation. That is, positive values indicate the clustering of similar values across the study area. Negative values indicate that neighboring values are more dissimilar than expected.

As shown by Table 3.IX, based on the Global Moran's  $I$ , the distribution of low- and high-income households are positively correlated in space –location are not by chance; they are spatially dependent. Or simply, low- and high-income households are clustered in Ribeirão Preto and the SPMR. Moreover, clustering of low-income households increased in both study areas, whereas high-income clustering has increased in SPMR and decreased in Ribeirão Preto. The decrease of clustering in Ribeirão Preto of high income households might be related to the fact that in the 1990s, fourteen

**Table 3.IX:** 1991 and 2000 Global Moran's  $I$  – Ribeirão Preto and São Paulo Metro Region\*

	Low Income		High Income	
	1991	2000	1991	2000
<b>Ribeirão Preto</b>	0.549	0.551	0.72	0.601
<b>SPMR</b>	0.45	0.654	0.75	0.781

\* Calculated in GeoDa (Weight Matrix: Queen Contiguity)  
 Source: calculated by the author based on data of IBGE Census 1991 and 2000  
 Elaborated by the author  
 May, 2011

gated communities were constructed in the city according to the maps provided by the City Planning Department. This is a lot compared to the previous decade when only two were constructed along with 13 public housing projects. Since new developments of gated community takes up a considerable amount of land, the population living in those housing tend to spread and be in proximity to low income households out decreasing clustering. It is also worth noting that in 1991, the low population tended to be less segregated than in the SPMR, by 2000 that figure reversed, low income was more segregated in the SPMR.

Once the Global Moran's *I* is calculated and spatial correlation is identified, I use Local Moran's *I* to identify where within each study areas segregated areas for high- and low-income households across census tracts can be identified.

Figures 3.VIII and 3.IX show maps displaying local indicators (LISA) by census tract in 1991 and 2000 in Ribeirão Preto and in the SPMR respectively. In these maps, dark red areas identify clusters statistically significant of low- and high-income households respectively. These results corroborates with the findings of the exploratory analysis on densities described in the previous section.

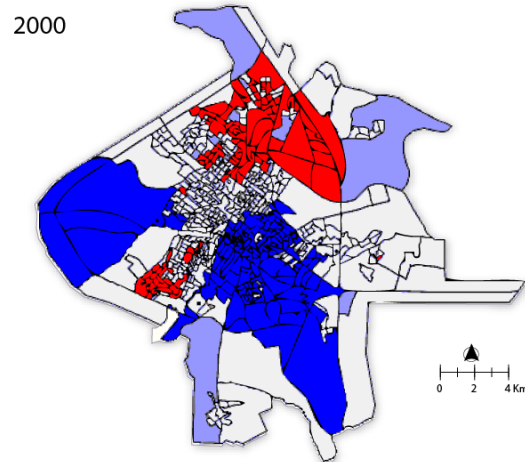
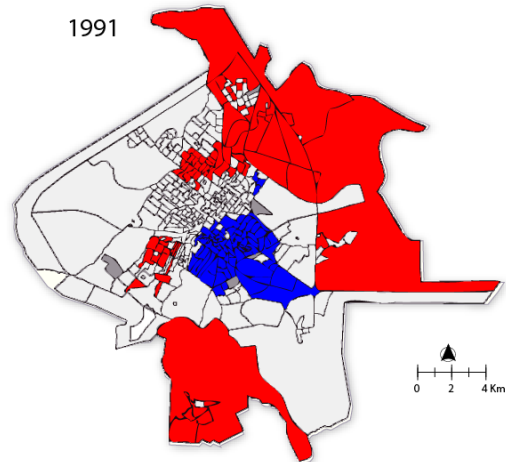
In Ribeirão Preto, the main tendency in the 1990s was the intensification of a split city. Segregated areas of low-income household are located mainly in the northwest region while segregated areas of high-income households are located in the opposite direction (the southeast).

However, in the SPMR, segregated areas of high-income households seem to have spread out (towards northeast and east regions and south) while clusters of low-income households became more fragmented across the region. That is, based on spatial indicators, low- and high-income households are indeed living in a more fragmented and in closer proximity as noted by Caldeira (2000) and Borsdorf & Hidalgo (2005-2009).

The next step of the analysis, seeks to further characterize segregation only in Ribeirão Preto. I construct a regression, attempting to identify possible variables affecting the rates of segregated areas within the city by 2000.

**Figure 3.VIII:** Ribeirão Preto LISA Maps 1991 and 2000

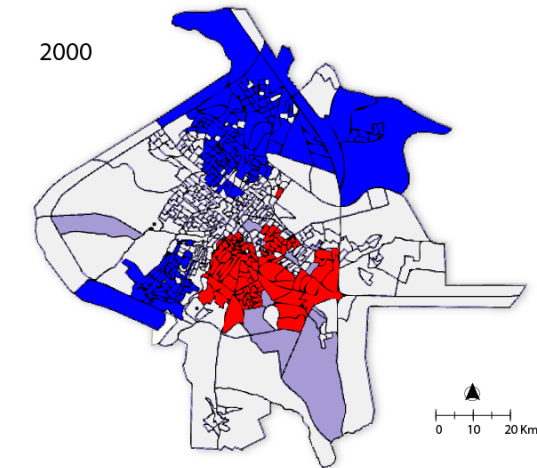
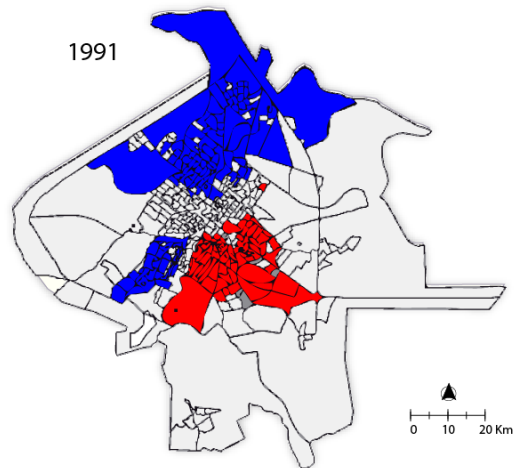
Low Income Households



Local Moran's I Results (LISA)  
Numbers of Low and High  
Income Households

- Not Significant
- High - High
- Low - Low
- Low - High
- High - Low
- Neighborless

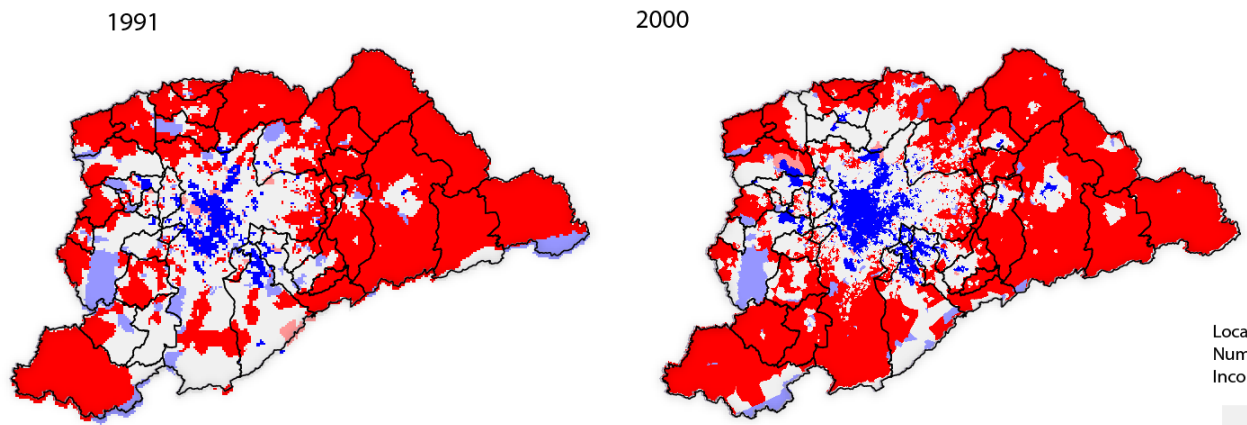
High Income Households



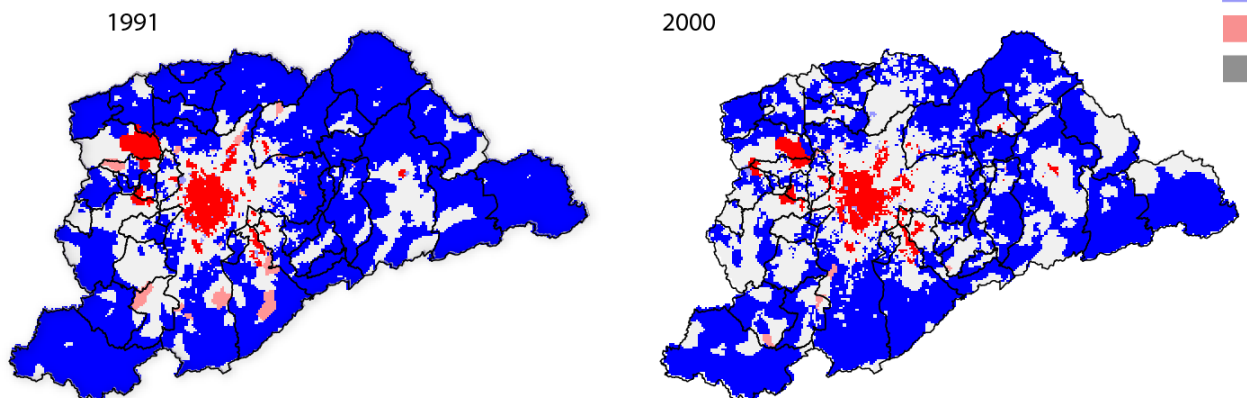
Source: IBGE Census 1991 and 2000  
Elaborated by the author  
May, 2011

Figure 3.IX: São Paulo Metropolitan Region LISA Maps 1991 and 2000

Low Income Households



High Income Households



Source: IBGE Census 1991 and 2000  
Elaborated by the author  
May, 2011

- **EXPLANATION – EXPLORING THE CAUSES OF SEGREGATION THROUGH A SPATIALLY LAGGED MODEL**

In order to further characterize intra-urban segregation in Ribeirão Preto by the end of the 1990s, I use statistical methods for studying spatial segregation. I seek to establish a relationship between spatial segregation and independent variables other than the segregation in neighboring tracts. These other variables can be considered “predictors” of segregation.

The dimension of segregation being analyzed here is the dissimilarity across census tracts in 2000. That is, in this section I construct a model which seeks to statistically analyze the relationship between segregation and other variables such as education attainment, existence of public policies (public housing), individual preferences of households (gated community, female household heads, property owners), and demographic characteristics (tract area, number of households, number of housing units).

I identify two additional variables that might be correlated to values of segregation: the location of public housing and gated communities. Public housing aims to provide housing to the underprivileged population and henceforth allocate them in space altogether. Gated community is a manifestation of individual preferences which value living in specific regions of the city to protect themselves from the others. Therefore, these two variables should be taken into consideration when spatial segregation is analyzed in Ribeirão Preto – those are not taken into consideration when global and local index of spatial correlation is computed (previous section). I attempt to explore how much segregation is affected by the construction of public housing and gated communities, which have proliferated in Ribeirão Preto since the 1990s. Between 2000 and 2009, 42 gated condominiums have been approved by the City Planning Department as opposed to four developments of public housing (according to the maps provided by the City Planning Department in CAD format).

To explore the relationship between gated communities, public housing and segregation I construct a multiple regression model to test if high concentrations of households by income in one census tract are influenced by the amount of concentration of households also by income in neighboring tracts. The model constructed attempts to explain the variation of dissimilarity in space. That is, what can explain the variation in the concentration of low- and high-income households within each census tract? The model was run in GeoDa and its details can be found in the Appendix.

Table 3.X shows the output for the regression for two models. The first ignores spatial lag dependence (columns 1 and 3) and is a basic ordinary least square model. The second model

incorporates spatial lag dependence (columns 2 and 4). These models are run for two different dependent variables: dissimilarity index for the low-income household and dissimilarity index for the high-income household.

Overall these models are able to capture approximately more than 34 percent of the variation in segregation (for low- and high-income households). The Moran's *I* statistics calculated using the errors of the regression are very low ( $-0.005$ ) suggesting that all spatial correlation is considered without the necessity of including an additional spatial variable. Nevertheless, columns 2 and 4 corroborate the lack of spatial dependence of the dependent variable; the variable W\_DISS (average value of the dissimilarity of neighboring tracts) is not statistically significant (although it has the same sign of the Moran's *I* error statistics). That is, the segregation value of neighboring tract seems to have no direct impact on the segregation of each tract.

The variables that are correlated with segregation within census tracts in this model are (*p-values*  $< 0.05$  highlighted in the table): public housing in neighboring tracts (W\_PUBLIC), number of gated community in neighboring tracts (W\_GATED), public housing (PUBL\_HOUS), number of households (TOTAL\_RESP), no schooling (NO\_SCHO), number of housing units (DOM), property ownership (PROPR).

Some conclusions can be drawn from these models. First, larger densities decrease segregation. This is seen by the negative effects of total households and number of housing units on the dissimilarity index. It is worth mentioning that AREA is not significant to explain variation in the dissimilarity index. The fact that in higher density areas, low- and high-income households live closer to each other (i.e. more heterogeneous areas) suggests a lower dissimilarity index.

Public housing (PUBL\_HOUS) negatively affects the dissimilarity index and the presence of households with no schooling increases (NO\_SCHOL) the index. That is, the higher the number of public housing within a census tract the lower its segregation index (dissimilarity). That is expected, since the development of public housing settlements within a census tract tend to make it less homogenous. On the other hand, households with no schooling reflects the lack of access to public goods (educational segregation) which results in spatial segregation as well.

It is important to discuss the variables W\_GATED and W\_PUBLIC, which are significant and positive in all models (for low and high income households). Their significance suggests that whenever public housing exists in neighboring tracts, the model predicts an average increase of 0.3 and 0.003 respectively in the dissimilarity index of a given tract.



The positive and significant statistics of those two variables corroborates with the identified clusters of the previous section. The effect of these variables allows us to further clarify the forces behind the existing of low- and high- income clusters. That is, the spatial clustering observed in the previous section might be the result of the presence of public housing and gated communities in neighboring census tracts. In other words, the elevated segregation of a given census tract can be explained by the presence or absence of public housing and gated communities in neighboring tracts.

These results put in perspective the observed segregation of low- and high-income households in Ribeirão Preto. Clusters of low-income individuals are the result of high-income homogenous areas **and** the location of public housing – it is a pull and push situation. The low-income live concentrated in a given area of the city because this is where affordable housing is, and the high-income households are concentrated in other areas, to voluntarily segregated themselves from the poor.

**Table 3.X:** Ordinary Least Squares and Spatial Lag Regression: Dissimilarity index across Ribeirão Preto Census Tracts

Dependent: Models	Low-Income Dissimilarity Index		High-Income Dissimilarity Index	
	OLS	Spatial Lag	OLS	Spatial Lag
W_DISS		-0.000792		-0.004075
<i>p value</i>		0.987258		0.934750
CONSTANT	-0.004271	-0.004255	-0.004045	-0.003961
<i>p value</i>	0.810933	0.810076	0.821275	0.823483
W_GATED	0.321631	0.321587	0.322365	0.322149
<i>p value</i>	0.000002	0.000002	0.000002	0.000002
W_PUBLIC	0.003728	0.003730	0.003708	0.003717
<i>p value</i>	0.020509	0.019214	0.021490	0.019922
AREA_	0.004869	0.004871	-0.001923	-0.001915
<i>p value</i>	0.135980	0.132128	0.484632	0.482821
TOTAL_RESP	-83.192770	-83.189010	-29.689670	-29.717840
<i>p value</i>	0.007193	0.006539	0.037999	0.035956
NO_SCHOL	0.334903	0.334874	0.364423	0.364281
<i>p value</i>	0.000308	0.000254	0.000089	0.000071
GATED_COM	0.001687	0.001687	0.001717	0.001715
<i>p value</i>	0.270449	0.266105	0.263198	0.259466
PUBL_HOUSI	-0.004706	-0.004706	-0.004547	-0.004549
<i>p value</i>	0.000000	0.000000	0.000000	0.000000
DOM	-0.005127	-0.005129	-0.005384	-0.005393
<i>p value</i>	0.000091	0.000077	0.000039	0.000031
PROPR	-0.002204	-0.002204	-0.001999	-0.001996
<i>p value</i>	0.010592	0.009855	0.020348	0.019354
RESP_MU	0.000977	0.000977	0.001195	0.001198
<i>p value</i>	0.3105596	0.305767	0.2142641	0.2087739
N	649		649	649
R <sup>2</sup>	0.341895	0.352051	0.338875	0.349088
Moran's I error test	-0.005800		-0.006369	

\* Calculated in GeoDa (Weight Matrix: Queen Contiguity)

Source: calculated by the author based on data of IBGE Census 1991 and 2000

Elaborated by the author

May, 2011

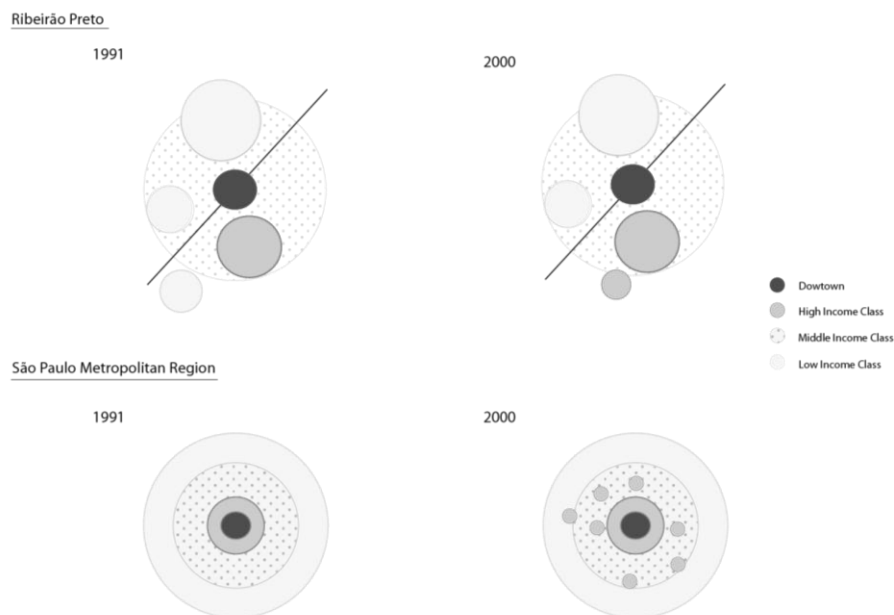
### 3.2.3 Final Remarks

The analysis of segregation in Ribeirão Preto shows that the pattern of spatial segregation under the influence of neoliberal policies and globalization is very different from the pattern identified in the metropolitan region of São Paulo. Although citywide (global) indices of segregation are similar in both study areas, in the metropolitan region, the center–periphery model can still be applied to describe overall segregation, whereas in Ribeirão Preto a different model of development evolves in the 1990s.

In the 1990s, the SPMR shows signs of changes, mainly by increased fragmentation and proximity between low– and high–income households. In Ribeirão Preto, the segregation of low and high income households tends to form “axial sectors” characterized by development into two opposite directions (north and south). In Ribeirão Preto, different incomes groups do not cluster in proximity as observed in the metropolitan region of São Paulo during the 1990s. Figure 3.XI illustrates the main tendency in terms of spatial segregation indentified by the analysis.

The case of Ribeirão Preto corroborates with Villaça’s (1998) findings on other metropolitan areas of Brazil: the elite tend to form sectors and “move” into the same direction. Similarly to the SPMR, the high income classes are moving to the periphery, but in the case of Ribeirão Preto, the high–income households tend to move only towards the south–eastern region.

**Figure 3.XI:** Ribeirão Preto and São Paulo in the 1990s



## CHAPTER 4 – CONCLUSION

#### 4.1 The roots of Spatial Segregation in Ribeirão Preto

The city of Ribeirão Preto is an important economic center in the state and in the country. It is considered the “agribusiness center” of the state and it is often referred to as the Brazilian California, in reference to its high levels of economic performance. The production of sugar cane is the main agricultural activity in the surrounding cities, and the city is a major regional service and academic/research center. Ribeirão Preto is located in one of the areas with the highest levels of social and urban adequacy (Rolnik, 1999). That is, this is a region within the state with low “social vulnerability,” an index created to measure how much access to social and material necessities inhabitants have in terms of infrastructure, human rights, social institutions, public security, justice, and political representation. Despite the high levels of this index, the city is very segregated, and the city for the poor and the city for the rich still is the main structuring bone of urban development.

Based on the analysis conducted I argue that the increased socioeconomic inequality of the 1990s has intensified, not changed, the existing pattern of spatial segregation in Ribeirão Preto (the city’s Theil Index went from 0.48 to 0.55 – IpeaData). This segregation is characterized by the very distinct areas of concentration of rich and poor households, forming “sectors” of households by income. That is, the characteristics of segregation in Ribeirão Preto are not the direct result of neoliberal policies or of a globalized economy. There is nothing new about the spatial order of the city, which roots can be historically traced to its foundation.

The city of Ribeirão Preto was founded in 1856 amidst the Coffee Cycle. Its soils (called *terra roxa*) are very suitable for coffee production and the activity was very profitable – by the end of 1887, the state of São Paulo was already the largest producer and became the province with the highest income levels.<sup>29</sup> The urban expansion of the city is deeply linked to the origins of the labor used in the production of coffee: the Italian immigrants. In order to attract immigrants, the imperial government

**Table 4.1:** Projects Approved by the Ribeirão Preto City Planning Department

	up to 1989	1990s	2000s	Total
Subdivisions	130	11	24	165
Public Housing	23	21	8	52
Gated Communities	10	10	40	60

*Source:* Ribeirão Preto City Planning Department  
Elaborated by the author based on maps provided by the Planning Department in CAD format

in the late 19<sup>th</sup> Century implemented “colonial nuclei,” settlements where immigrants were given small land properties in exchange for working in the harvest of coffee. In Ribeirão Preto, the Antônio Prado colonial nucleus was founded in 1887 to house immigrants working on the production of coffee and was a defining element in the structure of the urban space.

According to Manhas & Manhas (2009), this isolated proletarian settlement would become the north poor region of the city in the 20<sup>th</sup> Century. Driven by principles of urban sanitation, hospitals, cemeteries and everything considered to be sources of diseases were prohibited through zoning in the central areas and pushed towards this working class settlement. The immediate result was the rise in the price of land in the central, clean and well-served area with urban infrastructure and services. While the bourgeoisie were able to afford to live in the central area, the working class was pushed towards the northern periphery where land was cheaper and undesirable urban activities were allocated. The authors noted that Ribeirão Preto grew based on the division of rich/poor, healthy/unhealthy, clean/dirty areas, or, the south and the north.

Figure 4.I shows the evolution of the urban territory in Ribeirão Preto, which clearly depicts a concentric ring model of urban form by subdivisions. However, as one can see in Figure 4.II, the concentric development of the urban fabric did not entail the concentric development by income classes represented here by public housing and gated communities. In this map, the original region of the Antonio Prado colonial nuclei is shaded in pink (named 1887 Urban Nuclei). It coincides with the clusters of low-income households and with the majority of slums areas of the 20<sup>th</sup> and early 21<sup>st</sup> Centuries.

The location of public housing is an important variable affecting segregation in the city of Ribeirão Preto up to 2000. This implicates planning policies adopted by the city as significantly affecting income-based segregation citywide. As noted by Santos (1993), in Brazil backed by the argument of cheaper land, public housing projects developed with public funds by private companies for middle- and low-income classes are “almost invariably located in the urban periphery [which greatly contributes] to urban sprawl and to real estate speculation” (p.112). The construction of infrastructure in the periphery increases the price of land in adjacent areas raising the selling expectation of propriety owners and stimulating land speculation and urban discontinuity (urban voids).

This is the model that forces the low income to live in areas distant from the main employment centers and contributes to the “impoverishment of the poor.” It is a perverse system, once real estate takes advantage of infrastructure (primarily constructed to serve the poor) the land

within public housing developments also tend to increase given the scarcity of affordable housing in urban centers. The result is once again the expulsion of the very poor that is forced to move out often to slum areas within the city.

According to the Study on Slum and Substandard Housing Final Report (SSSHFR) carried out by members of the legislative chamber in the city, a great proportion of the population living in slums fled from the higher prices on public housing developments (p.12). The Report summarizes data divulged by the media in slum population which the major trend is the increasing numbers of slums especially in the 1990s. Between 1995 and 1998, the number of slums, of which the majority was located in the north region, increased three times (from 1,715 to 5,497 inhabitants). By the year of 2005, the estimated numbers of slums was 33 which totalized a total population of 18,069 in Ribeirão Preto.

Although the direction and overall pattern remain fairly the same, there is a new dimension added to the existing spatial segregation: the proliferation of gated communities that has increased significantly since the 1990s in the south area (see Table 4.I and Figure 4.II).

In Ribeirão Preto the proliferation of gated communities is currently a very expressive urban phenomenon and it is definitely transforming the urban landscape of the city as in the SPMR in the 1990s. The gated community phenomenon has been documented in other medium cities too, such as, Sorocaba, São José do Rio Preto and Presidente Prudente (Sposito, 2004) and seems to be now an intrinsic characteristic of Brazilian cities alongside slums and substandard housing.

By looking closely at the location of gated communities and public housing in Figure 4.II, one can see there are some indicators of changes as of today. There are areas in which gated and public housing live side by side signaling more fragmentation as we observed for the SPMR in the 1990s. However, these are represented by public housing moving towards areas of gated communities, never the other way around. High income classes are able to keep their voluntary segregation through walls nowadays, not through exclusive-homogenous areas as in the past.

Although the proliferation of gated communities in the 1990s is associated with the increased inequality of that period, the pattern of spatial segregation in the city seems to be highly correlated (statistically and historically) with the location of public/affordable housing. High income households gather in a specific area to flee and to protect themselves from the poorer and more violent areas of the city.

## 4.2 Spatial segregation and Planning

Through the case of Ribeirão Preto, I sought to demonstrate that first, socioeconomic inequality is very significant in medium cities in Brazil. In the 1990s, all cities with population between 400,000 and 600,000 increased inequality as measured by the Theil Index<sup>30</sup> in the state of São Paulo (IPEA).

Second, along with inequality, spatial segregation has also increased between 1991 and 2000 as did in the case of SPMR. Although the two analyzed areas spatially evolved in different manners (rings vs. sectors), there is a common trend of high-income moving toward the periphery and there is a tendency of increasing segregation through the proliferation of gated communities.

Lastly, the dynamics driving city form in Ribeirão Preto still represents the wish of the high income households to live in exclusive areas as did in the 19<sup>th</sup> Century – that is also common to the metropolitan region of São Paulo as Ferreira (2004) has argued.

The social consequences of spatial segregation are many of which I highlight a few. First, spatial segregation tend to directly affect environmentally sensitive areas, such as open spaces (public green areas) and watershed protected areas. The lack of affordable housing, as consequence of land speculation, forces the low-income population to live in “residual areas” through self-construction at places environmentally protected and/or public spaces such as parks and plazas. In Ribeirão Preto, for instance, almost 100 percent of the slums are either located in public spaces or in watershed protected areas.

Second, high rates of urban violence are highly correlated with areas that are homogeneously poor and disproportionately affect young and non-white population in Brazil (Maricato 2000, p.164). Between 1996 and 2000, the number of police reports increased 60 percent in Ribeirão Preto (SEADE). Moreover, research has shows that spatial segregation and homicides rates are highly correlated ( (Rolnik, 1999).

Third, fragmentation and spatial segregation explicitly limit the access of the different social groups to urban opportunities, such as, jobs (employment mismatch), amenities, schools, affordable housing, commerce, health, and services. When access is not an issue, quality of services became the issue as significant clustered poverty tend to have worse services than pockets of poverty within an area with generally higher levels of income (Roberts & Wilson, 2009). In other words, spatial

---

<sup>30</sup> Theil Index used by IPEA measures the concentration of wealth according to the housing unit per capita earnings.



segregation entails not only differences in income but also innumerable inequalities that perpetuate discriminatory access to socioeconomic development and upward mobility for poorer population.

In short, housing patterns are a critical element of urban form, and are significantly affected by government actions such as the provision of public housing. The spatial pattern of segregation diminishes the opportunities for the interaction between different socio-economic groups and social integration along with uneven demand for services which increases the costs of infrastructure.<sup>31</sup>

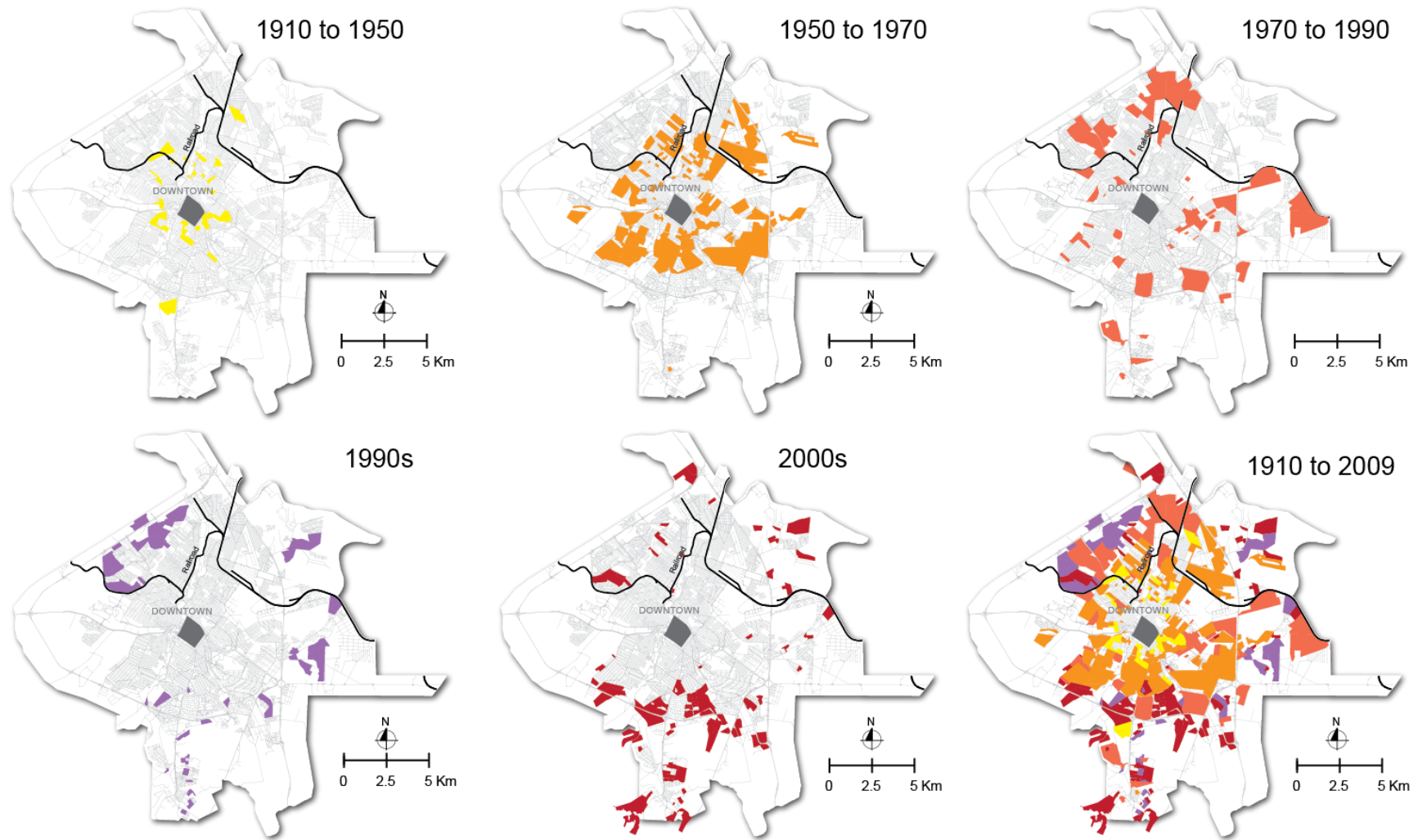
Urban planning and public policy contribute to the intensification or alleviation of spatial segregation as discussed with the provision of affordable housing. Moreover, planning has traditionally made use of indices related to the characteristics of properties ignoring the effects of each decision on the intra-urban dynamics and in the relationship among the different aspects of the city life. Planning should go beyond the traditional technical approach and include measures that take into consideration the urban form as a whole. That is, the impact of the variation of a specific characteristic (i.e. gated communities/public housing) on the social and environmental sustainability of the city should be accounted for. Planning practice by limiting its role to the strict assessment of land use (residential, industry, commerce, etc.) and its respective intensity (low, high, medium densities) ignores sociability, the most intrinsic characteristic of urban life.

Segregated areas of poverty in Brazilian cities are deeply embedded in the life of inhabitants whose outrage seems to have vanished. To recognize the existence of spatial segregation in medium cities and to consider it an abnormal growth pattern as opposed to an expected outcome provides people, cities and the whole society the opportunity to avoid the path followed by the gigantic São Paulo: the socially segregated and violent road.

---

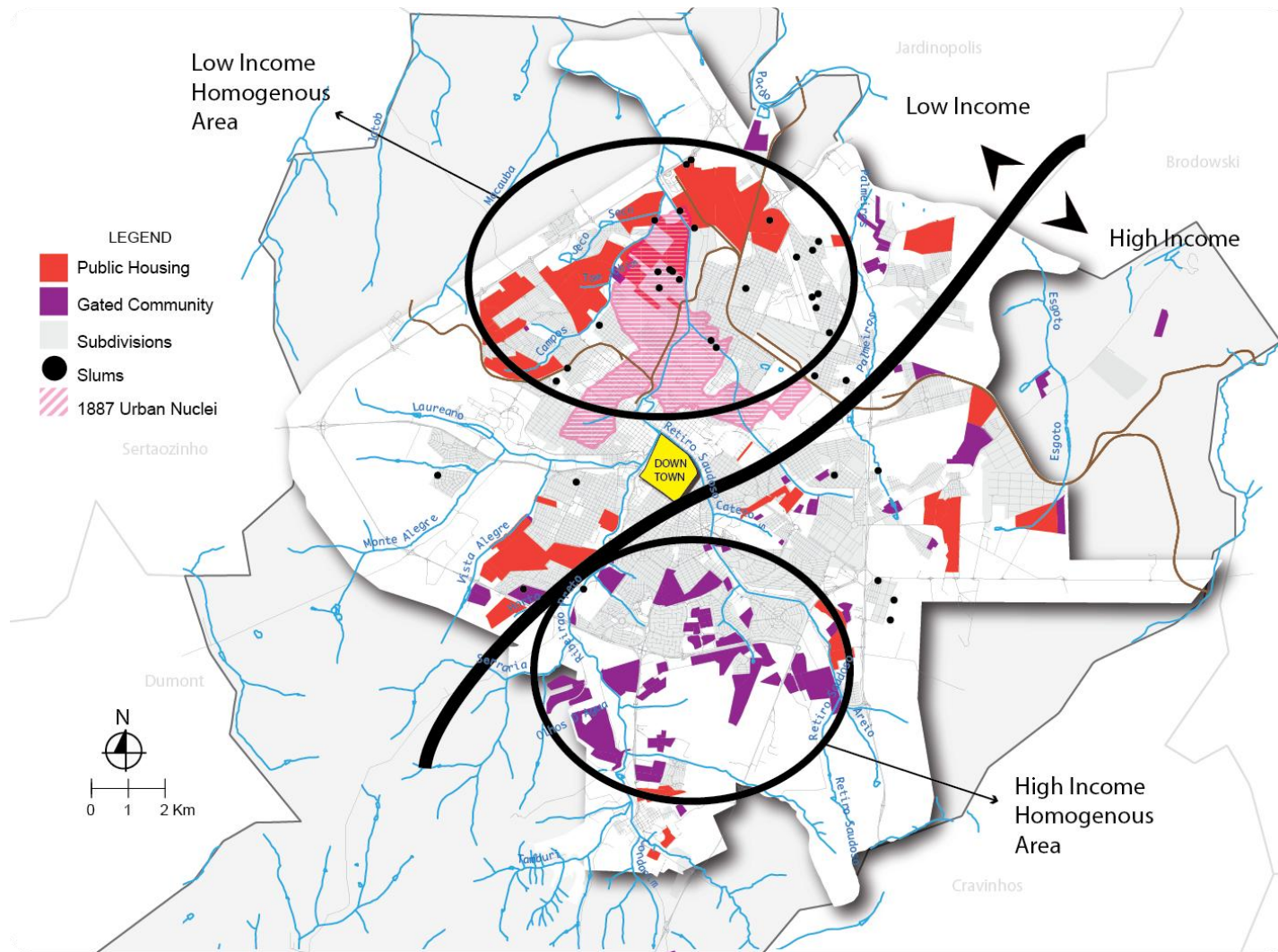
<sup>31</sup> Roberts & Wilson (2009) argued that less segregation reduces the costs of an education system of good quality for instance.

Figure 4.I: Urban Growth in Ribeirão Preto, SP 1910 to 2009



Elaborated by the author  
May, 2011

Figure 4.II: Ribeirão Preto in 2009 – Types of Communities



Elaborated by the author based on CAD archives provided by the Ribeirão Preto City Planning Department and Manhas & Manhas (2009) May, 2011

## BIBLIOGRAPHY

Alsayyad, N. (1993). Squatting and Culture: A Comparative Analysis of Informal Developments in Latin America and the Middle East. *Habitat International* , 17 (1), pp. 33–44.

\_\_\_\_\_ & Roy, A. (2006, April). Medieval Modernity: On Citizenship and Urbanism in a Global Era. *Space and Polity* , 10, pp. 1–20.

Andersen, H. T. (2002). Globalisation, spatial polarization and the housing market. *Danish Journal of Geography* , 102, pp. 93–102.

Andrade, T. A., & Serra, R. V. (2001). *Cidades Médias Brasileiras*. Rio de Janeiro, Brasil: IPEA.

\_\_\_\_\_, Santos, A. M., & Serra, R. V. (2001). Fluxos Migratórios nas Cidades Médias e Regiões Metropolitanas Brasileiras: A Experiência do Período 1980/96. In T. A. Andrade, & R. V. Serra (Eds.), *Cidades Médias Brasileiras* (p. 394). Rio de Janeiro: IPEA.

Badcock, B. (1997). Restructuring and spatial polarization in cities. *Progress in Human Geography* , 21 (2), pp. 251±262.

Baer, W. (2008). *The Brazilian Economy – Growth and Development*. Boulder, Colorado: Lynne Rienner Publishers, Inc.

Barros, J. X. (2004, October). Urban Growth in Latin American Cities. *Urban Growth in Latin American Cities – Exploring urban dynamics through agent-based simulation* , p ii. A thesis submitted for the degree of Doctor of Philosophy.

Bhattacharya, P. C. (2002 , Oct. 12–18). Urbanisation in Developing Countries. *Economic and Political Weekly* , 37, pp. 4219–4221.

Borsdorf, A., & Hidalgo, R. (2005–2009). The Fragmented City – Changing Patterns in Latin American Cities. *The Urban Reinventors Paper Series* .

Brender, V. (2010, Spring). Economic transformations in Chile: the formation of the Chicago Boys. *American Economist* , p. p111(12).

Caiado, A. S. (2004). Migração e Rede Urbana da Mobilidade Demográfica nas principais Aglomerações Urbanas do Estado de São Paulo na Década de 90. *XIV Encontro Nacional de Estudos Populacionais*. Caxambú.

\_\_\_\_\_ (2000). *City of Walls. Crime, Segregation, and Citizenship in Sao Paulo*. Berkeley, California: University of California Press.

\_\_\_\_\_ (1996, March). Building up walls: the new pattern of spatial segregation in São Paulo. *International Social Science Journal* , 48, pp. 55–66.

Carvalho, E. d. (2003, Agosto 1). Exclusão Social e Crescimento nas Cidades Médias Brasileiras. *Revista Eletrônica de Geografia y Ciencias Sociales* , VII (146(128)).

- Castells, M. (2005). Space of Flows, Space of Places: Materials for a Theory of Urbanism in the Information Age. In B. Sanyal (Ed.), *Comparative Planning Culture*. New York, NY, USA: Routledge.
- Chakravorty, S. (2005). Urban Development in the global periphery: The consequences of economic and ideological globalization. In H. W. Richardson, & C.-H. C. Bae (Eds.), *Globalization and Urban Development* (p. 321). Berlin, Germany: Springer-Verlag Berlin Heidelberg.
- Chang, H.-J., & Grabel, I. (2004–05, Winter). Reclaiming development from the Washington Consensus. *Journal of Post Keynesian Economics*, 27, p. 273.
- Chong, A., & López-de-Silanes, F. (2004, Spring). Privatization in Latin America: What Does the Evidence Say? *Economia*.
- CODERP (2011). Coordenadoria de Desenvolvimento de Ribeirão Preto
- Costa, E. M. (2002). Cidades Médias. Contributos para a sua definição. *Finisterra*, XXXVII, pp. 101–128.
- Crotty, J. (2000). Slow Growth, Destructive Competition and Low Road Labor Relations: A Keynes–Marx–Schumpeter Analysis of Neoliberal Globalization. (U. o. Amherst, Ed.) *WORKINGPAPER SERIES* (Number 6).
- Cuberes, D. (2011). Sequential city growth: Empirical evidence. *Journal of Urban Economics* (69), pp. 229–239.
- Cunha, J. M., & Jiménez, M. A. The Process of Cumulative Disadvantage: Concentration of Poverty and the Quality of Public Education in the Metropolitan Region of Campinas. In B. R. Roberts, & R. H. Wilson (Eds.), *Urban Segregation and Governance in the Americas* (pp. 169–185).
- Diniz, C. C., & Razavi, M. (1999). São José dos Campos and Campinas – State Anchored Dynamos. In R. Markusen, Y.-S. Lee, & S. DiGiovanna (Eds.), *Second Tier Cities – Rapid Growth beyond the Metropolis* (pp. 97–124). Minneapolis, MN, USA.
- Drakakis-Smith, D. (2000). *Third World Cities*. New York, NY: Routledge.
- EU, European Union (2009). *Joint Report on Social Protection and Social Inclusion*.
- Ferreira, J. S. (2004, Dezembro). O mito da cidade-global: o papel da ideologia na produção do papel terciário em São Paulo. *Revista Pós-FAUUSP*.
- Filho, O. A., & Serra, R. V. (2001). Evolução e perspectivas do papel das cidades médias no planejamento urbano e regional. In T. A. Andrade, & R. V. Serra (Eds.), *Cidades Médias Brasileiras*. Rio de Janeiro: IPEA.
- Flores, C. (2009). Advances in Research Methods for the Study of Urban Segregation. In R. H. Bryan R. Roberts (Ed.), *Urban Segregation and Governance in the Americas*. New York, NY: Palgrave MacMillan.
- \_\_\_\_\_, & Wilson, R. H. (2009). Changing Patterns of Residential Segregation in Austin. In B. R. Wilson (Ed.), *Urban Segregation and Governance in the Americas* (pp. 188–203).

- Friedmann, J., & Wolff, G. (1982, September). World city formation: an agenda for research and action. *International Journal of Urban and Regional Research*, 6, pp. 309–344.
- Geiger, P. P. (1995). A urbanização brasileira nos novos contextos contemporâneos. In M. F. Gonçalves, *O Novo Brasil Urbano – Dilemas, Impasses, Perspectivas*. Porto Alegre, Brasil: Editora Mercado Aberto.
- Gnos, C., & Rochon, L.–P. (2004–5, Winter). What is next for the Washington consensus? The fifteenth anniversary, 1989–2004. *Journal of Post Keynesian Economics*, 27 (2), p. 187.
- Haddad, M., & Nedovic–Budic, Z. (2006). Using Spatial Statistic to Analyze Intra–urban Inequalities and Public Intervention in Sao Paulo, Brazil. *Journal of Human Development*, 7 (1), pp. 85–109.
- Hammet, C. R. (1998). Social Polarization, Economic Restructuring and Welfare State Regimes. In E. A. Strom, & J. H. Mollenkopf (Eds.), *The Urban Politics Reader*. New York, NY, USA: Routledge.
- Hetzl, R. L. (2007, Winter). The Contributions of Milton Friedman to Economics. *Economic Quarterly*, 93 (1), pp. 1–30.
- Janoschka, M., & Borsdorf, A. (2004). Condomínios fechados and Barrios privados: the rise of private residential neighbourhoods in Latin. In G. Glasze, & C. W. (Ed.), *Private Neighbourhoods. Global and local perspectives*. London: Routledge, in press.
- Jere–Malanda, R. (2008). Brazil, the Fall of a 'Racial Paradise'. *New African*, 76–79.
- José, C. M., & Maren, J. A. (2009). The Process of Cumulative Disadvantage: Concentration of Poverty and the Quality of Public Education in the Metropolitan Region of Campinas. In B. R. Roberts, & W. H. Robert, *URBAN SEGREGATION AND GOVERNANCE IN THE AMERICAS*.
- Kresl, P. K., & Fry, E. H. (2005). *The Urban Response to Internationalization*. Northampton, MA, USA: Edward Elgar Publishing Limited.
- Lim, G.–C. (2005). Globalization, spatial allocation of resources and spatial impacts: A conceptual framework. In H. W. Richardson, & C.–H. C. Bae (Eds.), *Globalization and urban development* (pp. 13–27). Berlin: Springer.
- Lima, J. J. (2001). Socio–spatial segregation and urban form: Belém at the end of the 1990s. *Geoforum* (32), pp. 493–507.
- Manhas, A. C., & Manhas, M. P. (2009). Origens da segregação social e urbana em Ribeirão Preto (SP) após a implantação do Núcleo Colonial Antônio Prado em 1887. In L. M. Gazzaneo, & A. A. Amora (Eds.), *Ordem, desordem, ordenamento: cidade, história e patrimônio*. (Vol. 1, pp. 9–24). Rio de Janeiro.
- Marangos, J. (2008, September 3). The Evolution of the Anti–Washington Consensus Debate: From 'Post–Washington Consensus' to 'After the Washington Consensus'. *COMPETITION & CHANGE*, pp. 227–244.
- Marcuse, P., & Kempen, R. v. (2000). Globalizing cities : a new spatial order?

- Maricato, E. (2000). As idéias fora do lugar e o lugar fora das idéias – Planejamento urbano no Brasil. In O. Arantes, C. Vainer, & E. Maricato, *A Cidade do Pensamento Único*. Petrópolis: Vozes Ltda.
- Massey, D. S., & Denton, N. A. (1988, December). The Dimensions of Residential Segregation. *Social Forces*, 62 (2).
- Matos, R. (2005, 1º sem). Periferias de grandes cidades e movimentos populacionais. *CADERNOS METRÓPOLE*, N. 13, pp. 71–105.
- McFarlane, C. (2010, December). The Comparative City: Knowledge, Learning, Urbanism. *International Journal of Urban and Regional Research*, 34 (4), pp. 725–42.
- Mitchell–Weaver, C. (1991). Urban Systems Theory and Third World Development. *Journal of Urban Affairs*, 13, pp. 419–441.
- Mollenkopf, J. (2007). The Postwar Politics of Urban Development. In E. A. Strom, & J. H. Mollenkopf (Eds.), *The Urban Reader*. New York, NY, USA: Routledge.
- Montgomery, M. (2008). The Demography of the Urban Transition: What we Know and Don't Know. In G. Martine, G. McGranahan, M. Montgomery, & R. Fernández–Castilla (Eds.), *The New Urban Frontier: Urbanization, Poverty and Environment in the 21st Century* (pp. 17–35). London, UK: Earthscan.
- Moysés, A. (2007, Dezembro). *Produção Acadêmica*. Retrieved Fevereiro 22, 2011, from Observatório das Metrópolis: <http://web.observatoriodasmetrolopes.net>
- Nellis, J. (2003, August). Privatization in Latin America. *Center for Global Development – Working Paper 31*.
- Neto, A. F., & Vernengo, M. (2002–3, Winter). Globalization, a Dangerous Obsession. *International Journal of Political Economy*, 32, pp. 4–21.
- Pereira, L. V. (2006). Brazil Trade Liberalization Program. In S. F. Cordoba, *Coping with Trade Reforms: A Developing–Country Perspective on the WTO Industrial Negotiations*. Palgrave MacMillan.
- Perz, S. G. (2000, Autumn). The Rural Exodus in the Context of Economic Crisis, Globalization and Reform in Brazil. *International Migration Review*, 34, pp. 842–881.
- Préteceille, E. (1994). Cidades Globais e Segmentação Social. In Q. L. Ribeiro, & O. A. Santos Junior, *Globalização, fragmentação e reforma urbana: o futuro das cidades brasileiras na crise* (p. 432). Rio de Janeiro: Editora Civilização Brasileira SA.
- Ribeirão Preto, S. C. (2005). *Relatório Final CEE's Favelamento e Sub–Habitação do Município de Ribeirão Preto*.
- Ribeiro, L. C., & Lago, L. C. (1995). Dinâmica Metropolitana e os Novos Padrões de Desigualdade Social. *São Paulo em Perspectiva*, 9 (2), 25–32.
- Robinson, J. (2006). *Ordinary Cities – Between Modernity and Development*. Abingdon: Routledge.

- Rodríguez, F., & Rodrik, D. (2000). Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-National Evidence. *NBER/Macroeconomics Annual (MIT Press)*, 15, pp. p261–325.
- Rolnik, R. (2008, Agosto 04). A Lógica da Desordem. *LeMonde Diplomatique Brasil*.
- \_\_\_\_\_ (1999). Exclusão Territorial e Violência. *São Paulo em Perspectiva*, 100–111.
- \_\_\_\_\_ (1999, 32). Regulação Urbanística e Exclusão Social. *Pólis*.
- Rondinelli, D. A. (1983). *Secondary Cities in Developing Countries*. Beverly Hills, CA, USA: Sage Publications.
- Rosembach, R., Monteiro, A. M., Júnior, R. A., Feitosa, F. d., & Ramos, F. R. (2010). Ampliando o olhar: metodologia para estudo comparativo dos padrões de segregação socioespacial nas regiões de conurbação de São José dos Campos e Jacareí, no Vale do Paraíba e Ubatuba, Caraguatatuba e SãoSebastião, no Litoral Norte em SP.
- Sampaio, C. F. (2003). Urban Development and Increased Socio-Spatial Inequalities in Fortaleza, Brazil: The Role of Plannin. *Master's Thesis*. Urbana, IL, USA.
- Santos, M. (1993). *A Urbanização Brasileira*. São Paulo: Hucitec.
- Sassen, S. (2001). *The Global City*. Princeton: Princeton University Press.
- Sathler, D., & Miranda, V. (2010, jul/dez). A desconcentração demográfica paulista em perspectiva. *Cadernos Metrôpolis – A Configuração Urbana*, 12, pp. 295–605.
- Scargill, D. (1979). *The Form of Cities*. London: Bell & Hyman Limited.
- Schiffer, S., & Déak, C. (2007). Legitimizing Power Structures in São Paulo. In K. Segbers (Ed.), *The Making of Global City Regions*. Baltimore, Maryland, USA: The Johns Hopkins University Press.
- Schteingart, M. (1996). What Has and Has Not Changed since Habitat I: A View from the South. In M. A. Cohen, B. A. Ruble, J. S. Tulchin, & A. M. Garland (Eds.), *Preparing for the Urban Future – Global Pressures and Local Forces*. Washington, USA: The Woodrow Wilson Center Press.
- Short, J. R., & Kim, Y.-H. (1999). *Globalization and the City*. Essex, England: Addison Wesley Longman Limited.
- Silva, M. N. (2006, Setembro). TERRITÓRIO E RAÇA: Fronteiras urbanas numa metrópole brasileira. *XV Encontro Nacional de Estudos Populacionais, ABEP*. Caxambu, MG, Brasil.
- Smith, R. G., & Doel, M. A. (2011, January). Questioning the Theoretical Basis of Current Global-City Research: Structures, Network and Actor-Networks. *International Journal of Urban and Regional Research*, 35.1, pp. 24–39.
- Smolka, M. O., & Larageira, A. d. (2008). Informality and Poverty in Latin America Urban Policies. In G. M.-C. George Martine (Ed.), *The New Global Frontier: Urbanization, Poverty and Environment in the 21th Century* (pp. 99–114). London, UK.



- Souza, J. C. (2009). Reestruturação Urbana e Interações Espaciais em Cidades Médias: o Exemplo de Arapiraca, Alagoas. *Revista Geografia em Questão*, 01, pp. 107–117.
- Souza, M. A. (1995). O novo Brasil urbano: integração ou fragmentação? In W. M. Panizzi (Ed.), *O Novo Brasil Urbano – Impasses, Dilemas, Perspectivas* (p. 360).
- Souza, M. L. (2001). Metropolitan deconcentration, socio-political fragmentation and extended suburbanization: Brazilian urbanization in the 1980s and 1990s. *Geoforum*, 32, pp. 437–447.
- Sposito, E. S. (2006). Mercado de Trabalho no Brasil e no Estado de São Paulo. In M. E. Eliseu Savério Sposito, *Cidades Médias: Produção do Espaço Urbano e Regional* (p. 376). São Paulo: Expressão Popular.
- Sposito, M. E. (2004, Agosto). Novos Conteúdos nas Periferias Urbanas nas Cidades Médias do Estado de São Paulo, Brasil. *Investigaciones Geográficas* (054), pp. 114–139.
- Srinivasan, P.V.; Jha, Shikha. (2002). Globalization and Public Agricultural Research in India. In D. Bigman (Ed.), *Globalization and the Developing Countries: emerging strategies for rural development and poverty alleviation*. Wallingford, UK: CABI Publishing.
- Steinberger, M., & Bruna, G. C. (2001). Cidades Médias: elos do urbano-regional e do público-privado. In T. A. Andrade, & R. V. Serra (Eds.), *Cidades Médias Brasileiras*. Rio de Janeiro, Brasil: IPEA.
- Telles, E. E. (1994). Segregação Racial e Crise Urbana. In L. C. Ribeiro, & O. A. Júnior (Eds.), *Globalization, Fragmentação e Reforma Urbana – O Futuro das Cidades na Crise* (p. 432). Rio de Janeiro, RJ, Brasil: Civilização Brasileira.
- \_\_\_\_\_ (1995, March). Structural Sources of Socioeconomic Segregation in Brazilian Metropolitan Areas. *American Journal of Sociology*, 100 (5), pp. 1199–1223.
- Torres, H. d. (2003). Pobreza e Espaço: padrões de segregação em São Paulo. *Revista do Instituto de Estudos Avançados, IEA – USP* 17 (47).
- \_\_\_\_\_ (2004, Fevereiro). Segregação Residencial e Políticas Públicas – São Paulo na década de 1990. *Revista Brasileira de Ciências Sociais*, 19 (54), pp. 42–56.
- Tyner, J. A. (2006). Laboring in the Periphery: The Palce of Manila in the Global Economy. In M. M. Amen, K. Archer, & M. M. Bosman (Eds.), *Relocating Global Cities – From the Center to the Margins* (p. 226). Oxford, UK: Rowaman & Littlerfield Publishers, Inc.
- Ueda, V. (2006). Loteamentos Fechados e Produção do Espaço Urbano: Algumas Reflexões para o Debate. In E. S. Sposito, M. E. Sposito, & O. Sobarzo (Eds.), *Cidades Médias: Produção do Espaço Urbano e Regional* (p. 376). São Paulo: Editora Expressão Popular.
- UN, United Nations (2010). *The Millennium Development Goals Report*. New York.
- UN–Habitat. (2001). *Cities in a Globalizing World – Global Report on Human Settlements 2001*.
- VEJA. (2010). Cidades Médias – Aonde o Futuro já Chegou. *VEJA* (2180).

Villaça, F. (1997). A Delimitação Territorial do Processo Urbano. *Working Paper*. São Paulo, SP, Brasil.

\_\_\_\_\_ (1998). *Espaço Intra-urbano no Brasil*. São Paulo: Livro Studio Nobel Ltda.

Walter, L. A., & Gotway, C. A. (2004). *Applied Spatial Statistics for Public Health*. Hoboken, New Jersey, Canada: John Wiley & Sons Inc. .

Werna, E. (2000). *Combating Urban Inequalities*. Northampton, Massachusetts: Edward Elgar Publishing Limited.

Williamson, J. (2004–5, Winter). The strange history of the Washington consensus. *Journal of Post Keynesian Economics*, 27 (2), p. 195.

## APPENDIX

## A.1 – RIBEIRÃO PRETO SPATIALLY LAGGED MODEL DESCRIPTION

The dissimilarity index, DISS henceforth, for each census tract equals the difference between the proportion in the census tract and the proportion of the same population in the city as whole, it can be represented by:

$$\left| \frac{b_i}{B} - \frac{w_i}{W} \right|$$

where:

$b_i$  = the low-income household in census tract

$B$  = the total low-income population of the city

$w_i$  = the non-low-income household population of the census tract

$W$  = the total non-low-income household population of the city

The variables (or predictors) included in the model to assess variation of segregation of low- and high-income households are:

$$\text{DISS} = a + b * \text{PUBLIC\_HOUS} + c * \text{PREFERENCES} + d * \text{EDUCATION} + e * \text{WDISS} + f * \text{DEMOGRAPHICS} + \text{error} \quad (1)$$

$a, b, c, d, e$  and  $f$  are the coefficients of the vectors:

$\text{PUBLIC\_HOUS}$  = public housing;

$\text{EDUCATION}$  = households head with no schooling;

$\text{PREFERENCES}$  = gated communities, female households, property owners;

$\text{WDISS}$  is the segregation index (dissimilarity) of neighboring tracts;

$\text{DEMOGRAPHICS}$  = census tract area, number of households, and number of housing units.

These vectors of variables try to capture the effect of individual preferences (gated communities) and/or planning policies (public housing) occurring in neighboring tracts on the dissimilarity index within each census tract. Table A.1 describes each variable included in the model,

the respective descriptive statistics. The model was estimated in GeoDa based on a spatial weight matrix (Queen Contiguity calculated by the software).

It is worth mentioning that the software GeoDa calculates the spatial lagged dependent variables ( $W*DISS$ ), where  $W$  is the weight matrix. I also include in the model two spatial lagged independent variables ( $W*PUBLIC\_HOUSING$  and  $W*GATED\_COMMUNITY$ ).<sup>32</sup> Equation (1) is then written as:

$$DISS = a + b*PUBLIC\_HOUS + c*PREFERENCES + d*EDUCATION + e*WDISS + f*DEMOGRAPHICS + W\_PUBLIC + W\_GATED + error \quad (2)$$

It is important to note that the mean of the dissimilarity index across census tracts is 0.12, in average census tracts has 0.15 gated communities, and 0.16 public housing sites within its boundaries; and the mean number of households is 222 per census tract. The elevated value of the standard deviations indicates that there is variation across census tracts in terms of dissimilarity.

**Table A.I:** Descriptive Statistics

Variable	Definition	Mean	Standard Deviation	Minimum	Maximum
<b>W_DISS_LOW</b>	Average value of dissimilarity of low income households for neighboring census tracts	0.0011491	0.000793439	0	0.005899
<b>W_DISS_HIGH</b>	Average value of dissimilarity of high income households for neighboring census tracts	0.0020203	0.001873306	0	0.010162
<b>W_GATED</b>	Average N° of Public Housing Sites with neighboring census tracts	0.0396287	0.232183907	0	3
<b>W_PUBLIC</b>	Average N° of Public Housing Sites with neighboring census tracts	0.233283	0.435691774	0	4
<b>AREA_</b>	Area of the census tract	0.1666275	0.552577232	0.002375	5.915035
<b>TOTAL_RESP</b>	Total household heads per census tract	222.80277	90.44639599	0	935
<b>NO_SCHOL</b>	Household head with no schooling	10.822804	11.50285945	0	84
<b>GATED_COM</b>	N° of Gated Communities within the census tract	0.0909091	0.470808937	0	6
<b>PUBL_HOUSI</b>	N° of Public Housing Sites within the census tract	0.2696456	0.590317997	0	9
<b>DOM</b>	N° of Housing units	225.25886	89.14913735	0	935
<b>PROPR</b>	N° of households that own the housing unit	115.02928	66.66637088	0	466
<b>RESP_MU</b>	N° of housing which househead is a women	58.855162	29.05078528	0	228

<sup>32</sup> I do not report the normality test of the heteroskedasticity (normality Jarque-Bera and Brouch-Pegan). Although the errors in OLS seem not to be normally distributed, the regression using spatially lagged dependent variables does not change the precision (standard error) of the least square estimation. Moreover, both regression (OLS and Spatial Lag Model) seem to have heteroscedastic variance. GeoDa seems to run the regression robust to heteroscedasticity