Brazil's early urban transition: what can it teach urbanizing countries?

George Martine and Gordon McGranahan

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ABOUT THE AUTHORS

George Martine is an independent consultant and past President of the Brazilian Association of Population Studies
e-mail: georgermartine@yahoo.com

Gordon McGranahan is Head of the Human Settlements Group at the International Institute for Environment and Development
e-mail: gordon.mcgranahan@iied.org

Human Settlements Group
International Institute for Environment and Development (IIED)
3 Endsleigh Street
London
WC1H 0DD, UK
Tel: 44 20 7388 2117 (international); 020 7388 2117 (UK)
Fax: 44 20 7388 2826 (international); 020 7388 2826 (UK)

Population and Development Branch
United Nations Population Fund (UNFPA)
220 East 42nd Street
New York
NY 10017, USA
Tel: +1 212 297 5000
Fax: +1 212 297 4930

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1. Introduction: The road to an early urban transition

This paper follows the history of urbanization in Brazil, a large and populous country that has long been associated with the 'developing' world, but which has now largely completed its urban transition. In the words of the World Bank, 'Brazil has over the last three decades become a fully urbanized country… Between 1970 and 2000, the urban system absorbed more than 80 million people… Cities became the core of economic activity (90 per cent of GDP), with large cities becoming diversified, taking advantage of large markets for inputs and ideas and enjoying high levels of productivity and growth' (World Bank, 2006, Vol. 1: i).

Despite this early urban transition, Brazilian cities and their inhabitants still face stiff economic, social and environmental challenges. The road to a high level of urbanization has been exhausting and socially disruptive, and the vestiges of the process are still evident in certain aspects of current social organization. It can be posited that these difficulties originate from two principal factors: a historically rooted and enduring structure of social inequality, and the persistent failure to foresee, accept and plan for massive urban growth.

Inequality came over on the boats with the highly stratified social system of the Portuguese colonizers. It was fortified by huge land grants that spawned a feudal landholding system, and by the adoption of slavery. Over the centuries it has been reproduced through the social structures and cultural patterns underlying the various colonial, imperial, republican, military and democratic regimes that have succeeded each other since the arrival of the first explorers. Only recently has it shown signs of abating.

Solidly entrenched in the Brazilian make-up, an enduring framework of inequality has helped inure society to the plight of the poor masses who have largely driven the country's rapid urban growth. This also helps to explain the decision makers' slowness in grasping the social composition of urban growth processes, or their magnitude, speed and significance. This sluggishness in turn precluded adequate preparation for urban growth. In the face of pervasive social inequality, the failure to take a proactive stance in dealing with massive and inevitable urban growth favoured the spread of the severe shelter poverty, fiscal inadequacy and environmental degradation that mark so many middle-income cities today. These problems make it very difficult for the country to take advantage of its early urban transition and to exploit the full potential of urbanization for development.

The history of urban growth in Brazil is thus closely intertwined with the economic, social, political and demographic transformations that the country has undergone, especially over the last century. During the period of accelerated urban growth and in the current late transition stage, policymakers have intentionally influenced the urbanization process in a variety of ways, with variable success. But they have also influenced it implicitly, often unwittingly and damagingly, through policies aimed at promoting other national or class interests.

Although Brazil is in the late stages of the urban transition, at least from a demographic standpoint, it still faces significant urban growth, especially on the peripheries of large cities. These are the areas where the traditional distortions of the past persist, the lessons that could be derived from reflection on Brazil's previous experiences go largely unnoticed, and cities continue to suffer from preventable social and environmental ills that are especially prevalent among the poorer segments of the population.

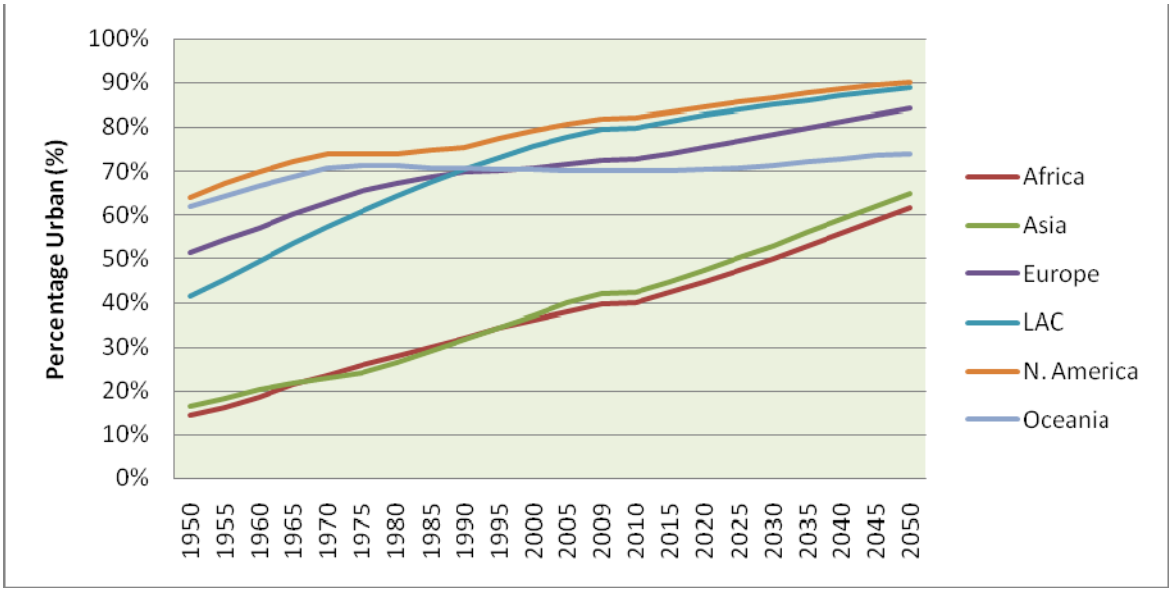
Many other countries, especially in Asia and Africa, are currently in the early stages of their own urban transition. The massive numbers involved make such transformations a critical component of our common future. In order to forge ahead in adopting policies and practices that will change the negative dimension of urban growth trajectories in those countries and cities currently undergoing fastest growth, it is useful to look at the historical record of other regions that have already gone through the urban transition and learn from their experiences – especially their mistakes.

Given the critical differences in historical contexts, the earliest experiences of urbanization in Europe and North America (as well as Japan) may only be of marginal relevance for Africa and Asia. The disparities between the classic demographic transition in rich countries and low- and middle-income countries (with mortality and fertility rates declining over a long period in rich countries and a much shorter time in low- and middle-income countries, where much larger numbers are involved) are echoed in the urban transition, which is currently proceeding at a faster pace and on a greater scale in low- and middle-income countries than it did in the already urbanized world (Montgomery *et al*., 2003, chapters 3 and 4; Cohen, 2004). Thus, it took two centuries for the population of North America and Europe to shift from being 10 per cent urban to 52 per cent urban, rising from 15 million in 1750 to 423 million in 1950. By contrast, the urban population in low- and middle-income countries is expected to grow from 309 million in 1950 to 3.9 billion in 2030, increasing from 18 per cent to 56 per cent of their total population (UNFPA, 2007: 7).

Insufficient attention has been paid to the experiences and possible lessons to be learned from a region that has recently completed a rapid urban transition – namely, Latin America. There are various historical reasons (discussed in the next section) why Latin America preceded Asia and Africa in this transition, as shown in Figure 1.

This paper specifically describes the experience of urbanization in Brazil within the trajectory of the country's overall development path. Brazil is by far the largest country in Latin America, with levels of urbanization surpassing those of most European countries. Despite historical differences in timing and context, the trajectory of urbanization in this country holds many parallels and key lessons for other countries currently undergoing rapid urban growth. Policymakers in countries facing similar challenges might be able to deal more successfully with their own urban transitions by reflecting on this narrative, which considers both failed policies of the past and innovative but partly proven policies of the present. The intention of this study is to provide the basis for such reflection.

Figure 1: Percentage of the population in urban areas, major regions 1950–2050



Source: United Nations Population Division, 2010

The next section of this paper begins with an overview of the historical trends in urban growth in Brazil. This will be broken up into four periods, each covered by a specific sub-section. The first sub-section looks at certain key settlement patterns under Portuguese colonization that have persisted to this day; the second centres on the origins of rapid urban growth in the last decades of the 19th century and first decades of the 20th century; and the third focuses on the Brazilian urban explosion between 1930 and 1980. The fourth will examine the trends in urban growth during the 'late transitional period' from 1980 to the present day.

These synopses of urban growth trends and their determinants are followed by a section analysing the particular process and trajectory of urbanization in Brazil in terms of their significance for present-day social and environmental conditions. The particular focus here is on the origins and consequences of housing problems that led to the persistent issue of slums, and what could have been done to avoid them. The next section then discusses the determinants of economic 'success' in specific cities, and the relevance of different policy options in that respect. The final section analyses some of the more important approaches to urban policy that have been adopted in the country, including certain recent policies that are generating considerable international interest.

Throughout this paper, the primary focus will be on the country level. Brazil is a huge and very diverse country, where the perennially poor northeast of the past provides a stark contrast to the rich-country ambiance of the southeast and particularly its most advanced state, São Paulo. A more comprehensive review of Brazil's urban trajectory would require delving into regional specificities and case analyses, which would transform this document into a book-long affair and make it more difficult to transmit the basic messages that can be derived from the overall experience nationwide. References to regional patterns and differences will be kept to a minimum in order to focus on the central thrust of Brazilian urban growth, although both the city and the state of São Paulo inevitably receive more attention due to their predominant role in Brazil's urban history. The major regions, states and state capitals of Brazil are shown in Figure 2 below.

Figure 2: Map of Brazil showing major regions, states and state capitals

This broad-based analysis suggests several considerations relevant to macro-level policy formulation in countries currently undergoing urbanization. For instance, trying to determine what sort of urban centres should be favoured on the basis of economic argumentation has not yielded the results generally hoped for by policymakers. What is critical, though, is matching infrastructures to prospective centres of urban growth, and recognising that infrastructure does have at least a modest influence on where that growth occurs. This study also makes it clear that addressing inequalities through democratic and participatory processes is difficult and context-dependent (with context taken to include legal shifts), but that it does matter. In the long run, addressing inequalities in a 'planned' manner is not only important for disadvantaged groups, but for society as a whole. In retrospect, it seems clear that Brazil would have done much better to try to accommodate urban growth and address inequalities earlier, and that these can be mutually supportive processes. Finally, this case study reinforces the notion that the trajectory of an urban transition is shaped by given contexts, conjunctures, cultures and complexities that need to be taken into account in any long-term analysis.

2. The stages of the urban transition in Brazil

From an international vantage point, the most striking feature of urbanization in Brazil is its precocity and rapidity – a trait shared with several other Latin American countries. Brazil has urbanized quickly and massively in comparison with most other countries outside the 'first' or 'developed' world. By 1950 it had already reached a level of urbanization (36.2 per cent) only attained in 2000 in Africa (34.5 per cent) and Asia (37.1 per cent).[1] At the last count (the 2000 Demographic Census) over 80 per cent of Brazil's population was recorded as resident in urban areas, according to the official definition of 'urban'.

In short, Brazil experienced an early 'urban transition' despite being outside the small but dominant group of 'rich countries'. The concept of the urban transition parallels the classic 'demographic transition theory', which posits that countries tend to move from high to low levels of mortality and fertility as they achieve economic success. The urban transition theory originally disseminated by Skeldon (1990) suggests that the trajectory of urbanization in different societies historically goes from late to advanced as their economies move from rural-agricultural to urban-industrial. In terms of the Skeldon model, Brazil is now in a 'late transitional society' stage. That is, a large majority of its citizens live in urban areas, many of them in large cities, and its rate of urban growth has slowed drastically from its previous frenetic pace.

To what extent is this phenomenon of precocious urban transition in Brazil attributable to methodological and data issues, rather than substantive trends? It might be argued that the analysis of overall trends is coloured by the rather generous definition of what constitutes an 'urban' area in Brazil. Indeed, the administrative seat of any Brazilian municipality is officially considered as 'urban', regardless of its size. The implications of this approach in the context of Brazil's changing society are described at some length in Annex 1.

This notes that the definitional issue is actually not an important factor, since the data also permit us to use a somewhat more discriminating definition of 'urban'. Much of the analysis in this paper focuses on localities with at least 20,000 inhabitants; although arbitrary, this lower limit ensures a certain correlation with commonly accepted characteristics of urbanism. Therefore, throughout this paper we refer to urban areas according to the 'official definition' (including settlements of fewer than 20,000) or to 'urban localities' (excluding settlements of fewer than 20,000), depending on the data available. Moreover, it is important to note that the great majority of urban Brazilians increasingly live in large cities, many of them in huge cities. In 2000, 81.1 per cent of all urban dwellers lived in a city with a population of at least 100,000, and 54.4 per cent lived in a city with a population of 1 million or more. This represents a much greater concentration of urban populations in large cities than in Europe. Moreover, there is sure to have been a further increase in the predominance of larger centres in Brazil's urban profile in recent years since the census. The country's urban transition is thus real and substantial.

One of the first key issues to be discussed in this paper is why the urban transition in Brazil and most other Latin American countries was earlier and more rapid than in African or Asian countries. A partial answer is provided in Table 1 below, which compares rates of population and GDP growth in Asia, Africa, Latin America and Brazil over broad economic periods between 1500 and 1998. This shows that Latin America as a whole, and Brazil in particular, experienced a significant surge in both GDP and population growth in the periods 1870–1913 and 1913–1950. Africa and Asia did not

[1] Data from United Nations (2008a).

experience such lasting periods of high economic growth coupled with rapid population increase until much later. Unfortunately, available data sources do not provide information on the rates or levels of urbanization for comparable periods, but it is significant that the economic and demographic growth surges in Brazil exactly coincide with the take-off of its urban growth, as subsequent sections of this paper show. The urban transition in Latin America was also coupled with significant changes in social and economic organization, and unprecedented increases in population growth.

Table 1: Average annual population and GDP growth rates in Asia (excluding Japan), Africa, Latin America and Brazil in selected periods between 1500 and 1998

Region/Country	Period					
	1500–1820	1820–1870	1870–1913	1913–1950	1950–1973	1973–1998
	Average annual compound rate of population growth					
Asia (excl. Japan)	0.29	0.15	0.55	0.92	2.19	1,86
Africa	0.15	0.40	0.75	1.65	2.33	2.73
Latin America	0.06	1.27	1.64	1.97	2.73	2.01
Brazil	0.47	1.65	2.18	2.62	1.81	1.04
	Average annual compound rate of GDP growth					
Asia (excl. Japan)	0.29	0.03	0.94	0.90	5.18	5.46
Africa	0.16	0.52	1.40	2.69	4.45	2.74
Latin America	0.21	1.37	3.48	3.43	5.33	3.02
Brazil	0.62	1.95	3.13	5.72	2.09	1.57

Source: Maddison (2001), tables 3-1a and 2.14, pages 126 and 74

2.1 Historical settlement patterns and economic cycles in Brazil[2]

The distinctive trajectory of urbanization in Latin American countries initially stems from the fact that the Iberian colonizers were less interested in settlement than in exploiting the riches of their occupied territories. When the Portuguese and Spanish explorers arrived in the New World they set up an urban system designed to fit their own mercantile aspirations, restructuring existing systems if they already existed. The gamut of cities then established later served as the nucleus of an urban network and the springboard for subsequent urban growth.

The Spanish colonizers moved into regions where the indigenous populations had created many great cities, which were then overridden, destroyed or adapted to the colonizers' own model. This was not the case in Brazil, as the Portuguese colonists exploited areas where the sizeable native population had not established important urban centres. Data on the size of the indigenous population at that time are sketchy, with estimates ranging from 1 million to 10 million, but the great majority lived in the Amazonian basin, which the colonizers would only exploit much later (FUNAI, no date). A recent discovery suggests that there may have been at least one large city (of perhaps up to 100,000 inhabitants) in the Xingu territory of the Amazonian region, but

[2] For discussions of the functions performed by cities in pre-20th century Brazil, see, for instance, Morse 1962a and b); Rios, 1951; Smith, 1955; Geiger and Davidovich, 1961; Faria, 1973; Cano, 1989; and Diniz, 2000b. This section is largely based on summaries of this corpus of work and other literature in Martine and Diniz (1997: 206–216); and Martine (1990a and b).

this was not appropriated or built up by the colonists (who were undoubtedly instrumental in decimating its population in one way or another).[3]

Thus, in terms of urban antecedents, the Portuguese model of urban organization was established on a virtual *tabula rasa*. This obviously differs from the situation in many African and Asian countries, and several other Latin American countries, where the indigenous population had grown slowly over millennia and established varying numbers and sizes of urban concentrations, despite the migrations, conflicts and numerous natural and man-made disasters that variously affected the populations of different regions.

The first '*vila*' established by the Portuguese in Brazil in 1532 was São Vicente, which is now part of the agglomeration of Santos. This was followed by Salvador in 1549 (which became the capital of Brazil until the 18th century), a Jesuit mission in 1554 in what would later become São Paulo; Rio de Janeiro in 1565; and São Luis do Maranhão in 1612 (IBGE, no date). All were spread out along the coastline, apart from the Jesuit mission in São Paulo, whose commercial function would only burgeon much later.

The Portuguese colonizers who took over this vast area called Brazil were primarily outward-oriented. That is, they were mainly interested in extracting riches for their crowned masters from the New World. They established an agricultural-extractive economy for this purpose, with urban areas that primarily served as launch pads for exploration and exploitation of the hinterland, and ports to channel New World produce back to the motherland and serve as defensive strongholds against other colonizing powers. The settlement process produced a mosaic of towns and cities along the coastline, created as departure points for settlement, a first line of defence, and to power and organize the exploitation of natural resources.[4] Brazil's vast and diverse reserves of natural riches made this strategy viable for four centuries.

Brazil's early economy depended on exports of a variety of raw materials and foodstuffs, whose nature was determined by the discovery and exploitation of resources and by fluctuations in the international markets. This approach to the appropriation of the riches of New World produced various cycles of expansion, atrophy and regression, mainly centred on the extraction of brazilwood, gold, diamonds and rubber, and the agricultural production of cattle, sugar and coffee. Each cycle monopolized the factors of production until changes in colonial power relations, the exhaustion of raw materials or stiff international competition prompted a switch to another product. As the geographic axis of economic production changed, it triggered the construction of new towns and further regional segmentation. Most of the labour force left behind after a given cycle eventually turned to subsistence agriculture, leading to the progressive growth of the *minifundios*, which contrasted with the huge *latifundios* carved out by royal land grants.

Throughout these various cycles, the prevailing urban model, transplanted from Portugal to Brazil, was that of maritime and agro-commercial towns that also served the new nation's defensive concerns. Apart from mineral extraction, much of this

[3] According to a report in *Science* (Vol. 321, No. 5893 29, p. 1214, August 2008), a recent expedition by American and Brazilian anthropologists, aided by members of the Xingu tribe, uncovered traces of what is thought to have been a large planned city that existed in Xingu territory between the 12th and 16th centuries.

[4] The concentration of activities on the coast led a Franciscan scholar of the time, Frei Vicente of Salvador, to comment that the Portuguese colonists were like crabs scratching on the coastline (Diniz, 2005: 159.

activity was on or near the coastline. Each new economic cycle led to flourishing towns on some limited part of the country's extensive coastline. Leading the drive towards the interior, these towns and cities were closely linked to the motherland but isolated from one another. Regional trade routes and economies remained undeveloped as maritime transport primarily served to maintain contact with the exterior, providing only tenuous links between the nation's towns.

Although there is no available detailed information on the size and number of cities prior to 1940, it is estimated that Brazil had only about ten cities of 20,000 or more inhabitants by as late as 1872 – more than three and half centuries after the arrival of the first colonizers. A population survey carried out that year showed that just 8 per cent of the population lived in municipalities with a total (urban and rural) population of 20,000 or more. Only three municipalities (Salvador, Rio de Janeiro and Recife) had more than 100,000 inhabitants in total. The nation's capital was transferred from Salvador to Rio de Janeiro at the end of the 18th century in order to better control the flow of minerals from the interior states of Minas Gerais and Goias.

In 1872, all ten municipalities with 20,000 or more inhabitants were located on the coastline, apart from São Paulo. Even now, maps of Brazil still reflect the coastal density of the colonial period (see Figure 2 above). In 1851, concern about the occupation of the interior prompted the construction of the first planned capital in Teresina, Piaui, which was to remain the only state capital of the 13 northeastern states not located on the coastline. This was followed by another planned city, Belo Horizonte, which was built in 1897 in the former heart of the diamond and gold extracting region, and which soon became one of the four largest cities in the country. Nevertheless, such initiatives had little impact on the coastal character of the urban network.

2.2 Origins of the early urban transition in Brazil

The modernization of the European economy in the 19th century, coupled with the intensification of international commercial relations and universal movement towards the abolition of slavery, had various repercussions in the New World. Up to that point, the different cycles of economic activities primarily depended on slave and quasi-servile labour, thus delaying the formation of an internal market. The dominant social class, formed during the agricultural cycles, was composed of anti-urban landowners who occupied large tracts of land grants and depended on coastal towns for markets and supplies. The only economic activities able to attract significant population contingents towards the interior were the extractive cycles.

When the last great economic cycle of the colonial period – coffee – eventually shifted the locus of production to the state of São Paulo in the latter half of the 19th century, it marked a significant turning point in Brazil's economic history. This would eventually determine its demographic and urban trajectory, and can be cited as the starting point for the country's precocious process of urbanization.

One of the main reasons for this state's ascendancy was its ability to adapt to the abolition of slavery, shifting away from slave labour and attracting a large number of immigrant labourers to its coffee plantations. Some 4 million immigrants are estimated to have entered the country between 1880 and 1930, with 1 million arriving in the period between 1880 and 1890 alone. About 70 per cent of these new arrivals settled in the state of São Paulo (Merrick and Graham, 1979: 65–92).

The introduction of salaried labour would subsequently attract more internal and international migrants, and later help stimulate the formation of an internal market. It

was also in São Paulo that food production was first commercialized, coffee processing mechanized, and railway transport and other urban infrastructure and services promoted. The Brazilian State also began to assume a more direct role in economic affairs around this time, helping attract immigrants from the Old World and subsidizing the construction of private railroads. The alliance between the political power of Rio de Janeiro and the economic power of São Paulo laid the foundations for the dominance of the Rio–São Paulo axis.

Although the data on urban formation in this critical period are sketchy, there can be little doubt that urban localities grew enormously in the period between the 1872 survey and the 1940 census, a period also marked by intense migratory movements (Balan, 1973; Merrick and Graham, 1979). This migration and growth first reflected the economic dynamism of the modern coffee cycle, and then the fallout of the 1929 crash that devastated the coffee economy and its workers. By the time the long period of prosperity generated by the coffee economy was disrupted by the economic crisis, the basic conditions were in place for establishing a new source of economic dynamism and urban concentration: industrialization.

For our purposes, it is worth noting that Brazil's urban transition began much earlier than that in Asia and Africa. The first comparable figures for different regions provided by the United Nations relate to 1950. They indicate that 36 per cent of Brazilians already lived in urban areas at that time, compared to 15 per cent in Africa and 17 per cent in Asia. By then, levels of urbanization had reached 51 per cent in Europe and 64 per cent in Northern America.

2.3 Industrialization, demographic transition and urban growth

The initial impact of the global crisis provoked by the US stock market crash of 1929 caused a sudden drop in world prices for Brazil's agricultural products, and was particularly disruptive of its coffee-based economy centred in the rich lands of São Paulo state. The sudden virtual abandonment of labour-intensive coffee production resulted in substantial levels of out-migration by a rural labour force accumulated over various economic cycles in previous centuries, especially the most recent cycle centred on coffee production in São Paulo.[5]

The two broad trends in population redistribution initiated at this point were to last for the next 50 years. These two simultaneous but contradictory movements involved the progressive occupation of the interior, and the concentration of populations in ever-larger cities (Martine, 1990a and 1994). Declining mortality rates helped accelerate demographic growth, particularly after 1930, feeding and enlarging the pool of potential migrants who would criss-cross Brazil over the next half century.

Population flows towards the interior began in the 1930s and 1940s, with the occupation of new agricultural lands in the states of São Paulo, Parana and Santa Catarina. Rural frontier settlers streamed into the centre-west region in the 1950s and 1960s, and the Amazon region in the 1970s. More importantly from the standpoint of this paper, the first significant migrations to urban centres began after the 1929 market crash and the abrupt severance of international ties following Brazil's balance of payment problems. This

[5] The brief historical introduction to this section is a stylized summary of a large body of literature. See, for instance, Singer, 1968; Ianni, 1971; Balan, 1973; Lopes, 1973; Cano, 1977 [1977 not in Refs]; Mendes, 1978; and Merrick and Graham, 1979, to name but a few. The main arguments presented here and the specific literature on which they are based are presented in Martine and Diniz (1997); Martine (1990a and 1990b), and Diniz (2000).

provided the stimulus for import-substituting industrialization and the modernization of both the productive process and labour relations. Many immigrants in São Paulo who had come to Brazil as agricultural labourers subsequently turned their attention to the industrial and services sectors. Success in these new endeavours would later transform several of these immigrant families into some of the country's most powerful economic leaders.

Intense migration to the cities created housing shortages, public sanitation problems and the first signs of political mobilization. These conditions later helped foster the first government attempts at economic intervention, as well as investments in public health, social welfare, basic education and regulation of the labour market. Although their absorption into cities was deemed to be chaotic, the migrants helped generate a new economic dynamism, particularly in the São Paulo area.

The system of disconnected regional markets that had prevailed for the previous four centuries initially constituted a stumbling block to the new economic activity, but once it got under way, the process of industrialization soon spread across the entire territory. The need to integrate the various regional markets led to investments in ground transportation, facilitating further inter- and intra-regional migrations. The State also took a more active role in the economy and in improving social conditions, particularly in urban areas. By the time the first comprehensive demographic census was taken in 1940, the urban population (as officially defined) had jumped to 31 per cent of the total population. More than half of these city-dwellers lived in the 50 localities in Brazil that had at least 20,000 inhabitants, one-third of which were located in the state of São Paulo.

The rural–urban movements of the 1930s accelerated in the 1940s as a result of the Second World War. Domestic demand for industrial products was boosted by a growing international market, and with immigration curtailed by the war, rural–urban migrants became the main source of labour for industries that were operating double shifts in order to keep up with demand. At this time the government also began to make a more concerted effort to improve the social conditions of urban workers.

A crucial factor at this point was the onset of higher rates of natural population increase as mortality levels declined due to improved sanitation and imported technologies to control contagious diseases. The increased demand for labour and higher demographic growth rates promoted further migration and rapid urban growth. In the period between 1940 and 1950 an estimated 3 million migrants moved to towns and cities from rural areas, equivalent to 10 per cent of the rural population in 1940. The number of cities with at least 20,000 inhabitants rose from 51 to 80, while the level of urbanization rose to 36 per cent in 1950 according to the official definition, and to 21 per cent according to the urban localities' definition.

The underlying factors driving urban growth were reinforced in the post-war period. The continuing decline in mortality rates and constant high levels of fertility (see Table 2 below) led to record new demographic growth rates, which hovered just below 3 per cent per annum from 1950 to 1965. High rates of natural increase caused a dramatic upsurge in Brazil's total population, which grew from 33 million in 1930 to 70 million in 1960. The rural population continued to grow steadily during this period despite a substantial rural exodus, generating a larger pool of potential migrants to the cities. The agrarian structure inherited from colonial times was marked by a strong concentration at both extremes of the land tenure scale, in *latifundios* and *minifundios*, both of which were conducive to out-migration in a context of high natural population increase.

Table 2: Crude annual birth and death rates per thousand head of population, Brazil 1872 to 1960

Period	Crude birth rate	Crude death rate
1872–1890	46.5	30.2
1890–1900	46.0	27.8
1900–1920	45.0	26.4
1920–1940	44.0	25.3
1940–1950	43.5	19.7
1950–1960	44.0	15.0

Source: IBGE, *Estatísticas do Século XX*.
http://www.ibge.gov.br/seculoxx/arquivos/populacao.xls

Meanwhile, Brazil was restructuring its economy through the modernization of communications and transport and provision of basic infrastructures. Central planning was strengthened, bringing incentives for import-substituting industrialization, national automobile production and massive road building programmes. The differentials between rural and urban wages and lifestyles reinforced the attraction of cities, which, coupled with improved transport and communications, resulted in some 7 million people moving to towns and cities in the 1950s. This figure corresponded to approximately 21 per cent of the rural population (official definition) at the beginning of the decade.

The government appears to have had a contradictory influence on population redistribution in the 1930s and 1940s (Martine, 1992). Explicit policies were generally directed at opening up segments of the country's vast interior, subsidising the rapid occupation of the Parana frontier in the 1930s, promoting the construction of yet another planned interior capital (Goiania) in 1937, and channelling migration flows towards the centre-west region in the 1940s. Meanwhile, stimuli aimed at strengthening industrial production were having a significant effect despite being meagre by modern standards. In conjunction with attempts to improve living conditions in cities, strengthen the national market and improve transport and communications, these encouraged rural–urban migration and urban concentration.

The post-war era witnessed a more definitive refutation of traditional canons regarding the international division of labour, and Brazil's role as a provider of raw materials and importer of industrialized products. By the mid-1950s political platforms backing import-substituting industrialization were winning important electoral victories, while state intervention and planning, which was primarily aimed at promoting vigorous industrialization and the integration of the national market, came into its own. A key initiative was the creation of a national automobile industry, which not only generated upstream and downstream economic linkages, but also made it feasible to occupy and integrate the interior through more flexible modes of transport.

The desire to integrate the national market also prompted the creation of SUDENE – a regional development agency covering the densely populated and impoverished northeast – as well as the relocation of the nation's capital from Rio de Janeiro to Brasília in the heartland of the vast unoccupied interior. It also stimulated the construction of a network of highways linking Brasilia to the centre-south and, later, to the vast and largely unpopulated northern region. The main thrust of the vigorous measures enacted during this era favoured rural–urban migration and greater population concentration in industrial areas.

In demographic terms, the 1950s also witnessed the country's highest annual rates of natural population increase (3.0 per cent). A combination of strong demographic growth

and rural–urban migration saw the number of cities with at least 20,000 inhabitants rise from 85 to 154, and the level of urbanization increase significantly between 1950 and 1960, according to any definition of ‘urban’.

Table 3 below presents summary information on changing levels of urbanization and rates of urban and rural growth for the entire period between 1940 and 2000. Defining the ‘urban’ population as that of localities with at least 20,000 people, this table shows striking urban growth throughout the period, with a marked surge in the 1950s and 1960s.

Government interventions to intensify industrialization reinforced the original centres of industrial growth. Thus, the city of São Paulo and its surrounding regions assumed a hegemonic role in the national economy as urbanization and import-substituting industrialization progressed, deriving locational advantages from its external economies, the size and power of its hinterland market, and the dynamism of its entrepreneurial class. Conversely, the Rio de Janeiro region showed a relative decline as economic conditions stagnated with the transfer of the capital city to Brasilia.

The 1960s were marked by important political and social transformations, most notably the military takeover of 1964. This led to the imposition of a conservative modernization development model, which focused on technical improvements to agricultural and industrial production while maintaining the previous highly stratified social structure through rigid control over social movements. The ‘Brazilian Miracle’ of the late 1960s and early 1970s was fuelled by a heightened belief in the merits of central planning and technocracy, combined with good economic decisions and a highly favourable international context.

Table 3: Percentage of total population living in urban areas and annual growth rates in the urban, rural and total population of Brazil between 1940 and 2000

Period	% Urban at P1	Urban growth rate*	Rural growth rate	Total population growth rate
1940–1950	19.5	4.6	1.7	2.4
1950–1960	24.3	6.2	1.8	3.0
1960–1970	32.7	5.4	1.5	2.9
1970–1980	41.6	4.9	0.4	2.5
1980–1991	52.3	2.6	-0.1	1.9
1991–2000	62.7	2.2	0.5	1.6
2000–2007	65.6	NA	NA	1.2

Source: IBGE, demographic censuses and 2007 population count
(*) ‘Urban’ denotes localities of 20,000 or more inhabitants, 'rural’ includes the remainder of the population.

Basic infrastructures improved rapidly, and spectacular advances were made in transport as locally produced buses, trucks and cars increased traffic in every direction. A prevailing mood of arrogant optimism encouraged territorial expansion and the integration of previously isolated regions. Meanwhile, geopolitical considerations stimulated the occupation of open spaces, including attempts to colonize the Amazon region – where most of the new population actually ended up concentrated in urban

areas, despite the agricultural pretensions of the settlement schemes. Dramatic improvements in telecommunications linked the far corners of this vast country, taking images of the bright lights of the bigger cities into less-developed regions and further motivating potential migrants.

Such pull factors were reinforced by push factors in rural areas.[6] The new government introduced Green Revolution technologies that promised to modernize agricultural production through increased productivity rather than the redistribution of land, and provided subsidized credit to encourage farmers to adopt these technologies. However, the logic behind bank loans implied possession of legal title deeds to land, which inevitably favoured larger commitments over piecemeal loans. Since agricultural loans were highly subsidized at this time, larger farmers were guaranteed financial gains simply by applying for loans. This stimulated land purchases and land takeovers, not only to mechanize production, but also for purely speculative purposes.

Such measures did have a noteworthy impact on the modernization of agricultural production and productivity, especially in export-oriented crops, and later in energy-substituting crops. This agricultural transformation also had the desired effect on industrial production, as demand for machinery and chemical inputs increased. With hindsight it can be seen that through these mechanisms Brazil implemented one of the most rapid agricultural transformations of any developing country.

In the short term, however, these measures had severe negative social impacts. Only a small share of the total volume of subsidized credit went to the small farmers who constituted the vast majority of all agricultural producers. A significant proportion of their plots were soon taken over by larger farmers and speculators. Smaller farmers of all types – squatters, sharecroppers, tenants and small owners – were pushed off the land in droves while the share of large farms increased. Between 1970 and 1985 this resulted in a sharp reversal of the trend that had persisted from 1920 to 1965, when small farmers accounted for an increasingly large segment of all producers and the total area under production. At the same time, mechanization accentuated seasonal fluctuations in demand for labour, further increasing the instability of agricultural employment and prompting a massive rural exodus.

Thus, Brazil went through a mechanical revolution, a chemical revolution and a demographic revolution, telescoping into a few years three processes that had each taken much longer to mature in rich countries. Brazil had very little agricultural machinery before 1960, but this quickly changed with the introduction of an industrial park and subsidized credit to purchase machinery. The package of chemical fertilizers, herbicides and insecticides brought in by the Green Revolution had the same effect. Each of these revolutions would have generated considerable out-migration by itself, but the simultaneous mechanical and chemical transformations at a time of intensified population growth yielded massive out-migration, rapid urbanization and headlong urban growth.

Table 4 below presents the estimated rural–urban migration in each decade between 1940 and 2000. As such estimates require data on rural and urban fertility and mortality, which are unavailable by city size; the figures presented here refer to net out-migration from ‘rural’ to ‘urban’ areas, as defined in official data.[7]

[6] This discussion of agricultural modernization and its consequences is based on Martine, 1987 and 1992.

[7] Estimated out-migration tends to be slightly lower when using the official definition rather than one based on city size not administrative function, because the ‘rural’ population has a smaller pool of potential migrants. This effect may be diminished slightly by the fact that use of the

These data show a clear intensification of rural–urban migration throughout the period between 1940 and 1980, peaking in the 1960s and 1970s with a total of 31 million net migrants to urban areas. Rural–urban migrants corresponded to 35 per cent of the country's rural population at the beginning of the 1960s, and 42 per cent in the 1970s. Altogether, some 41 million net migrants made their way from rural to urban areas between 1940 and 1980. Setting aside the well-known problems of international comparisons, the magnitude and speed of this exodus can only be viewed as impressive.

Despite a dramatic drop in rural–urban migration after 1980, rural–urban migrants still equated to about one-quarter of the respective rural populations enumerated at the beginning of each decade – much less than in the 1960s and 1970s, but more than in the 1940s and 1950s. The origins and manifestations of these changes after 1980 are discussed in the next section.

Table 4: Estimates of net rural–urban migration (in millions) by gender, Brazil 1940–2000

	1940–1950*	1950–1960*	1960–1970#	1970–1980#	1980–1990º	1990–2000º
Male	Na	Na	6.6	8.6	4.0	4.3
Female	Na	Na	7.0	8.8	5.2	5.2
Total	3.0	7.0	13.6	17.4	9.2	9.5
R->U migrants as % of rural population at the beginning of the decade[8]	10%	21%	35%	42%	24%	27%

Sources: Calculated from data in IBGE and demographic censuses (using official definitions of 'rural' and 'urban')

* From Martine (1987: 60–61)

From Carvalho and Garcia (2002), tables 92, 185 and 284

º From Rodriguez and Busso (2009) page 120

One characteristic of migration flows that became more accentuated throughout the period was the higher rate of female out-migration from rural areas, especially among younger age groups. This process resulted in a 'masculinization' of rural areas, evident in analyses of sex ratios, which show a systematically higher proportion of women in urban areas and men in rural areas. The feminization of migration is particularly marked in the metropolitan regions (Ramalho and Targino, 2004), with migration flows apparently composed of increasingly younger age groups (Beltrão *et al.*, 2004; Camarano and Abramovay, 1999.

One of the defining characteristics of Brazilian urbanization between 1930 and 1980 was the progressive concentration of populations in larger cities. The urban growth rates in different-sized settlements shown in Table 5 (based on localities with over

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official definition also alludes to a larger target of 'urban' destinations for migrants. Nevertheless, since rural-urban migration involves a preponderance of movement towards progressively larger centres, it can be presumed that rural-urban movements are under-estimated in these figures. In any event, the figures on rural-urban migration shown in Table 4 should be taken as rough indicators of movement rather than precise estimates.

[8] It should be noted that the actual number of rural–urban migrants is inflated by children born after the date of the first census in the period.

20,000 inhabitants) are consistent with roughly equal growth rates in localities of all sizes. This is partly due to the fact that dynamic cities quickly move from one size class to another between one decade and the next. Efforts to identify such cities and the factors underlying their rapid growth are considered later in this study.

The rough outlines of the urbanization process can be seen in a combination of indicators presented in Table 6 (increase in the number and size of cities) and the changing share of national population growth that can be attributed to different metropolitan areas (Table 7).

Table 5: Annual population growth rates in rural areas and different-sized urban settlements, Brazil, 1940–2000*

City size class (in thousands)	1940–1950	1950–1960	1960–1970	1970–1980	1980–1991	1991–2000
Rural	***1.7***	***1.8***	***1.5***	***0.4***	***0.6***	***0.5***
20-50	3.7	6.1	4.4	4.2	3.1	2.1
50-100	3.0	5.3	5.1	4.6	2.8	2.1
100-500	3.3	5.1	5.4	4.9	3.2	2.4
500 +	4.3	5.1	4.5	3.9	2.0	2.2
Total urban	***3.9***	***5.2***	***4.7***	***4.2***	***2.6***	***2.2***
Total population	***2.3***	***3.0***	***2.9***	***2.5***	***1.9***	***1.6***

Source: IBGE, demographic censuses; authors' calculations
(*) 'Urban' denotes localities of 20,000 or more inhabitants, 'rural' includes the remainder of the population. Urban growth rates are for the cohort of urban settlements that were in the size class at the start of the decade.

Table 6 shows that the number of localities with 20,000 or more inhabitants increased at a steady pace from 53 in 1940 to 660 in 2000. Most of that increase was concentrated in smaller cities: those with fewer than 100,000 inhabitants systematically make up around 80 per cent or more of the total number of cities throughout the period under analysis. With their smaller size, their share of the total population only fluctuated by about 20–22 per cent.

At the other extreme, around 5 per cent of all cities had a population of 500,000 or more. Their share of the total urban population grew from 54 per cent in 1940 to 64 per cent in 1970 (largely due to the fact that several cities moved up a size category),[9] dropping slightly to around 60 per cent in 1980 and 1991, and then rising to 65 per cent in 2000. This significant rise is largely due to the reclassification of several clusters of smaller cities as 'agglomerations' in this data set. The implications of these more recent trends are spelled out in the next section, when the period of mature growth is discussed.

Most of this massive population increase in cities with over 500,000 inhabitants actually occurred in cities of at least 1 million. It is not possible to subdivide this upper category for the entire period between 1940 and 2000 with the available data, but it can be calculated that cities with a million or more inhabitants accounted for 85 per cent of the population in the 500,000 + category in 1991, and 84 per cent in 2000 (not shown).

[9] There is not necessarily a correlation between the growth rate of a city size class and the dimensions of its absolute growth. The larger the city, the smaller the impact of in-migration on growth rates, although the absolute increment will tend to grow due to natural increases in the native and migrant population plus in-migration.

Meanwhile, the category covering cities of 100,000–500,000 inhabitants fluctuated considerably over the decades according to the trajectory of a few dynamic cities. Overall, the most striking characteristic of Brazilian urbanization is the extent to which the majority of the country's urban population is concentrated in a few large cities (Brito and Marques, 2005:4; Brito and de Souza, 2005).

Table 6: Number of cities and urban population* distribution by class of city size,

City size class (in thous ands)	Number of cities							% of urban population						
	1940	1950	1960	1970	1980	1991	2000	1940	1950	1960	1970	1980	1991	2000
20–50	31	51	92	148	238	354	414	11.2	12.0	12.7	11.7	11.6	12.9	11.0
50–100	11	18	28	43	71	114	131	8.7	9.9	8.9	7.6	7.4	9.2	7.8
100–500	8	9	19	37	60	72	82	26.0	20.1	14.0	16.7	19.4	18.2	16.1
500+	3	4	8	11	14	20	33	54.1	58.0	64.4	63.9	61.6	59.7	65.0
Total	53	82	147	239	383	580	660	100	100	100	100	100	100	100

Source: IBGE, demographic censuses; authors' calculations
* 'Urban' denotes localities of 20,000 or more inhabitants; 'rural' includes the remainder of the population.

Indeed, most absolute growth throughout the period occurred in progressively larger cities and metropolitan areas. Despite the intense pace of urbanization in the period between 1940 and 1950, rural areas and small localities with fewer than 20,000 inhabitants still accounted for 59 per cent of the country's total population growth. Rural areas contributed much less to total growth in the 1960s and 1970s, and actually made a negative contribution in the 1980s. This decline may be largely ascribed to the massive international emigration triggered by the economic crisis of the 1980s (Carvalho, 1996). Looking at the entire sweep of population increments in Brazil in the period between 1940 and 2000, it can be seen that rural areas accounted for 17.8 per cent of the country's growth, and urban areas the other 82.2 per cent.

2.3.1 Overview of Brazil's urban explosion

To recapitulate, Brazil's precocious urban transition can be attributed to a combination of factors. In the first few centuries, the model of settlement imposed on this huge country by its Portuguese colonizers, concern with defence, the various riches exploited in Brazil's internal regions at different historical moments, and the dominance of the landowning classes led to the creation of a geographically scattered and disconnected arrangement of cities along the coastline. The abolition of slavery, onset of immigration, modernization of productive processes and emergence of new relations of production in a vastly successful coffee cycle in the state of São Paulo helped create a dynamic new growth pole, setting the stage for the rapid urban transition that began in the last decades of the 19th century.
The economic crisis of the 1930s and resulting debt crisis triggered a switch to import-substituting industrialization. In this context, the stimuli of wartime production and state intervention in key sectors such as transportation and communication, combined with accelerated demographic growth, resulted in an intense process of urbanization and urban growth that persisted for half a century. The conservative approach to agricultural modernisation adopted by the technocratic military regime acted as a

particularly effective stimulus to urban migration during a peak period of demographic growth.

Brazil's urban transition was established on the basis of the multi-nucleated urban system inherited from the colonial period, and the rise of a more modern dynamic growth axis located in the São Paulo-Rio de Janeiro region. These two systems were integrated through import-substituting industrialization originating in the dynamic economic region dominated by the city of São Paulo. Despite political discontinuities, this model was reinforced throughout the period between 1930 and 1980, providing the basis for profound social, economic, political and demographic transformations.

As migration flows are normally directed into more dynamic regions, it is not surprising that the fastest growth occurred in the southeast, where São Paulo and Rio de Janeiro are located. But the changes affected the entire country, resulting in its early and rapid transformation from a rural/agricultural nation into an urban/industrial one. This extraordinarily rapid transformation left profound scars on Brazil's urban society, many of which could have been avoided if a different approach to urban growth had been adopted. These are discussed in a later section.

In concluding this sub-section, it is interesting to note the (understandable) paradox that explicit government opposition to urbanization, population concentration, and their increasingly tangible negative effects, grew rapidly throughout the period. A variety of explicit measures were deployed to stem or prevent urban growth, ranging from roadblocks and fiscal measures to integrated migration policies. Various efforts were made to direct migration into unoccupied and undeveloped rural areas, first to the Parana frontier, then the centre-west region and finally the Amazon region. Unfortunately, these areas' relative attractiveness and absorptive capacity diminished as the pool of potential migrants expanded in a period of rapid demographic growth. In the end, the last wave of frontier colonization in the Amazon region generated much larger growth in the region's urban population than in its rural population.

The inability to control population movements and resulting influx of migrants into urban areas generated opposition among urban administrators and a series of policies and programmes aimed at reducing the negative impacts of this rapid growth. These are discussed in more detail later in this paper.

2.4 The surprise of the 1980s: declining urban concentration

After half a century the pattern of constantly rising urban growth rates and increasing population concentration in larger cities was firmly entrenched in the Brazilian landscape. So the country was astonished when the results of the 1991 census showed a large decline in urban growth rates, especially in the largest cities. There was outcry as mayors across the country accused the national census bureau of perpetrating gross underestimations. Federal funds for municipalities are apportioned according to population size, and with previous trends showing continuous growth and concentration, local politicians expecting another demographic windfall were dismayed by the figures showing a deceleration in population increase.

The remarkable fall in rates of urban growth and concentration after 1980 are evident in Tables 3 to 6, shown in the previous sub-section. The overall annual urban growth rate dropped from 4.2 to 2.6 between the 1970s and the 1980s, with a significant reduction in cities of all city sizes. This decline persisted through the more recent intercensal period, with a large drop in growth rates in practically every category of city size during the 1990s. True, the number of cities continued to grow, and absolute increases in urban population remained impressive throughout the 1980s and 1990s, but this was

increasingly attributable to demographic inertia and confined to the urban peripheries of larger cities. The frenetic pace of urbanization and concentration that had characterized the previous five decades had clearly slowed considerably.

In addition to the striking reduction in rural–urban migration and urban growth rates, the trend for Brazil's urban populations to concentrate in ever-larger cities eased markedly in the period after 1980. Table 7 shows that in the entire period between 1940 and 1970, and even during the 1970s, the nine cities officially defined as 'metropolitan regions' (MRs) grew rapidly and absorbed a huge proportion of total national growth. Thus, between 1940 and 1970, these nine MRs grew at an annual rate of 4.5 per cent and accounted for 34 per cent of national growth. Although their collective growth rate declined somewhat in the 1970s, their contribution to national population growth swelled to over 40 per cent.

Table 7: Metropolitan region growth rates and contribution to national population growth, Brazil, 1940–1970, 1980–1991, 1991–2000

Metropolitan region	Annual growth rate				% of national population growth			
	1940–1970	1970–1980	1980–1991	1991–2000	1940–1970	1970–1980	1980–1991	1991–2000
São Paulo	5.64	4.46	1.88	1.70	12.6	17.2	10.2	11.0
Rio de Janeiro	3.71	2.45	1.26	1.54	8.8	7.3	3.7	6.3
Recife	3.99	2.74	1.22	2.32	2.4	2.1	1.8	2.8
Belo Horizonte	5.47	4.70	2.42	2.46	2.5	3.7	3.0	3.7
Porto Alegre	4.48	3.84	2.16	1.73	2.2	2.8	2.7	2.2
Salvador	4.19	4.43	3.04	2.40	1.6	2.4	2.6	2.6
Fortaleza	4.36	4.29	2.67	2.67	1.4	2.1	2.6	2.7
Curitiba	4.30	5.80	3.03	3.46	1.1	2.4	2.0	3.1
Belem	3.93	4.30	3.43	3.37	0.9	1.4	1.4	1.7
All metropolitan regions	**4.54**	**3.79**	**1.99**	**2.00**	**33.4**	**41.3**	**30.0**	**36.2**

Sources: IBGE, demographic censuses, cited in Baeninger (2004) for 1970–2000 data and Martine (1994) for 1940–1970 data

The 1980s saw a decline in both the growth rates of these great cities and their contribution to overall population increase. Thus, the category's annual growth rate dropped from 3.8 per cent in the 1970s to 2.0 per cent in the 1980s, while its contribution to national population growth slipped from 41 per cent to 30 per cent. The drop was particularly noticeable in the national economic capital of São Paulo, whose annual growth rate declined from 4.5 per cent to 1.9 per cent, and contribution to total growth fell from 17 per cent to 10 per cent. The metropolitan regions did contribute more to national growth in the 1990s, particularly Rio de Janeiro, Curitiba and Recife, but their overall growth rate remained the same as in the 1980s.

The following pages address some of the key causes of this abrupt change in urban growth, mainly focusing on three factors: rapidly declining fertility, the impacts of the profound economic crisis that began in the late 1970s, and the broader process of deconcentration of economic activity from the dominant pole of São Paulo.

a) Declining fertility and the components of urban growth

The comparison of urban growth rates with those of the total population in Table 5 shows a clear convergence between the two. Urban growth rates were highest when natural population increase peaked in the 1950s and 1960s and began to fall as natural increase declined, indicating that Brazil's rapidly declining fertility is the key to understanding the more recent drop in growth rates.

The fact is that Brazil has experienced a remarkable decline in fertility over the last 40 years. According to the latest Demographic and Health Survey data (Alves, 2008), its total fertility rate fell from a high level of 6.3 in the mid-1960s to a below-replacement level of 1.8 in 2006. Brazil did not have widespread state-sponsored family planning programmes, but the speed of its slide to below replacement-level fertility surpasses that of several countries that have had aggressive family planning programmes.

Implicit, rather than explicit, policies are deemed to have had the greatest impact on this spectacular decline (Martine, 1996), which occurred during a period of far-reaching social change spanning both rapid economic growth and economic and political crises. Government-induced modernization, which began in the 1950s and accelerated in the 1960s, eventually had a significant impact on people's motivation and ability to control their fertility. Institutional changes in health, security and communications triggered other key influences; rapid urbanization was also a major factor in accelerating other traditional determinants by reducing the incentives for large families and increasing deterrents to unlimited reproduction (Martine, 1996).[10]

The rapid decline in fertility affected urban growth in two ways. First, despite remaining higher in rural areas, fertility rates eventually fell significantly in all regions and parts of the country, helping reduce the pool of potential rural–urban migrants. Second, the decline was responsible for reducing rates of natural population increase in urban areas – not only among the urban natives, but also among migrants, who came to the city with higher fertility rates and a disproportionate number in reproductive age groups.

Although we lack the data required for more rigorous analysis of the evolution of the different components of urban growth over time, some preliminary estimates might help illustrate the nature and significance of recent changes, if not their exact dimensions.[11] According to these rough estimates, rural–urban migration was the primary source of urban growth in the period between 1950 and 1980, its contribution hovering slightly above 55 per cent in all three decades. The situation then changed dramatically in the 1980s, when rural–urban migration accounted for less than 30 per cent of urban growth. By this time the rural population had declined to well below urban levels, thus reducing the contribution of rural–urban migration to urban growth. Moreover, the severe economic crisis of the 1980s undoubtedly affected migration patterns, leading to (among other things) a significant increase in migration out of Brazil. Although rural–

[10] For recent studies on the role of urbanization in declining fertility in Africa, see White *et al*. (2008) and Garenne (2008).

[11] Since such analysis requires data on fertility and mortality, and (as already noted) these are only available in relation to officially defined rural and urban areas (and not city size classes), the rough estimates provided here only refer to the 'official' urban population. Obviously, such estimates are made even more imprecise by the fact that an unknown proportion of all urban 'growth' can be ascribed to the reclassification of rural areas as 'urban' areas. In any event, it can safely be assumed that this proportion of overall growth is relatively small in comparison to the contributions that rural–urban migration and natural population increase make to city growth. Also, areas where there has been net in-migration are more likely to be reclassified.

urban migration became slightly more significant in the 1990s, it still accounted for only one-third of all urban growth.

Overall, natural population increase in cities has become increasingly important in the last few decades, and will inevitably predominate in the future despite lower urban fertility rates. Migrants from a small and declining rural population (which amounted to less than a fifth of the urban population in 2000) cannot make a large contribution to urban growth rates.

Table 8: Estimated relative contributions to urban growth from rural–urban migration and natural population increase in urban localities, Brazil, 1950–2000*

Period	Total increase in urban areas (in thousands) (A)	Estimated rural–urban migration + reclassification (in thousands) (B)	Natural increase (in thousands) (A) – (B)	% of growth due to rural–urban migration + reclassification	% of growth due to natural increase
1950–1960	12,521	7,000	5521	55.6	44.4
1960–1970	21,786	12,000	9,786	55.1	44.9
1970–1980	28,351	16,000	1,2351	56.4	43.6
1980–1990	30,455	9,168	21,287	30.1	69.9
1990–2000	26,963	9484	17,479	35.2	64.8

Sources: IBGE, demographic censuses and sources cited in Table 4
* 'Rural' and 'urban' defined here in relation to the official census definition

b) The lost decade and its sequel: economic crisis and urban growth

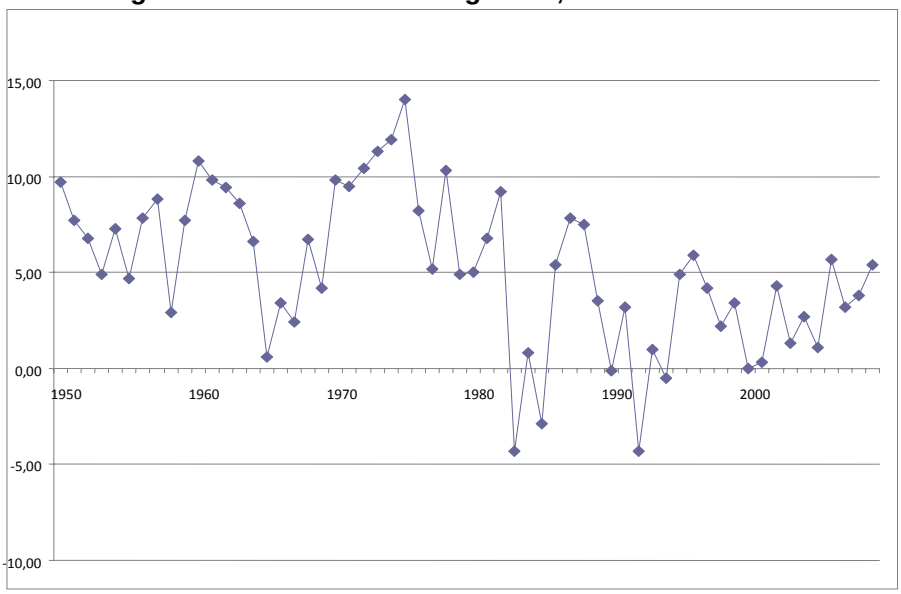
The extraordinary economic growth Brazil experienced between 1968 and 1974 has been called an 'economic miracle'. The abundant cheap external capital available during this period encouraged the military government to borrow heavily in order to improve the country's infrastructure and integrate its farthest regions. This seemed sensible at the prevailing interest rates, but the country's economic trajectory was permanently altered by the oil crisis following the Yom Kippur War. The steep hike in international interest rates after the second oil shock at the end of the 1970s undermined the economy of various debtor countries, including Brazil, whose external debt grew exponentially for many years after this shock despite comparatively low rates of investment. Only in recent years has the debt burden finally been brought under control.

Industrial expansion was severely curtailed in the early 1980s, not only because of the crisis but also because rampant financial speculation interfered with production. Inflation soared, plunging the country into a lengthy recession and stagnation. In 1981, for the first time in recorded history, its gross national product (GNP) registered a negative growth rate (see Figure 3 below). Over the entire decade, annual GNP growth rates averaged a modest 1.5 per cent – lower than the average annual population growth for the period.

Between 1983 and 1993 the country changed its currency five times, implemented several different indices to measure galloping inflation, and appointed successive

finance ministers who promoted the adoption of nine different economic stabilization programmes. This succession of negative trends and futile experiments with stopgap measures during the 1980s earned the period the title 'The Lost Decade'.

Figure 3: Evolution of GNP growth, Brazil 1948-2006



Source. IBGE, Séries Estatísticas, Contas Nacionais
http://www.ibge.gov.br/series_estatisticas/exibedados.php?idnivel=BR&idserie=SCN02

Nevertheless, the woes of the 1980s undoubtedly helped trigger other transformations that provided opportunities for longer-term change. Politically, there was the overthrow of the military regime and the reintroduction of democracy. In the economy, the prolonged crisis marked the end of the import-substitution cycle, an opening up to the external market, the privatization of key State economic ventures, and the reduction of long-term government planning and intervention. Crippling subsidies to inefficient firms were slashed and 'tertiarization' became a common cost-cutting measure.[12] In brief, Brazil was painstakingly forced to open up to the global market and discipline its economy, with considerable prodding from international financing establishments.

The dire economic situation in the 1980s inevitably had significant social impacts in terms of increased unemployment and underemployment, poverty and inequality. The larger metropolises, which had been more dynamic in previous years, were the most affected as the crisis transformed the structure of social and geographical mobility. Increasing turnover rates and reductions in the rhythm of job creation in the formal sector, especially in the industrial and construction sectors, had a particular impact on the metropolitan regions (Januzzi, 2001: 18–27). Contrary to previous tendencies, unemployment now affected well-educated individuals, not just women, the young and the poor (Pochmann, 2000). The economic downturn caused by the crisis of the 1980s coincided with the accelerated process of industrial deconcentration from São Paulo that had begun in the 1970s, which is discussed in greater detail below.

In some ways, the social consequences of the crisis were even more extensive in the 1990s than they had been in the previous decade. Average economic growth was even slower than it had been in the 1980s (Pochmann, 2000). Unemployment rates in the

[12] Here 'tertiarization' refers to the strategy of subcontracting services and farming out part of the productive process to other business enterprises in order to reduce production costs.

powerful metropolitan region of São Paulo fluctuated between 10 per cent and 16 per cent in the early 1990s, and the recession of 1991–1992 had serious negative implications for previously prosperous interior regions as well as the metropolitan regions. Employment expanded at a slower rate than the average for the 1980s as labour-saving technologies were adopted and newly globalizing firms pared down staff at every level (Januzzi, 2001: 26–27). Formal sector occupations continued to lose ground while informal sector activities expanded. By 2000, Brazil had the third-highest number of unemployed people in the world, and only 54 per cent of the occupied workforce received a salary (Pochmann, 2008).

Reduced employment opportunities in the larger and traditionally more dynamic cities had an impact on the preferential direction of migration flows. There are numerous anecdotal accounts of downward mobility in metropolitan areas at this time, with liberal professionals serving as cab drivers and skilled industrial workers acting as handymen or trying their luck on the agricultural frontier. This type of exodus appears to be confirmed by analysis of census data (Matos and Ferreira, 2004).

Significant return migration flows were also registered from the southeast, particularly to the northeast, which was traditionally the major region of out-migration. Thus, the number of returning migrants, as identified by the census, increased by 127 per cent between the 1970s and the 1980s, and by an additional 42 per cent in the 1990s. People evidently preferred to rely on the solidarity of their home communities and kinship networks during a time of stress rather than continuing to fight for survival in big cities. Emigration had never been a significant phenomenon in Brazil before, but the 1980s witnessed the first substantial movements of people out of the country. These have continued to intensify – mainly to North America, but also to Japan and more recently to Europe as well.

In this context, smaller cities also began to drain off some of the migratory flows previously focused on the metropolitan regions (Targino and Figueiredo , 2001). The MRs therefore had noticeably lower rates of growth than smaller agglomerations in both the 1980s and 1990s, although this difference decreased in the latter period, as shown in Table 9 below. The nine MRs had a collective annual growth rate of 2 per cent in the 1980s and 1990s, while the 17 cities defined as ‘metropolitan agglomerations’ grew at 3.31 per cent per annum in the 1980s and 2.79 per cent in the 1990s. Another 35 ‘urban agglomerations’ also grew at a considerably faster rate than the metropolitan regions.[13]

Nevertheless, it should be noted that despite their relatively stagnant growth over these two decades, the nine MRs still had a bigger collective absolute population increase (16.7 million) than that of the 52 next largest cities (15.4 million) between 1980 and 2000.

It is also worth noting that the MRs’ declining growth rates and continuing dominance in contributions to overall urban growth actually tell two different stories for the post-1980 period. Table 10 below clearly shows that the core municipality (termed ‘nucleus’ in this table) of each metropolitan region – which had generally been responsible for much of the city’s key economic activity and housed the majority of its more affluent population – grew at a much slower pace in the 1980s and 1990s, while their peripheries or suburbs continued to grow apace.

[13] The list of ‘metropolitan agglomerations’ and ‘non-metropolitan agglomerations’ was drawn up by IPEA/IBGE/UNICAMP (2002), and the data quoted here are from Baeninger (2004).

In Brazil the ‘suburbs’ are called peripheral areas, in reference both to their geographic location and the social condition of their residents, who are generally low-income families, although there are a few gated communities and other enclaves. As shown in Table 9, these ‘peripheral’ or ‘suburban’ municipalities are still experiencing rapid growth, as poorer migrants and indigenous people continue to flock to outlying districts in search of cheaper housing. This process of ‘suburbanization’ was first observed in the 1970s and accelerated considerably in the 1980s, when data from the 1991 census showed large discrepancies in the growth rates of core and peripheral municipalities (Martine, 1994: 11; Cunha, 2002: 41). This pattern was consolidated in the 1990s, when six of the nine metropolitan regions grew by less than 1 per cent per annum in the core municipality, while peripheral municipalities in all nine regions showed vigorous growth (Baeninger, 2004: 4).

Table 9: Absolute and relative growth of all metropolitan regions and all urban agglomerations, Brazil 1980–1991 and 1991–2000

Type (and number) of large urban areas	Annual growth rate (%)		Absolute population increase (in thousands)	
	1980–1991	1991–2000	1980–1991	1991–2000
Metropolitan regions (9)	2.00	1.99	8,387	8,290
Nucleus of MRs	*1.36*	*1.10*	*3,612*	*2,693*
Periphery of MRs	*2.79*	*3.68*	*4,775*	*5,597*
Other metropolitan agglomerations (17)	3.31	2.79	3,942	3,675
Other non-metropolitan agglomerations (35)	3.21	2.33	4,367	3,435

Source: IBGE, demographic censuses, cited in Baeninger (2004), table 2, and Torres, 2002, table 1, p. 149

Table 10 below confirms the existence of a wide income gap between nuclear and peripheral municipalities in all MRs in 2000. It is hard to overstate the importance of these differences between growth rates and household incomes in nuclear and peripheral municipalities. On the one hand, they show that the Brazilian urban transition is advanced but ongoing, as there is still considerable dynamic growth in key localities. On the other hand, the discrepancy between household incomes in nuclear and peripheral municipalities, with an average gap of 56 per cent for the nine MRs, is a primary indicator of the kinds of social challenges that still have to be met (Torres, 2002: 150).

Table 10: Average head of household income in nuclear and peripheral municipalities of metropolitan regions, Brazil, 2000

Metropolitan region	Average income*		Income differential (%)
	Nuclear municipality	Peripheral municipality	
São Paulo	1,480	968	65.4
Rio de Janeiro	1,354	706	52.2
Recife	1,025	557	54.3
Belo Horizonte	1,316	575	43.7
Porto Alegre	1,500	680	45.4
Salvador	894	440	49.2
Fortaleza	847	352	41.5
Curitiba	1431	632	44.2
Belem	860	502	58.4
All metropolitan regions	**1309**	**734**	**56.1**

Source: IBGE, demographic census of 2000, cited in Torres (2002), table 2, p. 149
*In Reais (R$) of 2000, with US$1.0 = R$1.8

The social characteristics of these peripheral areas have earned them the name 'urban frontiers' (Torres, 2004). These regions continue to attract migrants and grow rapidly because they represent an escape route for the poor; unsurprisingly, these are the areas that struggle with precarious infrastructure, slum growth, informal settlements, environmental conflicts and violence (Torres, 2008). A later section of this paper shows the extent to which these issues have conditioned the nature and size of the social and environmental problems currently affecting Brazilian cities.

c) Deconcentration from the São Paulo growth pole[14]

As shown in Table 11 below, the ascendancy of São Paulo state and its capital is clearly reflected in the demographic concentration between 1940 and 1970. During this period, urban growth in the state outstripped that in the rest of the country, and its cities accounted for exactly half of the absolute increase in Brazil's total urban population. The MR of São Paulo in turn accounted for more than two-thirds of the state's absolute urban growth in that period, despite its relatively developed urban network. At the peak of regional concentration in 1970, the state of São Paulo, with only 2.9 per cent of the national territory and 19 per cent of its population, accounted for 39 per cent of Brazil's GNP and 58 cent of its industrial production – 78 per cent of which was concentrated in the metropolitan region of São Paulo (Diniz, 2002a: 248).

A gradual process of industrial deconcentration from the São Paulo MR began unnoticed in the late 1960s and intensified in the 1970s. Regionalized national accounts for the period show that São Paulo's relative contribution to Brazilian GNP fell for the first time between 1970 and 1980. These apparently minor changes did not attract a great deal of attention at the time, partly because demographic growth in the São Paulo MR continued at a rapid pace, especially in absolute terms. Indeed, the state of São Paulo increased its share of national urban growth to 56 per cent during the 1970s, with some 55 per cent of that growth concentrated in the MR of São Paulo. Nevertheless, the trend towards deconcentration was beginning to intensify, and this

[14] There is a vast body of literature documenting and analysing the deconcentration from São Paulo, including, *inter alia*, Azzoni, 1986; Pacheco, 1998; Negri, 1996; Diniz, 2000a, 2002a and 2002b. This section summarizes the main trends and relates them to demographic processes between 1940 and 1970.[]

MR saw its share of industrial production fall from 43 per cent to 25 per cent between 1970 and 2000 (Diniz, 2002a: 256).

Table 11: Absolute and relative growth in urban population, Brazil and São Paulo 1940–2000*

Categories	Annual growth rate (%)				Absolute increase (in thousands)			
	1940–1970	1970–1980	1980–1991	1991–2000	1940–1970	1970–1980	1980–1991	1991–2000
Brazil, urban population	4.5	4.2	2.6	2.2	19,400	14,309	27,518	20,265
São Paulo state, urban population	5.3	4.5	2.2	1.9	9,684	8,046	5,506	4,872
São Paulo MR	5.6	4.5	1.9	1.7	6,569	4,451	2,856	2,526
Other cities in São Paulo state	4.7	4.6	2.8	2.2	3,115	4,595	2,650	2,346

Source: IBGE, demographic censuses
(*) 'Urban' refers to localities of 20,000 or more inhabitants, 'rural' includes the rest of the population.

In retrospect, such changes can largely be attributed to a combination of geopolitics and inherent economic logic. Geopolitical reasons had prompted the military government to offer subsidies in order to encourage the occupation and integration of the entire country, creating and protecting industrial zones in different regions. Entrepreneurs simply took advantage of the cornucopia of fiscal and other incentives offered by the government, and established subsidiary plants in different parts of the country (Diniz, 2002a and 2002b). The substantial industrialization of hinterland cities was facilitated by inter-city investments in transport and telecommunications (Feler and Henderson, 2008: 3). Some businesses may also have decided to move out of São Paulo to avoid the increasing diseconomies of scale in a huge city with rapidly increasing infrastructure and administrative problems. These push factors, along with the growing power of the labour unions in São Paulo's industrial district and later imposition of environmental controls, probably added to the appeal of other sites (Martine and Diniz, 1997).

Thus, the perimeter of the dominant pole was extended as a result of the changes triggered by numerous individual business decisions, as entrepreneurs opted to take advantage of subsidies, access to raw materials, cheaper land and manpower, or better living conditions. A significant part of this extension occurred in regions within the state of São Paulo, with cities such as Campinas, Sorocaba, São José dos Campos and Santos suddenly making huge economic and demographic steps (Diniz 2002a and 2002b).

Nevertheless, São Paulo MR remained the country's economic centre insofar as much of Brazil's modern administrative, financial, educational and cultural services are concentrated there (Diniz, 2005: 172). While deconcentration spread economic growth over a wide radius, the recent process could be seen as the expansion and strengthening of the São Paulo growth pole and its area of influence, rather than its dispersal to other regions. Thus, for example, economic proximity to São Paulo, defined in terms of transport and communication costs, may still be critical to economic success even though close spatial proximity to it is less important than it used to be.

The demographic implications of this deconcentration were not immediately perceived.[15] In the 1970s, when the process was already well under way, São Paulo state's share of the national population rose from 19 per cent to 21 per cent, and the MR of São Paulo accounted for 17 per cent of Brazil's urban population growth (cf. Table 11).

The relative decline in São Paulo state's role in urban demographic growth and São Paulo MR's contribution to national urban growth only became apparent when the 1991 census results were published. These unexpected data caused quite a stir, as over half of São Paulo's municipalities registered negative rates of internal migration in the 1980s (Pasternak and Bogus, 2005: 22), and São Paulo state's contribution to national urban growth fell from 56 per cent in the 1970s to 20 per cent.

As attention focused on the process of industrial deconcentration, researchers realized that the economic signs had been visible for some time – since the mid-1960s at least – raising the question of why this process had taken so long to generate a commensurate slowdown in demographic growth. Looking more closely at the demographic data for the 1970s would not have been much help, as cities in other states had grown more slowly than São Paulo until 1980. Although other cities in the state of São Paulo had been catching up with the metropolitan region in terms of growth rates, this could be expected in view of its size.[16]

One possible reason for the time lapse between the redistribution of industrial activity and the relocation of the locus of demographic growth is that migration patterns tend to lag behind spatial changes in the distribution of economic activity. Omnipresent migration chains not only facilitate the insertion of new migrants, but also contribute to the dynamism of receiving areas, fostering further movement to that area. The previous 50 years of intense economic growth in both the state and the MR of São Paulo had undoubtedly created a certain aura of prosperity, and expectations that its capacity to assimilate large numbers of workers would continue indefinitely.

Another possibility is that the dislocation of industrial jobs does not in itself generate large increases in employment; rather, that the employment pool only expands sufficiently to attract large numbers of migrants with the growth of services and commercial activities that accompany new-found wealth in a locality. This lag between industrial and demographic concentration suggests that it might well make sense to design policies, including infrastructure policies, to bring demographic shifts more into line with economic shifts.

2.5 Overview of the urban maturation process

The previous section describes how various factors in the late 1970s began to dampen the rapid rates of urban and metropolitan growth that Brazil had experienced in the previous half century. These factors coincided with and contributed to major changes in the country's social, economic and political processes. An era of rapid demographic growth was ended by an unexpectedly swift decline in fertility; a military regime was supplanted by re-democratization initiatives; an economic model based on import-substituting industrialization was displaced by a more outward-looking system as the

[15] It worth noting that in a 1991 publication, Vilmar Faria, one of Brazil's more prescient sociologists, called attention to signs of industrial deconcentration from São Paulo – a process that actually had already been going on for over 20 years (Faria, 1991:118)[

[16] The larger the city, the less its growth rate is affected by net in-migration, however huge this may be. See also footnote 9 (above).

country was impelled into globalization; and finally, the longstanding concentration of industrial activity in São Paulo diminished as industrial growth poles multiplied across the country, albeit without really reducing this core city's economic dominance.

Brazil can be seen as a country that has reached a mature stage of the urban transition, with most of its population now living in large but slow-growing cities, a well-developed and well-articulated network of cities across its different regions, and some 90 per cent of its GDP generated in cities (Da Mata *et al.*, 2005a: 2). In the current globalized economic framework it has a head start on other middle-income countries – at least on paper – with a total of 660 cities with 20,000 or more inhabitants well distributed over its entire territory, 115 cities with 100,000 or more inhabitants, and 18 agglomerations of more than 1 million residents.

It is still unclear to what extent this early urban transition will actually help Brazil succeed, or speed up results in its quest for development. Recent studies indicate that the specific conditions and policy framework for minimizing negative externalities in each city will play an important role in determining its development trajectory. On the one hand, the stage of rapid growth is not completely over, as witnessed by sizeable population increments on the urban peripheries of MRs and other urban agglomerations. On the other, much still needs to be done to overcome the social and environmental problems in urban areas, as will be seen in the next section.

3. The social and environmental consequences of an abrupt urban transition in a context of inequality

The main argument made in this section is that many of the environmental challenges facing Brazil's urban population are closely linked to social issues, and that these interconnected problems are largely due to the failure to take a proactive stand on urban growth, along with neglect of the housing and infrastructure needs of the poor. This not only reflects a lack of vision on how to deal with urban growth, but also derives from, and is consistent with, a social structure that has historically been more attentive to the needs and interests of the powerful and privileged than the problems of the majority.[17] This section starts by focusing on urban environmental issues and relating them to their political origins and social implications.

3.1 Main urban environmental issues in Brazil

As a middle-income country, one would expect Brazil's most serious urban environmental problems to include citywide and regional burdens, such as ambient air pollution in major cities, surface water pollution and regional deforestation (McGranahan *et al*., 2001). Only a small share of Brazil's urban population would be expected to face the kind of domestic water and sanitation problems experienced in the cities of much poorer countries, and the per capita contribution to global burdens such as climate change would be expected to be less than in much more affluent countries.

In recent years most international attention on environmental issues in Brazil has focused on deforestation of the Amazon and agricultural expansion in the savannahs, and their implications for the preservation of biodiversity and global climate change. Some consideration has also been given to the negative implications of industrial processes, but without the same intensity of purpose, except in the case of specific

[17] As a former undersecretary in the Ministry of Cities commented '... our country is primitive from this perspective and still marked by our slavocratic heritage, wherein it is felt that housing for poor people has to remain on the periphery. Our elite still has this vision and the State machinery is geared to perpetuating it' (Rolnik, 2008).

disasters such as Cubatão (cf. Hogan, 1995). More recently, growing concern about the probable impacts of global climate change has spurred efforts to evaluate its likely consequences for coastline cities (Nacaratti, 2008).

Although Brazil has by far the largest industrial park in Latin America, its per capita emissions of greenhouse gases still fall well short of those in high-income countries. For instance, it was recently noted that despite being four times larger than San Diego, the mega-city of São Paulo in Brazil produces one-tenth of its greenhouse gas emissions (UN Habitat, 2008: xiv). Moreover, Brazil's cities are still denser and have fewer automobiles per capita than those in high-income countries. Deficiencies in access to piped water, sanitation and waste removal are significant, but not as critical as in most other low- and middle-income countries. Nevertheless, some urban environmental management problems are exacerbated by the lack of strategic vision and integrated or proactive approach to urban growth (cf. Carmo, 2002: 172–76).[18]

At the broadest level of interest in urban environmental issues, there has been major concern about increasing 'urban blot' – the amount and characteristics of land taken up by cities (Hogan and Ojima, 2008), particularly in North America. One might imagine that the enormous growth of urban areas in Brazil over the past 80 years would necessarily have encroached upon previously open land that may or may not have had ecological or agricultural value. In reality, only 1.12 per cent of the national territory (some 95 thousand km^2) is occupied by areas officially defined as urban; urban density is 1,453 thousand inhabitants per km^2, and 2,353 per km^2 in larger urban agglomerations (Ojima, 2007: 283–84). Sprawling cities like Brasília evidently consume more land per person than those that develop compactly; but overall, the land area occupied by urban localities is not in itself a critical issue in Brazil, especially when one considers that the rather generous definition of 'urban area' in the data used for this calculation overestimates the actual territory taken up by urban build.[19]

Nevertheless, the way that this land area is occupied does give cause for future concern. The rapid expansion of the Brazilian automobile industry has unquestionably accentuated urban sprawl, especially with the rise in car ownership over the last two decades. Low-density urban growth inevitably leads to higher energy costs and higher per capita costs in infrastructure and transport networks (World Bank, 2006, Vol. 1: 62–63), and can also lead to the degradation of valuable natural resources.

Be that as it may, middle-class automobile-based suburbanization does not have nearly the same significance in Brazil as it does in the classic urban sprawl of the United States. Indeed, despite the spread of gated communities in urban suburbs, most peri-urban growth in Brazil stems from the extension of low-income residential areas into the periphery. This also has distinctive and important environmental implications, but these are of a different nature. For instance, in the MR of São Paulo, where these issues have been analysed in greater depth, expansion into peri-urban areas is transforming land use at an alarming rate, degrading the natural environment, contaminating watersheds and invading parks and other environmentally protected areas, including the famously endangered Mata Atlantica. It also requires the continuous extension of a whole range of public services to distant peri-urban areas, at high economic and energy costs (Torres *et al*., 2008).

[18] For instance, although Brazil has some of the highest per capita availability of water in any large country, every dry period has the potential to create conflict between the two most powerful industrial areas in the state of São Paulo, located in the Upper Tiete Basin and the Piracicaba River Basin (Carmo, 2002: 170).

[19] This figure is calculated on the basis of areal data provided by the demographic census (Ojima, 2007: 283).

This section is less concerned with the broad picture of sustainability or particular urban environmental management problems than with how specific urban environmental issues affect and are affected by the social situation of poor urban populations, and what their joint implications signify for the development outcomes of the urban transition. While the problems affecting Brazil's urban population may well be less severe than those in much poorer countries, they are still worse than they should be.

As will be seen in the policy section of this paper, 'master plans' have been part of the discourse of urban planners and policymakers for some decades. But the practical reality is that the pace of urban growth has outstripped land use planning. Ideological and political opposition to urban growth has more often led to ineffectual and frequently damaging obstacles to expansion than to forward planning for it. Land use planning from an environmental standpoint is even more unusual (see Box 2 on the rare case of Curitiba, although even here, planning for the land and housing needs of the poor has not been a priority). With few exceptions, urban growth has occurred with minimal consideration of '…the physical environment, topography, hydrology, etc.; rivers have been closed into pipes and covered by roads; very rarely have formal architectural patterns reflected concerns with the climate or use of energy; and applied research has been very timid in actually coping with profound social differences … criteria of functionality and efficiency have always prevailed …' (Costa and Monte-Mor, 2002: 134).

The lack of a shared, proactive vision for urban growth is widespread, even when there is a professed faith in master plans. Unplanned and un-oriented rapid urban growth undoubtedly accentuates environmental management problems, and invariably leads to the local degradation of natural resources like land, water and vegetation. In settlements where basic services are not provided it also contributes to environmental health problems, such as those related to inadequate water and sanitation. Many of the social and environmental problems affecting Brazil's urban areas stem from lack of attention to the housing needs of the poor.

Box 1: Brazil's model city: Curitiba

At least one large Brazilian city – Curitiba – is repeatedly cited as a model of good environmental management. Without going into detailed analysis of how this came about, key lessons can be learned from some of the main features of the city's trajectory.[20] Curitiba's history and rapid growth is relatively recent.

Although its expansion peaked during the era of faith in the capacity of the state planning framework, the integrated urban plan for the city was the product of a public contest in the 1960s, and was only implemented after widespread public discussion in the early 1970s. Political continuity was a critical factor in management of the plan. The authoritarian nature of the political system in force under the military regime when implementation began made it easier to push the plan through, particularly in relation to land use issues. Nowadays, public involvement has increased to the point where new approaches require popular support for successful execution.

A key ingredient of the original master plan for Curitiba was integrated traffic management and land use to limit concentration in the city centre. Implementation of the plan also focused on the physical, cultural, economic and social transformation of the city; and although explicit 'environmental' issues were not at the forefront of the original plan, they undoubtedly assumed increasing weight as environmental awareness blossomed in the 1980s.

The entire city is zoned according to land use and density, with urban growth encouraged along five main axes. Land use legislation, supported by the municipality's prior acquisition of adjacent lands, has encouraged high-density occupation along each axis. These planned axes facilitated the introduction of an innovative public transport system with express buses running on exclusive bus lanes – providing cheap, flexible transport that has encouraged the use of public rather than private transportation, and has been widely acclaimed and copied.

Curitiba has a planned industrial city that houses most of its light industry, with two-fifths of the land in the industrial area left as green space. Again, prior acquisition of the land for the proposed industrial site (partly through expropriation during the authoritarian regime) was a key factor in its success. Curitiba's recent history has been shaped by growing concern about environmental issues: with early high standards maintained through local environmental regulation and enforcement, and innovations in refuse control and recycling combining environmental concerns with job-creation and income-redistribution policies.

Altogether, the Curitiba experience suggests that managing urban growth and structure in a proactive, participatory and imaginative way can significantly improve the population's social and environmental quality of life. It demonstrates the benefits of making well-informed, explicit decisions about the spatial structure and land uses best suited to the city's needs at the beginning rather than the end of the planning process. Master plans for Curitiba were first discussed in the 1940s, but it was not until the mid-1960s that an integrated urban plan for the city was chosen through a public contest. This was the object of much discussion at different political levels, with open public debate that fostered interest and awareness of issues (such as the need to emphasize the public rather than private good in transportation in order to make the city more habitable and sustainable), but not agreement on practical steps.

[20] The following discussion of Curitiba's trajectory is largely based on Martine (1998) and references cited therein.

A key obstacle to implementation of the basic design was the control of critical land areas through early acquisition, either by purchase or expropriation,[21] which was only achieved during the authoritarian and technocratic military regime. Actual implementation of the master plan began in the early 1970s, under a planning institute (IPPUC) created for this specific purpose. Public involvement was minimal in the earlier years of implementation, but increased significantly from 1979 onwards as growing environmental awareness gave new vitality and content to such initiatives.

The one domain where Curitiba does not provide a model for other developing cities is the land and housing needs of the poor. Various schemes have been tried, starting with peripheral 'rural villages' for recent migrants, but they lack the critical land use planning component that has served the city so well in other areas. It consequently has a significant number of precarious and informal lower-income settlements, like most other Brazilian cities.

Even in this model city, the combined efforts of technocratic planning and public participation have failed to effectively address the housing needs of the poor. One would need to examine the nature and composition of the much-vaunted participatory process more closely to see whether the interests of lower-income people were adequately represented. Even if they were, it is questionable whether the kind of proactive, long-term vision needed to deal effectively with the land and housing needs of the poor would have emerged.

3.2 The consequences of chronic inattention to the housing needs of the poor

A more detailed analysis of the housing shortage in Brazil and its evolution over time would take us far afield. Quantifying the relative levels of housing shortages at different periods is a frustrating process due to lack of data and variable definitions, while rapidly declining fertility, changes in family structure and an increase in the number of small families and single-person homes have altered the rate at which demand increases (Cavenaghi and Alves, 2008). A much-quoted estimate by the João Pinheiro Foundation puts the recent housing shortage at around 7 million units (including deficient or precarious housing), mostly concentrated among those earning less than the minimum wage (Malta, 2006. This is possibly exceeded by the number of units with good services and infrastructure standing empty in the centre of larger cities (Rolnik, 2008; Cavenaghi and Alves, 2008) as a result of speculative real-estate practices.

Whatever the exact number, the point is that a large proportion of lower-income people live in poor housing due to inadequate measures to accommodate urban growth, and that this deficit increases every year. Thus, the World Bank estimates that about 1 million households are formed each year, and that the formal housing market produces between 300,000 and 400,000 units a year. The difference evidently has to be made up by self-construction and informal markets (World Bank, 2006, Vol. 1: 52).

Some measure of the inequalities in the housing sector is given by the fact that investment in residential construction in São Paulo is concentrated in areas where population is actually decreasing. Torres *et al*. (2007) note that between 1995 and 2003 private investment in residential construction in São Paulo amounted to around 10 billion dollars, and that it was concentrated in areas whose population had declined considerably between 1991 and 2000. In other words, there is little correspondence between demographic need and housing production. All the construction by private

[21] This coincides with the recommendations made by Angel (2008) regarding planning for inevitable urban growth.

enterprises was aimed at higher-income populations, including the few smaller units built as apartment-hotels in rich neighbourhoods.

Such disparities are chronic in Brazilian cities. One critical and obvious fact that fails to receive due attention is that poor people represent the largest social segment, if not the outright majority, in all urban growth processes in Brazil as a result of rural–urban migration or natural increase in cities.[22] Despite their number, they have historically had to fend for themselves in tough housing markets. Failure to plan ahead for their needs inevitably forces the growing masses of urban poor towards squatter settlements and other informal communities. Poor people end up building makeshift dwellings wherever they can, creating the notorious *favelas* (precarious settlements with no infrastructure or services, generally located near city centres) and slums that dot the hillsides, riverbanks and other unsuitable locations in Brazilian cities.

There are three forms of urban slum in Brazil: *cortiços*, *favelas* and *loteamentos*. The oldest type is the *cortiços*, tenement-style slums in collective buildings that are generally found in older, run-down parts of city centres. Their numbers are declining today.[23] The first recorded *favelas* existed on the hills of Rio de Janeiro in the late 19th century. They did not appear in São Paulo until the 1940s, and only really proliferated after 1970 (Pasternak, 1999: 275–77). The third category of *loteamentos* refers to the irregular and often illegal sale of small private lots that do not meet zoning regulations. Usually found in peripheral areas, these are generally known as 'informal settlements', and may also be classified as *favelas* or slums, depending in part on their location and characteristics. *Loteamentos* have become the primary form of access to housing in larger Brazilian cities; in most cases, the occupants of these plots buy them from alleged landowners, but cannot obtain title to the land because their plots do not meet zoning regulations.[24]

The actual number of people living in different types of slum dwelling is poorly estimated. The Brazilian Census Bureau reports that *favelas* exist in 28 per cent of all municipalities surveyed, and that these contain some 930,000 residences. Experts acknowledge that this falls well short of the real figure, and surveys conducted by different city agencies are notoriously divergent. For instance, estimates of the *favela* population in São Paulo around 1992–1993 ranged from 1 million people in 1,800 *favelas* to 1.9 million people in 1,600 *favelas*. What is beyond doubt is that slums have a long history, have grown very fast, and that various interventions to 'solve' this problem have generally been ineffective.

Slums grow when the capacity of the formal housing market is limited and cannot accommodate an increase in overall housing demand (World Bank, 2006 Vol. 2: 37–43). Brazil's housing sector has always been a preferential target of clientelistic policies (Valença, 2007), with the housing needs of the poor attended to as more of an afterthought. Smolka and Larangeira provide a telling analysis of the various approaches that policymakers have taken to deal with the pervasive problem of slum growth and informal settlements. 'Some Latin American countries have had more than a century of short-sighted urban policies ranging from outright repression, removals

[22] The main arguments developed in the following paragraphs are based on UNFPA (2007) and Martine (2008).
[23] In 1886 a government document put the estimated number of inhabitants in Rio's *cortiços* at between 46,000 and 49,000 (Brasil, 1886: 10).
[24] *Loteamentos* have become more prominent in recent years, apparently as the result of a national law enacted in 1979 setting the minimum lot size for any construction at 125 square meters of land. This made it even more difficult for poor people to buy 'legal' plots and increased the number of smaller plots purchased on the 'informal' market (Feler and Henderson, 2008: 3).[Only 2008 in Refs]

and relocation to full recognition, large-scale housing projects, serviced sites and basic services, on-site selective support to self improvements and direct public investments in settlement upgrading. These policies did not significantly alleviate the problem and, in many circumstances, further fuelled the growth of informal settlements' (Smolka and Larangeira, 2008: 100).

The common denominator in these approaches is that they are *ex post facto*. Despite several decades of rapid urban growth and proliferating slums, informal settlements are generally treated as transitory public order problems that need to be eradicated or are somehow expected to fade away with development. In most cases, concrete action is only taken after slums have existed for several decades and politicians have understood the benefits of 'solving' the problem of informal settlements. Attempts to do so have become less ruthless over time as social movements, political participation and reduced growth rates gradually motivated politicians to look beyond the advantages of transforming these city-centre eyesores into prime real estate by shunting *favela* residents out to the periphery. Nevertheless, the many intermediate solutions aimed at improving the plight of informal settlers reflect various degrees of good intentions, and have never been able to keep up with the demand for lower-income housing.

The idea that it might be cheaper and more effective to prepare for inevitable growth rather than try to correct deficiencies after the fact has made virtually no political headway – even though the futility of relying solely on *post hoc* approaches is demonstrated by a simple example given by Smolka and Larangeira for the city of Curitiba, which is generally considered a bastion of good social and environmental practices. A recent study there identified 13,136 households on irregular sites, representing some 2.8 per cent of the city's total population. 'To resettle all these families in new subdivisions with basic urban infrastructure and 27m^2 houses would require an investment equivalent to almost twice Curitiba's entire revenue from 2005 property taxes, that is, approximately US$183 million. This same amount, if spent on new serviced land, would accommodate from 30,000 to 50,000 families on plots of 250m$^{2'}$ (Smolka and Larangeira, 2008: 112).[25]

The prevalence of informal land markets and the way that the formal system relates to them also makes it much more difficult for poor people to gain access to infrastructures and services. The World Bank (2006, Vol. 1: 52) estimates that 'extending and upgrading a standard package of urban services to informal settlement costs three times the amount for low-end formal-sector development'. The administrative burden of formalizing settlements that do not conform to regulatory standards can be high, and the lack of standards can also create physical obstacles to upgrading – although it is also important to recognize that formal standards are often inappropriate and would exclude rather than accommodate low-income urban dwellers if they were enforced.

On the other hand, it is clearly not realistic to provide ready-made residences for the whole growing contingent of poor people in cities. Attempts to handle the problem through unregulated informal land markets have proved ineffective and socially costly. It is a mistake to assume that poor people lack any resources, but the formal land market is only legally accessible in lots of 125m^2 or more, meaning that poor people, who have to turn to informal markets to purchase smaller lots, end up paying more per square metre of land than higher-income groups. As noted by Smolka and Larangeira

[25] These figures compare the costs of remedial resettlement *in loco* with the *ex-ante* provision of new serviced land. It does not consider the investments that are lost as houses are destroyed in resettlement. The obvious point is that planning ahead is much better and cheaper than trying to correct entrenched problems.

(2008: 100) ‘contrary to conventional wisdom, informal land occupations are, by and large, the object of “regular” market operations, widely promoted by so-called “pirate” or informal developers. This is now a highly profitable business (out-competing formal developers) and the prevailing form of land acquisition…’

The situation with lower-class housing is consistent with the norms and mores of a highly unequal society that has historically not prioritized the needs of the poor. In fact, recent research suggests that the failure to take a proactive approach to their housing needs reflects more than mere apathy about the plight of the poor among Brazil’s urban policymakers: it has been part of an explicit and systematic attempt to obstruct settlement by poor people in their cities, especially migrants.

An important study by Feler and Henderson (2008) found evidence of systematic practices to exclude poor urban communities, who are cut off from basic services and infrastructures like central water and sewerage; keeping the poor in bad living conditions has been an effective way of resisting in-migration and urban growth. The study indicates that regulations promoting exclusion are more prevalent in poorer communities and in those with a greater proportion of migrants. In principle, the 1979 national law establishing the minimum plot size for housing (see footnote 22 above) also made it ‘illegal’ for cities to provide public infrastructure to poor settlements. This gave them an excuse to refuse to provide basic services, and obliged poorer communities to procure more expensive private alternatives. According to calculations based on the latest census data, localities subject to migration had a greater tendency to impose minimum plot sizes in excess of the national standard, revealing their explicit intention to keep out migrants (Feler and Henderson, 2008: 11).

Such practices have far-reaching implications. As Feler and Henderson observe, ‘the development of unserviced informal housing sectors has immediate effects beyond restraining migration: inequality in living conditions and development of unhealthy neighborhoods with high negative externalities... These policies have implications for the future as countries develop and undertake investments to make cities more liveable, which will involve catch-up investments. Building water and sewer infrastructure long after the development of dense neighborhoods can be very costly, requiring extensive spatial reconstruction and reconfiguration of neighborhoods. We find evidence consistent with strategic behaviour and that such policies affected population growth rates of localities’ (Feler and Henderson, 2008: 1–2).

Two initiatives are required to make significant headway against this trend. Both would be difficult to implement in a society that is still marked by inequality and privilege, and which treats slums as temporary eyesores that will hopefully go away by themselves. First, it would entail avoiding the tyranny of high standards – such as the 1979 national law that discriminates against the sale of plots of less than 125 m^2, and the even higher standards required by many municipal laws. Meanwhile, distorted urban land markets would have to be regulated and poor people protected from the abusive practices of developers.

Second, in a related and even more essential move, the public sector needs to take a proactive stance on the future land needs of the poor. Most cities have land in good locations that could be built on, but which is being held for speculative purposes. Maricato (2010: 13) observes that ‘in some cases, as in the cities of Brazil’s centre-west (Campo Grande, Goiânia and Palmas), vacant land possessing infrastructure (water, sewage collection, paving, public lighting) could accommodate more than double the population of the cities and would avoid forcing the larger part of the low-income population to live outside the established urban fabric. On the other hand, in the large metropolises – particularly Rio de Janeiro and São Paulo – the main problem

is the large number of empty built properties. In both cities, making better use of such buildings could virtually solve the housing deficit.' Thus, more land could be made available by reining in speculation, through taxes on increased land values created by public investments, or by redefining current land uses for more profitable ones (UNFPA, 2007: 41).

3.3 Intersecting social and environmental problems and their impact on the city

The precarious housing conditions endured by the poor inevitably accentuate a whole range of urban environmental problems, which in turn help maintain sub-standard living conditions. Since governments will generally not service areas where land rights are unclear (a situation aggravated by the tyranny of high standards), informal settlements are rarely provided with water, sanitation, transport, electricity or basic social services, especially during their formative years. And even when decision makers have an interest in dealing with these problems, the often haphazard and asymmetrical pattern of occupation in informal settlements makes it difficult to provide vehicular transportation or other types of service.

Such difficulties not only exacerbate the miserable living conditions of the urban poor, but ultimately impact on the quality of life and sustainability of the entire city. Lack of access to shelter and services is the starting point for a vicious circle of poverty. The poor live in areas far from schools, hospitals, public transport and job opportunities. Their daily living environments are typically full of hazards and lack minimal access to clean water for drinking, cooking, washing and bathing, or serviceable toilets and garbage collection. These conditions increase the spread of mosquito-borne diseases like dengue and malaria, multiply disease-causing germs and frequently lead to chronic illnesses of the digestive tract, or cholera epidemics. Crowded environments also help spread contact-related diseases like measles, tuberculosis and diarrhoea. All these problems are accentuated during periods of heavy rainfall and by flooding caused by unsustainable land use, as seen in the Brazilian summer of 2009–2010, when many lives were lost and countless households destroyed in lower-income communities in São Paulo and Rio de Janeiro.

Disregarding the land and housing needs of the poor also adds to overall environmental degradation, as it affects ecosystem services and the city's ability to plan responsibly and effectively for sustainable growth. With little choice beyond stigmatized or off-limits land, the poor sometimes occupy ecologically fragile areas and watersheds, thereby endangering city water supplies and other ecosystem services. Deforestation to clear spaces for housing causes flooding; while the occupation of urban floodplains and wetlands not only endangers the lives and possessions of the poor, but also increases the probability of flood damage in other parts of the city. By the same token, invading steep slopes and removing tree cover increases the likelihood of landslides. Such behaviour is by no means restricted to the poor: residences for the rich are often constructed in inappropriate areas and contribute even more to environmental burdens on a per capita basis. Finally, entrenched inequalities and political stalemates can make it even more difficult to improve informal settlements and reinforce bad relations between poor communities and their governments. A proactive approach to housing could do much to prevent this.

The problems facing low-income populations are clearly illustrated in detailed analyses of environmental and social vulnerability in the heart of Brazil's richest city, the municipality of São Paulo. Almost 50 per cent of all *favelas* in this municipality are located on riverbanks, many subject to chronic flooding. Most of the *favelas* on municipal land are situated on steep hillsides liable to erosion, and some exist on landfill sites and rubbish dumps (Pasternak, 2000: 284–85).

Alves (2007) divided the municipality of São Paulo into three classes of area according to the predominance of high-, medium- or low-income populations. Analysing the risk of environmental disasters (flooding or landslides) in each type of area with GIS tools shows a clear correlation between poverty and environmental risk. In 2000, some 28 per cent of the 2.8 million people living in low-income areas were in localities at risk of flooding or landslide, compared with 15 per cent of middle-income groups and 9 per cent of higher-income groups. Moreover, the data in Table 12 below show that only poor regions are growing, and that their growth rate is highest in at-risk areas. Overall, poor regions are growing at an annual rate of 3.7 per cent, while at-risk areas within them have an annual growth rate of 4.8 per cent. This contrasts with the negative growth seen in middle- and high-income areas, apart from the slow expansion of middle-income populations in at-risk areas.

In addition to this, the population living in at-risk areas have lower incomes, less access to piped water, sewage and rubbish collection, and higher levels of illiteracy (Alves, 2007: 310–14). In short, fast-growing areas within the municipality of São Paulo are both poor and subject to greater environmental risk, indicating that people are being forced to occupy increasingly unsuitable areas as land for informal settlements becomes scarcer.

Such social and environmental shortcomings not only reduce a city's functionality, but also incur enormous health costs (Satterthwaite and McGranahan, 2007, p. 27). In addition to the direct consequences for poor people's health, the number of hours lost to illness has severe repercussions on both the overall productivity of the labour force and on household incomes.

Table 12: Population growth by income group and environmental risk, municipality of São Paulo, 1991–2000

Type of area	Absolute growth 1991–2000 (in thousands)				Annual growth rate 1991–2000 (%)			
	Poor regions	Middle-income regions	High-income regions	Total	Poor regions	Middle-income regions	High-income regions	Total
Population in at-risk areas	378	37	-17	398	4.81	0.56	-1.21	2.51
Population in areas not at risk	696	-163	-141	392	3.26	-0.41	-1.10	0.53
Total	1073	-124	-157	790	3.67	-0.26	-1.11	0.88

Source: Alves, 2007, table 1, p. 307

Urban lands inhabited by the poor typically have sprawling, haphazard settlement patterns that make it more physically difficult to put in place basic infrastructures like roads and pathways that would facilitate the free movement of residents. The sprinkling of such settlements across the internal margins of the city can also impede the design of effective mass transportation and increase its implementation costs. Having to continually improvise ways of accommodating the increasing flow of people and vehicles through the narrow winding streets that bypass these sprawling settlements is not only ineffective but also consumes economic resources and contributes to energy waste and pollution.

In the context of today's globalized economic competition, one of the most widely decried features of slums is that they are bad for business. Although the residents of informal settlements make important economic contributions, over time failure to attend to their needs can help trigger a series of perverse effects that ultimately undermine a city's ability to be competitive, and thus to pursue economic and social development. For instance, informal settlements undermine land markets, push up land prices and make it more difficult to provide infrastructure and services (Smolka and Larangeira, 2008). Some political operators and formal sector organizations use the vagaries of the informal sector to pursue their own ends, undermining the functioning of both the formal and informal economies. This then affects the city's ability to attract investment, create jobs and generate a better financial base for implementing improvements. Rather than taking more difficult and expensive remedial measures, a proactive approach to inevitable urban growth (largely composed of poor people) would improve a city's medium- and long-term prospects while allowing its workers to benefit from what it has to offer.

Generating a stable investment climate that stimulates private sector investment and business development is as important at the local level as it is at the national level. Some specific issues that are repeatedly cited in development literature in relation to the urban context are: a) the provision of quality infrastructure, such as communications and social and protection services; b) the nature and plenitude of social and cultural amenities that affect the quality of the urban environment, such as green spaces, recreational facilities, restaurants and shopping, as well as schools and health care; and c) an institutional milieu that protects individual rights and is tolerant of diversity (Campbell, 2003). Such conditions are unlikely to prosper in a city that fails to plan ahead for the needs of its major social group, or worse, that explicitly adopts policies aimed at excluding certain segments of society and thus contributes to deteriorating living conditions in the city.

The studies on Brazil discussed in the next section (cf. Da Mata *et al*., 2005a) suggest that a city's economic success is enhanced by improved governance and dealing effectively with problems such as local crime and violence. The dramatic increase in crime and violence seen in Brazil in recent decades, particularly in large urban areas, has systematically undermined human rights and equity. It is estimated that some 50,000 homicides take place every year, as firearms have overtaken traffic accidents as a cause of violent death. Overall, homicides have become the third leading cause of death among men, and the leading cause among young males aged between 15 and 39. Black men have particularly high mortality rates from violent causes (UNODC, 2005; Hughes, 2004).

Periodic surveys conducted in different cities reveal that a disturbingly high proportion of the urban population has been victim to some sort of crime in the previous year. Not surprisingly, a large proportion of the population feels insecure, leading to high levels of stress in daily life, reduced social contact, support for simplistic solutions and the justification of police abuse.

Simple correlations between the conditions in low-income settlements and violence or criminality reflect a number of other intervening variables, but *favelas* and urban peripheries systematically show disturbingly higher rates of assault, aggression, drug trafficking and violence of all kinds, including domestic violence (Cardia, 2000; Hughes, 2004). Organized crime, especially drug trafficking, engenders various types of violence and is on the rise. The gangs involved cause enormous social and economic damage through assassinations, arms trafficking, terror, fomenting addiction among children and adolescents, and by compromising the legitimacy and viability of public institutions (UNODC, 2005). The drug trade often establishes itself in *favelas*, in a

process that promotes violence, spawns other criminal behaviour and makes a travesty of the justice system. In some instances, it has also taken over neighbourhood associations, corrupted the local economy and inhibited political participation.

The implications of these social ills extend beyond the problems facing local neighbourhoods or cities: they reflect on the nation's social fabric and self-image, on external perceptions and thus inclusion in the international economic community. Responding to these problems also requires national and even international strategies. While it would be a mistake to prioritize economic competitiveness from the perspective of the urban poor, it is important to build a broad-based coalition for the sort of proactive planning that not only addresses urban inequalities but also stimulates sustainable economic growth.

4. The determinants of urban economic success

Some of the problems observed in urban areas can be attributed to their relative economic sluggishness in recent decades. Moving forward and improving the lives of urban people not only demands better social and environmental governance and more proactive policies in those areas, but also requires resources from a prosperous tax base to finance infrastructure and services. In the context of the current globalized economic competition, this means that cities have to be able to attract investment in order to create jobs and raise the resources to improve infrastructures and services. Well-functioning cities are thus critical in generating competitiveness and social and environmental well-being.

Table13: Selected economic characteristics of Brazilian municipalities, by population size class

Size class of municipalities	% of municipalities offering investment incentives inthe previous 24 months	% of municipalities charging for public lighting		Number of civil servants working in the municipality (in thousands)	
	2006	**2002**	**2006**	**2002**	**2006**
Under 5,000	42.3	41.1	60.0	213	261
5,000 to 20,000	44.0	49.7	70.2	940	1,115
20,000 to 100,000	61.5	55.0	79.1	1,338	1,666
100,000 to 500,000	77.5	55.6	74.0	786	1,079
500,000 +	86.1	57.6	66.7	786	957
Total	49.5	49.1	70.0	4,063	5,079

Source: IBGE, 2007

How prepared are Brazilian cities to compete in the global marketplace, and what policies would make them more competitive? There is no doubt that city governments in Brazil are aware of the opportunities generated by the current combination of globalization and decentralization. In fact, this has led to a so-called 'fiscal war' between cities attempting to attract investment (Diniz 2000b: 36). Data from a 2006 national survey of Brazilian municipalities indicate that local authorities in different-sized urban agglomerations understand the need to attract investors. Table 13 above shows that in 2006 half of all Brazilian municipalities had offered potential investors

some type of incentive in the previous 24 months, with 86 per cent of municipalities of over 500,000 inhabitants offering incentives. What is particularly interesting in light of our argument regarding the need to prepare for the land needs of the poor (and the purported lack of available land as a common pretext for inaction), is the fact that the most common incentive offered by municipalities involves ceding or donating land to potential investors, along with various types of tax exemptions and rebates.

In this context, one cannot help but wonder what happens when most local administrations, not only in Brazil, but throughout the developing world, aggressively strive to attract investors with different types of incentives? Evidently this benefits a core group of national and international entrepreneurs, who can choose between the diverse possible advantageous options generated by this fiscal war. Moreover, they can use the notion that cities should attract investors to argue for special treatment, or more generally for policies that do not serve the collective interest or even the national or global economy. Within the country, spatial inequalities would also intensify, for as the World Bank 2009 World Development Report observed, 'disparities in living standards are the outcome of a striking attribute of economic development: its unevenness across space' (World Bank, 2009: 1). While some of this inequality reflects the unavoidable side effects of economic success, it is also partly due to misguided urban management promulgated locally in the name of competition. Just as good national environmental strategies need to restrain cities from attracting investment by allowing environmental externalities; good national social strategies should prevent them from attracting investment by allowing socially destructive practices. The challenge is for federal governments to head off forms of competition that are destructive while maintaining those that are (nationally) beneficial.

It is interesting to note that while Brazilian municipalities are offering fiscal incentives to potential investors on the one hand, on the other they are greatly increasing the number of municipal taxes for things like public lighting, security and refuse collection. Table 13 shows that the number of municipalities charging taxes for public lighting (the most common taxes) rose from 49 per cent to 70 per cent in just four years. Only 6 per cent of all Brazilian municipalities do not charge taxes of any kind. While it is obviously impossible to establish a direct link between the trends in incentives and taxes from these data, it is legitimate to speculate whether the financial incentives for private firms offered by municipalities are indirectly funded by taxes on the general public.

Enhanced responsibilities and opportunities at the local level are not without potential drawbacks. Local entities need additional human resources to effectively assume a larger role in stimulating economic activity and other forms of urban management. The question is what kind of personnel and how much additional staff is appropriate? The last column in Table 13 indicates that Brazilian municipalities took on an additional 1.02 million local staff between 2002 and 2006. Particularly noteworthy is the increase in the number of temporary staff: this category included 9.4 per cent of all municipal staff in 2004, and 19.2 per cent in 2006. Such a trend might be considered consistent with the need to maintain flexibility in the face of new and increased management challenges at the municipal level, but it also offers local politicians an opportunity to add more supporters, family and friends to the local payroll. In order to drive change efficiently and equitably, localities need national – and in some cases international – support.

Despite such stimuli, Brazilian cities have not had an impressive economic record in the last few decades, although some (particularly smaller ones) have done better than others. A set of studies conducted through a collaborative effort between the World Bank and the Brazilian government (IPEA) posed a critical question: '*Why are some cities more successful than their peers?* Is the "success" of individual cities driven by factors mostly external to any city's immediate control (such as location, growth in

market potential, being a port in a period of national trade growth, national level decentralization and improved governance), or do individual city policies and politics influence growth and development?' (Da Mata *et al*., 2005a: 2). The main findings of these various studies are summarized in the following paragraphs; their significance, in light of their approach and methodology, will be discussed in the closing segments of this section.

Using a data set on 123 Brazilian urban agglomerations spanning the period 1970 to 2000, the IPEA/World Bank study analysed the relative success of cities in terms of local and regional determinants. Working on the assumption that factors of production will move to the areas that promise the highest returns, the study measured success in terms of two interlinked indicators: city productivity growth and city population growth (Da Mata *et al*., 2005a: 56).

The study finds that several variables have strong impacts on rates of city growth, particularly rural population supply, improved inter-regional transport connectivity, educational attainment and skill composition of the labour force. Increases in market potential, such as those provided by improvements in inter-regional transport, have the strongest impact on city growth, which is also favoured by local land use and zoning enforcement and the presence of a diverse set of inter-industry linkages. On the negative side, the study finds that growth rates are lowered by local crime and violence, and a higher representation of public industrial capital in the city (Da Mata *et al*., 2005a: 24–26).

Urban productivity is generally influenced by economic composition. The concentration of closely related industries (localization economies) and diversity of economic activities (urbanization economies) both tend to enhance the productivity of urban areas (Lall, 2006: 10). The division of industrial labour by city size in Brazil follows international patterns: large agglomerations are more diversified, with a mix of high technology and specialized services that require greater skills, yield higher profits and provide better wages; middle technology and more specialized industries are more likely to be found in middle-sized cities; industries with high transport costs, such as textiles and construction, are spread around the country, and services (except finance) are equally spread. Non-tradable sectors and lower-level services predominate in small urban areas, while industries that depend on the natural resource base are found in both small and medium-size agglomerations. The deconcentration of manufacturing is also leading to less specialization (World Bank, 2006, Vol. 1: 3–4 and 15–16; Lall, 2006: 10–16).

Location and distance from the country's primary economic hub also matter. 'Cities further from São Paulo, over and above declines in market potential, suffer. While this could reflect some aspect of São Paulo's huge, modern business service sector market that is critical to access for other cities, it might reflect other items like cost of capital or state-provided production amenities that respectively rise and fall as one moves further from the centre of the political elites and power in São Paulo' (World Bank, 2006, Vol. 2: 23). In more general terms, networks of cities and densely populated regions around a central location provide a rich environment for competition and collaboration, thereby favouring economic growth (Matos and Garcia, 2007; World Bank, Vol. 2: 28).

Size also matters with respect to wages and productivity. Historically, nominal (and presumably real) wages have consistently been higher in larger cities, thus giving credit to the theory that bigger cities benefit from agglomeration economies. Average per capita income was consistently higher in large cities in the last 30 years of the 20th century; larger cities generally have more economic opportunities and better

functioning labour markets to attract more economic activity and higher productivity levels (Lall, 2006: 8; Da Mata *et al*., 2005b: 3).

Nevertheless, there is some indication of income convergence with smaller, lower-income cities experiencing relatively faster income growth (World Bank, 2006, Vol. 1: 14). Such convergence is due to the decline in productivity growth in the last 15 years of the 20th century, especially in larger cities. Although all cities are experiencing rather low growth, smaller cities have performed better than the larger agglomerations, increasing their share in GDP and industrial output from 40 per cent in 1970 to 52 per cent in 2000 (World Bank, 2006, Vol. 1: 2).

There is thus a growing consensus that the large metropolises have ceded some of their primacy and economic activity to intermediate and smaller cities (Matos and Garcia, 2007; World Bank, 2006, Vol. 2). This shift goes beyond the trend towards deconcentration from the metropolis of São Paulo discussed above, and reflects an increased dynamism in smaller cities. Should this trend somehow be accelerated through public intervention? Politicians in low- and middle-income countries have long advocated the stimulation of economic growth in secondary cities in order to relieve demographic pressure on the largest or fastest-growing cities. One policy recommendation that merits special analysis in the IPEA/World Bank studies is the notion – supported by certain sectors of the national administration – that governments should promote a shift in the locus of production, to cities of different sizes or in different regions, for instance, in order to boost the economic dynamism of the urban network.

Changing the locus of economic production raises two questions: How is it achieved? Does it work? It turns out that Brazil already has some experience with these issues. In the 1970s, the Brazilian government, stimulated and supported by the World Bank, attempted to strengthen medium-sized urban nuclei in order to reduce the proliferation of small cities and the expansion of metropolitan cities in the southeast. The project turned out to be short-lived and ineffectual, as budget constraints imposed during the economic crisis of the 1980s meant that only 26 of the 130 cities originally selected for programme grants received support through a World Bank loan (Gilbert, 1993: 11–12). Furthermore, the first phase of the project, which covered half of these cities, produced such meagre results and met so few of its goals that it was not extended into the remaining 13 cities. Economic expansion was not effectively promoted and only a small number of jobs were created, so the cities did not distinguish themselves as new poles of attraction and the goal of affecting spatial population distribution was not realized (Gilbert, 1993: 11–12; Richardson, 1983: 18).

The IPEA/World Bank study addressed these questions again some three decades later – interestingly enough ignoring the previous joint government/World Bank effort in this domain. This time, the study finds little support for policies aimed at stimulating the growth of smaller cities: '…the impact of these initiatives on overall economic growth and urban efficiency is unclear… The simulation results show that there are very small differences in total urban income from favouring small cities vis-à-vis large cities…These results tell us that there are no major gains in terms of overall urban income from diverting investments from the largest cities to secondary cities' (Da Mata *et al*., 2005a: 23–24). This study found that historical coincidence and natural advantage combine to trigger a process of cumulative causation. City functions are differentiated by size, with larger cities generating higher incomes, and such inertial factors favouring the persistence of current hierarchies among cities (Da Mata *et al*., 2005b: 33–34).

This view is reaffirmed in a subsequent publication by the World Bank: 'While it is clear that the largest metropolises are suffering serious problems of management and economic stagnation, it is not clear if net agglomeration economies in large cities can be offset by incentives and other measures to divert growth to smaller cities. In a context of increasing competition across continents and evident role for megacities to lead that growth, one needs to assess whether curbing the role of our few large cities in Brazil is the best way to proceed' (World Bank, 2006, Vol. 1: 22). While the phrasing is guarded and diplomatic, the meaning is nevertheless clear – resources should not be wasted on artificially changing the economic logic that favours larger cities.

The same caveat concerning interference in the locus of urban economic activity is voiced in yet another study sponsored by the World Bank. This one focuses on traditional regional disparities within Brazil's major geographic regions – especially between the poorer northeast and the richer south and southeast – and between states and municipalities. It asks whether such regional differentials can be alleviated, and if so, by what kinds of policies (Chomitz *et al*., 2005). Focusing on labour market outcomes in Brazil over the 1990s, this study shows that dynamic municipalities experiencing both real wage growth and faster-than-average employment growth made up one-third of the total workforce, but absorbed more than half of net employment growth over the period.

This research also found that initial workforce educational levels serve as accelerators of subsequent wages, even after controlling for correlated variables. The study observes that 'this is a sobering finding from the viewpoint of reducing inter-regional inequalities. It suggests that wages will continue to diverge between the more educated south and the less-educated north' (Chomitz *et al*., 2005: 11). Another important finding is that wages respond elastically to changes in labour supply, suggesting that in-migration could substantially reduce wages and out-migration could put upward pressure on wages for those left behind in declining areas. Although they are preliminary, such findings do not reinforce government attempts to significantly alter the course of city or regional growth. In short, while Brazilian cities are not taking full and equal advantage of opportunities arising in the global market, trying to artificially shift the locus of economic activity through government initiatives does not seem to be the way out.

Taken as a whole, what lessons and reflections does this set of studies provide? The general finding that markets are more effective in determining the location and type of economic activity than wilful governments is hardly surprising, given the well-known underlying ideology of the World Bank. Nevertheless, the emphasis on the critical role of cities and the need to address them effectively does contradict the World Bank's longstanding perception of urban bias as a severe drain on development. In that sense, the approach and findings of these studies can be seen as a forerunner to the World Bank 2009 World Development Report, which celebrated the significance of urban agglomerations, equated in-migration and concentration with city success, and highlighted the importance of city administrations in paving the way for market factors. In contrast to previous standpoints, agglomeration is now viewed as an imperative for development and an engine of growth capable of optimizing productivity, development and welfare (Bryceson *et al*., 2009: 723–24).

From this vantage point, the joint government/World Bank studies conclude that what Brazil has to do is address the main constraints to its cities' competitiveness. In addition to tackling crime, violence and mounting social security bills, it needs to balance municipal finances, improve infrastructure, reduce the growing informality in employment and economic enterprises, and improve the functioning of urban land and housing markets (World Bank, 2006, Vol. 1: i and ii).

Without calling these broad conclusions into question, several aspects of the methodology utilized in the studies deserve comment. Because Brazil is a huge and widely diverse country, correlations derived from a national register of its 123 largest agglomerations may well skim over historical and regional factors. Moreover, the period covered by these studies (1970–2000) includes times of economic dynamism and stagnation, and coincides with industrial deconcentration from the MR of São Paulo that disproportionately favoured a number of smaller cities in its hinterland. The force of this transition under different economic regimes is bound to affect national trends in significant and possibly unique ways, which may not subsequently evolve in the manner that these studies envisage.

Measuring success in terms of city population growth also raises concerns. Given its continued rapid growth, a highly problematic city like Lagos in Nigeria might be viewed as eminently successful according to this yardstick. Moreover, using population growth as a measure of success appears somewhat tautological, particularly if the availability of rural workers is then tested as an explanation of success. The reports do state that 'from the supply side, the availability of "rural" workers (inversely correlated with rural incomes) is the main variable to explain city population growth' (World Bank, 2006, Vol. 1: iv). The finding that rural–urban labour supply (and thus population growth) is critical for city dynamism seems particularly intriguing: it would appear to turn the traditional neo-Malthusian argument on its head and indirectly endorse an old Marxist contention about excess labour supply keeping labour costs down – although here the reasoning is couched in more classical terms of 'rural population supply and rural income opportunities'. Lastly, the strong correlation between the availability of rural workers and city success also seems at odds with the correlation between success and the availability of highly skilled workers.

In this connection, it is also worth noting that one of the study's main findings is anachronistic and therefore irrelevant for future Brazilian policy: namely, that the volume of rural population supply is critical in increasing competitiveness. During the study period (1970-2000) there was still considerable population growth in absolute terms, as well as large currents of rural–urban migration, particularly in the earlier years. Overall, urban areas (officially defined) absorbed some 80 million people during the 30-year period, while most movements today are urban to urban, and both urban and overall population growth rates have declined significantly.

The finding that local land use and zoning enforcement favours city growth also raises some questions. This is a somewhat misleading correlation, as enforcing zoning regulations does not in itself necessarily increase economic growth: it is good zoning that may increase urban economic growth, and good zoning that is more likely to be enforced. Alternatively, achieving the rule of law may generally enhance economic growth, and enforced zoning may be an indicator of the rule of law. Therefore, zoning regulations may well be a symptom rather than a cause of a city's success. To their credit, the authors do recognize that they would need to get better data on historic land use and zoning regulations in a longitudinal framework in order to attribute causality (Da Mata *et al*., 2005a: 26).

Another point of interest related to the IPEA/World Bank series of studies is the validity of efforts to promote the spatial reallocation of economic activity by encouraging growth in smaller cities or stimulating development in poorer regions of the country. Such aspirations have been part of the lexicon of well-meaning policymakers for several decades, but the likelihood that they will succeed in a market economy has always been limited. Indeed, Brazil has a long history of wasting billions of dollars in efforts to raise productivity and living standards in woebegone segments of its northeastern region. As the World Bank emphasized in its 2009 World Development Report, it can

be difficult to overcome variations in locational, natural and historical comparative advantages. Furthermore, attempts to promote spatial equality do not necessarily contribute to interpersonal equality, and may undermine economic development. Efforts to promote development in smaller cities will vary enormously depending on their location within the broader spatial framework. Settlement size does not really capture more than a small part of the spatial economies concerned: thus, small tightly networked urban centres with good links to São Paulo are a world apart from cities of the same size in some distant region.

One insufficiently analysed aspect of urban success in this set of studies is the contribution made by urban governance. They do touch on it, concluding that there is a valid association between city success and governance: 'Successful cities help businesses by providing infrastructure and administrative support. This not only enhances productivity but also raises wages and attracts workers who have skills and experience, are looking for better wages and can contribute disproportionately to productivity gains, as well as other people who want to benefit from high quality services and amenities' (Da Mata *et al*., 2005b: 3).

Nevertheless, the impact of governance in a broader or stricter administrative sense is not broached effectively in this study. The only two variables tested in connection with 'governance' are the existence of laws to collect property taxes (IPTU) and the percentage of the population subject to land zoning laws. Since the collection of property tax is theoretically universal, it has no noticeable effect on growth. Conversely, population growth is higher in cities with better enforcement of land use and zoning laws (Lall, 2006b: 27–28). The possible limitations of this finding have already been addressed.

While it is thought-provoking, such analysis provides little insight into the importance of administrative or political practices in successful cities. It is unfortunate that most analysis of the effectiveness of local and national policy environments on urban growth makes no mention of governance, not just in Brazil but in most low- and middle-income countries (Lall, 2006b: 19). The broad-based World Bank study referred to here might have been a good opportunity to analyse the implementation of a groundbreaking federal law known as the 'Statute of the City'. Passed in 2001, this law introduced a new set of regulatory instruments that explicitly recognize the multiplicity of social groups and interests in an attempt to overcome the fact that 'the usual planning practice in Brazil was preferably oriented for the median and high income demands…' (Avila, 2006: 227). The next section of this paper discusses the actual application of this law. In addition to this, further research is needed on all types of good practices, their effects, and the impact that their dissemination would ultimately have on improved competitiveness.

On the plus side, the World Bank's comments on land and housing issues are useful for policy purposes. It notes that 'slums and invasions are today part of a complex puzzle that needs urgent attention. During heavy migration flows, the public sector has been unable to absorb the population with adequate land structures. Once the forced resettlement of the 70s was banned, cities chose to accept slums as part of the urban landscape. It was a cheaper and less contentious solution than trying to prepare land and shelter in sufficient numbers. However, this left great scars on the urban tissue of Brazilian cities, institutionalized informality and ghettos, and blurred the boundary where informal markets end and poverty begins…' (World Bank, 2006, Vol. 1: ii).

In short, the Bank's specific advice on land use policies dovetails with one of the key concerns of this paper. Its main stated components are: 'a) the need for a change in legislation to revise the binding regulations that increase land prices; (b) the need to

plan ahead and to contemplate the massive need of urbanized land to provide for the upcoming expansion in urban centres; (c) the need to understand how market forces shape the form of the city; and (d) the need to understand the potential to use fiscal instruments to avoid land speculation and to enable the public sector to capture some of the value increased brought about by public sector financed infrastructure' (World Bank, 2006, Vol. 1: 6).

It should be noted, however, that the practical enactment and implementation of these managerial approaches to land use will depend on changes in the correlation between political forces, and the effective representation of different social sectors in decision-making processes. The next section of this paper considers the significant difficulties in applying these technically correct approaches in a society marked by structural and historical inequality.

5. Urban policy and planning in Brazil

5.1 Trying to take control

Despite our depiction of Brazilian urbanization as a largely unoriented and uncontrolled process, the country has a long and varied history of attempted government interventions on spatial distribution in general, and urban policy in particular. Some of the first noteworthy actions involved the city of Rio de Janeiro, then the nation's capital.[26] Early urban renewal projects at the beginning of the 20th century attempted to 'sanitize' city centres by forcing slum dwellers to move out. Then, in 1930, a famous French town planner drew up a comprehensive master plan for the city (Le Plan Agache). Although its success is highly questionable, and despite the fact that nobody ever bothered to translate it into Portuguese, it apparently inspired a widespread and lasting belief in the capacity of master plans to solve the increasingly complex problems that rapid urban growth posed in subsequent decades (Villaça, 2005: 10).

Meanwhile, the Brazilian government embarked on explicit efforts to intervene in population redistribution on a larger scale, promoting the expansion of the Paraná agricultural frontier in the 1930s and 1940s. In the 1950s, attempts to reduce regional disparities led to the creation of SUDENE, a regional planning agency for the northeastern region. The city of Goiania was planned and a new capital city (Brasilia) subsequently built, both with the intention of encouraging population deconcentration from coastal cities and the occupation of the vast centre-west region. This was followed in the 1970s by massive colonization programmes in the hitherto sparsely occupied Amazon region (Martine, 1992).

The military regime that took over the country in 1964 expanded regional and urban planning, primarily in order to stimulate economic activity in outlying regions and reduce migratory movements to the main cities of the southeast. Migration to these large urban centres nevertheless continued to increase in both absolute and relative terms, as described earlier. Unable to stem the flow of migration towards urban centres, the government then turned its attention to 'organizing' urban growth.

Imbued with a high regard for technocratic planning, the new military regime in 1964 created two national agencies to deal with urban planning and lower-income housing: the National Housing Bank (BNH) and the Federal Service for Housing and Urbanism, (SERFHAU). The decree that created the BNH at the very outset of the military regime explicitly stated that it would be responsible for 'the formulation of national policy in housing and territorial planning', and for stimulating and financing private-sector

[26] Brasilia became the capital of the country in 1960.

housing initiatives, especially for lower-income groups. In practice, 'territorial planning' was limited to urban areas, and would be carried out by SERFHAU.

The regime essentially intended to use the BNH to curb the rapid growth of urban slums, eradicate existing slums and construct large numbers of standardized dwellings for the poor on the city outskirts. However, the subsidized finance it offered for housing was soon largely usurped by the real-estate sector and powerful construction companies catering to the upper and middle classes, and the BNH was dismantled soon after the military dictatorship ended in 1986 (Arretche, 1996).

In the early years of the military regime, SERFHAU was to have assumed responsibility for strategic management of the nation's increasingly visible urban problems, especially those of its largest cities. In accordance with the predominant technocratic mindset, it promoted the formulation of municipal master plans that would address a wide range of social, economic, physical and institutional issues in urban areas across the country. This process was financed by the BNH, prompting a sudden rash of new private-sector consultancy firms offering to help local mayors prepare their plans. Paradoxically, these became a niche and refuge for left-wing intellectuals and urban planners during the military regime. SERFHAU was responsible for defining the country's nine largest cities as metropolitan regions in 1969.

In retrospect, SERFHAU has been widely criticized for its technocratic rationale and dependence on 'objective' diagnoses that were often put together without much regard for existing local administrations, the needs of different social groups or the coalition of local political forces. Furthermore, it allegedly focused on medium- and longer-term planning, overlooking the fact that the changing nature of challenges and responses in the interim would require trial, error and constant adjustment. In these enterprises, which inevitably centred on containing the growth of *favelas*, the voice of the poor was seldom heard (Moreira, 1989: 2; Ferreira, 2007: 57; Villaça, 1999).

A large proportion of municipalities became involved in local planning, in accordance with the directives from SERFHAU. In the state of São Paulo, 88 per cent of all municipalities elaborated a master plan. However, the lack of affinity between the technical teams and the political administration meant that many of these plans were never implemented: a survey carried out shortly thereafter found that seven out of every ten municipalities had simply shelved their master plan (Moreira, 1989: 2). SERFHAU itself was disbanded after only a ten-year existence.

In hindsight, the negative assessments of SERFHAU's planning efforts may primarily reflect their notorious failure to help improve conditions in the larger metropolitan areas. These had the most complex problems and greatest political visibility, and were also the most difficult settings to coordinate technical planning activities due to the wide variety of local political scenarios. The agency also made an easy target for the withering criticism of the military regime. On the positive side, it should be recognized that the SERFHAU experience drew attention to the need for concerted planning and action in urban areas at a time when rural–urban migration and urban growth were increasing. Moreover, it stimulated more systematic study of urban issues and created the empirical basis for subsequent analyses and planning efforts in many cities. It was also responsible for the creation of a prestigious Masters Urban Planning programme in the Faculty of Engineering at the Federal University of Rio de Janeiro.

According to at least one detailed case study (on the city of Franca in the state of São Paulo), these municipal planning efforts laid the foundations for infrastructure development that have subsequently served the city well (Ferreira, 2007). According to this source, the master plan's proposals were based on a strong diagnosis and resulted

in the creation of an industrial district as well as effective plans for the spatial expansion of the city (although these contradicted the plan's recommendations for vertical rather than horizontal growth). Industrialists and the ruling elite in Franca have defended the proposal through various administrations, thereby guaranteeing the continuity of the original master plan (Ferreira, 2007). Unsurprisingly, the aforementioned case study makes little explicit reference to popular participation in the preparation or implementation of these plans.

In 1974 SERFHAU was replaced by an agency with an even broader mandate – the National Commission for Metropolitan Areas and Urban Policy (CNPU) within the then powerful Ministry of Planning. This was intended to coordinate an integrated planning system for the nine metropolitan areas and promote growth in medium-sized cities. As noted earlier, the attempt to strengthen medium-sized urban nuclei in order to reduce the proliferation of small cities and expansion of southeastern metropolitan cities was short-lived and ineffectual, as results were once again limited and subject to the influence of powerful interest groups.

An even more ambitious attempt to control population distribution was made by an inter-ministerial task force that worked on the design of a comprehensive internal migration policy for the country between 1973 and 1979. Federal attention focused on the problem of migration as a result of pressure from state and municipal authorities in the southeastern region, which was most affected by massive in-migration, particularly in the city of São Paulo. However, the proposed policies largely ignored the importance of 'implicit' policies on population distribution – decisions affecting the transfer or allocation of resources and impacting on the spatial allocation of economic activities, and thus on job opportunities and migration. As discussed earlier, between 1950 and 1980 such policies overwhelmingly favoured concentration in cities, especially through the promotion of import-substituting industrialization and agricultural modernization (Martine, 1992).

In 1979 the CNPU was transformed into an inter-ministerial council for urban development, the CNDU. Although faith in technocratic planning was ebbing away due to the impact of the global economic crisis on Brazil, the CNDU's mandate was extended to incorporating urban policy into the framework of the National Development Plan. An ambitious urban development law was framed, with the aim of reorienting migration patterns, taking pressure off large cities through the spatial reorientation of public investments, correcting intra-urban distortions and relieving urban poverty.

This broader approach also failed to generate significant momentum in reorganizing urban growth. On the one hand, the 'economic miracle' phase had ended, and a decade-long economic crisis was taking root as a result of the combined effects of recent economic policies and rapid population growth that fuelled an unprecedented urban explosion in the 1960s and 1970s. On the other hand, social unrest was beginning to find forms that the military government was no longer willing or able to repress effectively. Much of this dissatisfaction was channelled through the more progressive segments of the Catholic Church, which became one of the more effective critics of urban policy of the time.

Discussions moved away from previous top-down approaches and increasingly called for greater social participation. When the military stepped down and a democratic government was elected in 1985, the CNDU was reformulated again, incorporating the objective of greater participation and broader-based institutionalization in accordance with the new times. Over the next few years its work laid the foundations for the Statute of the City, which was approved by Brazil's new Constitution in 1988.

5.2 Innovation amidst inequality: the democratic approach

The military regime's centralized, interventionist, top-down and technocratic vision of urban planning entailed taking direct action to improve economic production and increase capital accumulation ('modernization'). The democratic regime that came to power after 1985 reacted to this approach by emphasizing participatory processes, decentralized decision making, and the reduction of social inequality. In 1988 a movement supported by 150,000 voters presented Congress with a progressive amendment for urban reform in the elaboration of the new Constitution. Although this proposal was subsequently watered down, two articles focusing on the key issues of the social function of urban land and squatters' rights have had considerable impact, as has the injunction that such rights be enacted through municipal-level master plans (Souza, 2001: 2).

Since then, urban policy has become the keystone of the country's efforts to make democracy a working reality and to combat entrenched social inequalities. These initiatives have led to bold, innovative practices that have created great expectations and subsequently been replicated in other countries. As recently observed, 'this new, participatory method of urban policy formulation and implementation engenders and expresses a new vision for the ordering of urban space; a new way to see the state's role in development, and a new role for the newly empowered citizenry' (Caldeira, 2007).

The core of the new democratic approach to urban planning in Brazil is undoubtedly the Statute of the City (*Estatuto da Cidade*), which regulated the two critical articles focused on urban issues approved by the 1988 Federal Constitution (the social function of urban land and squatters' rights).[27] This law, which was finally adopted in 2001 after considerable debate, regulates the development of master plans in all municipalities with more than 20,000 urban inhabitants, and those located within the limits of a metropolitan region or urban agglomeration. Centre-left political groups initially viewed the injunction to develop master plans as a residue of the top-down, authoritarian planning approaches of the military regime. Nevertheless, these groups subsequently redefined and reshaped urban planning into a bottom-up approach, and have consequently adopted the Statute of the City as a primary instrument for promoting democracy and reducing social inequality (Caldeira, 2007).

A key article of the Statute of the City established the principle of the social function of urban property, creating instruments that enabled the state to tax or enforce the use of properties that were uninhabited and therefore not fulfilling their social function. This was reinforced by another article, adapted from previous CNDU legislation, which essentially legitimized squatters' rights under specific conditions.

Practical implementation of the Statute of the City was predicated on a combination of socially oriented regulation and democratic management. Popular participation in urban planning would be achieved when civil society organizations and private initiatives took part in debates, public hearings, conferences, popular amendments and participatory budgeting.

As Caldeira (2007) has pointed out, the use of popular participation as a planning tool in Brazil was reinforced by two strange bedfellows whose burgeoning development coincided in historical time: neoliberalism and democracy. Neoliberal influences were actively dismantling the corporatist authoritarian state while ushering in the 'miracle of

[27] See Cities Alliance (2010) for a thorough discussion of the historical origins, ideological underpinnings and actual implementation of the Statute of the City, especially Maricato (2010).

the markets'. Within this model, free speech and democratic participation were promoted as the route to adequate solutions that circumvented the need for State intervention. This period coincided with the reinvention of democracy in Brazil, a process dominated by centre-left political forces, and which defended local government and a participatory ethos in decision making. Each of these forces promoted and legitimized their own brand of citizen involvement in public decisions, and (paradoxically) had to accept the others' right to participate and promote participation (Caldeira, 2007).

Progress in formulating master plans and implementing the new democratic approach to urban management was understandably slow and irregular. This sluggishness was due to the complexities of the issues, lack of practical experience, and the differentiated capacity of social sectors to participate effectively in deciding the affairs of the city. In addition, the allocation of authority and resources among federal, state and municipal entities was often blurred, and the institutional framework for urban policy unclear.

The creation of the Ministry of Cities by the Workers' Party, which took office in 2003, helped give form and direction to the overall thrust of urban policy and planning (Maricato, 2007). The Statute of the City had initially failed to specify a timescale for the preparation of the master plans, but municipalities were now reminded of their obligation to produce them and provided with funds to do so, with the result that almost 90 per cent of them had initiated or completed one by the proposed deadline of October 2006 (Maricato, 2007).

One initial problem stemmed from the fact that creating a new participatory culture for urban management takes an engaged citizenry. Historically rooted inequality, low levels of political participation, high levels of illiteracy (something that until recently denied people the right to vote) and a succession of populist and authoritarian governments were hardly the most propitious context for participatory planning in the complex domain of urban growth. So the results of the recent master planning experience under democratic regimes have also come under criticism. For instance, Villaça's (2005) analysis of MPs in the country's most economically advanced state, São Paulo, concludes that this instrument was ineffective because of the 'violent inequalities in economic and political power' that characterized debates about its urban policy and management.

A second problem is that participants often confused master plans with zoning initiatives, despite the fundamental social, political and ideological differences between the two. Zoning laws had been a permanent fixture on the urban administrators' agenda since the early 1970s. However, they only affect land use, while master plans theoretically deal with a whole range of urban problems, including transport, housing, sanitation, education and other issues that impact on urban life. In fact, the main recurrent concerns in all discussions about master plans have been zoning issues, which typically involve preserving the interests of the rich minority (Villaça, 2005: 45–48).

Some of those involved in the negotiations over master plans evidently had the belief that they would provide a forum to address a wide variety of longstanding social problems, such as education, health, security and employment, which were actually well beyond their mandate and capacity. In addition to this, the fact that many urban management issues could not be resolved at the local level, and/or depended on plans and resources from the state or even federal level inevitably created confusion and overlap in terms of who decided and executed plans and projects that had been approved at the municipal level. In some cities, new master plans co-existed with ones

elaborated during the military regime, and/or with pre-existing sectoral plans for housing, sanitation or transport (Villaça, 2005).

A related problem with master plans, particularly in the metropolitan regions and other large agglomerations, is that they are formulated at the municipal level. Many of the legitimate problems that master plans need to address, especially in large urban areas, have important regional dimensions. Key problems such as sorting out land issues, dealing with urban sprawl and peri-urbanization, ensuring access to permanent water sources, dealing with waste and, even more generally, attracting investment that will generate employment and social welfare, all require a regional approach. Fragmenting responsibilities for urban territory in larger cities leads to administrative inefficiency and compounds social and environmental problems. In short, municipal master plans for larger agglomerations can only deal with certain elements of local issues. It is also clear that the effectiveness of planning efforts in each municipality largely depends on its internal power relations, regardless of whether or not it belongs to a larger urban agglomeration (Maricato, 2010: 6).

The nature and form of popular participation in urban policy and management was another critical issue, one that often overshadowed the technical and administrative complexities of the process. Imbalances in the different social sectors' political and financial clout filtered through into popular participation in the formulation of master plans (Souza, 2001). Although discussions ostensibly took place in 'town hall'-type meetings, in practice other forums tended to be much more decisive, particularly the media and the judiciary.

Caldeira (2007) and Villaça (2005) describe these processes in some detail in relation to the design of the master plan for the municipality of São Paulo. Evidently only a tiny proportion of the 10 million people in this municipality could be heard or even represented in public debates, and it was difficult to maintain a high level of popular interest when the overall objectives were couched in terms of general principles (reducing urban sprawl and socio-spatial inequality) rather than the concrete issues that interested local neighbourhoods.

This led to the emergence of three well-defined interest groups. The real-estate sector focused on the rules governing land use and vertical growth; the traditional middle and upper classes centred on zoning laws that would safeguard the residential privileges of their neighbourhoods; and the popular movement (*Frente Popular*), which was supported by NGOs and academics, focused on the creation of low-income areas as targets for state assistance. In the end, all three succeeded in their respective quests, with the unanticipated result that inequality was formally recognized, leading to the acceptance of lower land use standards for less affluent areas of the city. From an optimistic perspective, this constituted acknowledgement of the reality on the ground and created a better basis for addressing these inequalities over the long term. From a pessimistic perspective, it entrenched these inequalities and made them more difficult to overcome: 'the very legislation of popular participation, intended to reverse urban illegality, has unintentionally legalized spatial inequality... and therefore has set back social justice in São Paulo' (Caldeira, 2007: 3).

While Brazil's Statute of the City has generated positive reactions around the world, such findings suggest that social movements are not the gateway to the rapid resolution of urban management problems. The fact that after over two years of intensive public debate about the master plan, mayoral candidates failed to make a single reference to it in their campaign for the 2005 elections in São Paulo is particularly revealing in this respect (Villaça, 2005: 91).

A less obvious obstacle to the adoption of democratic practices that would increase citizen involvement and promote equality was the innate tendency of many local administrations to try to improve their cities and towns by making it difficult for migrants and poor people to settle in their localities. We have already mentioned important research by Feler and Henderson (2008) revealing systematic exclusionary practices in poor urban communities of Brazil. This involved setting minimum plot sizes for housing that made it impossible for poor people to build homes legally, and other practices such as cutting them off from basic infrastructure services. The data indicate that regulations promoting exclusion are more prevalent in poorer communities and those with a greater proportion of migrants. As noted by the authors, such exclusionary practices have far-reaching implications, not only for the living conditions of the poor, but also for the urban locality itself.

In short, as Maricato (2010: 6) observed, 'it would be ingenuous and pretentious to expect any law or plan to provide complete solutions to problems that are deeply historical and structural'. Despite this obvious limitation, considerable social progress has been made through attempts to plan and manage cities through popular participation. For instance, the Statute of the City has generated considerable debate about social justice and the plight of the urban poor in the country's most powerful city, São Paulo. The quality and density of its political processes was undoubtedly advanced as for the first time the rich and powerful were obliged to defend their interests explicitly in public debates rather than behind closed doors.

Meanwhile, low-income citizens obtained legal rights to the land they occupy in the city centre, putting an end to their previous unceremonious expulsion at the whim of urban managers. They also received public support, not only for their housing and infrastructure needs, but also to ensure that their other concerns would be heard through political representation. In the past *favelas* were often simply demolished whenever real estate developers wanted their land; now the formalization of illegal settlements has given them the status and political clout of neighbourhoods. Areas devoted to low-income housing have become 'special zones of social interest' (ZEIS) and are thus protected from real estate speculation.

Another key aspect of the democratic approach to urban management that has received considerable international attention is 'participatory budgeting' – direct civil society participation in defining priorities for the allocation of municipal budgets. This was not legislated for in the Constitution, but arose out of democratic processes. Originally attempted in two smaller cities in southern Brazil at the height of the military dictatorship in the 1970s, this approach has since been utilized in more than 200 cities in Brazil as well as many other Latin American and more distant localities.

It is generally acknowledged that the most consistent experience with participatory budgeting was instigated by a mayor elected from the Workers' Party in the city of Porto Alegre in 1989. Since then, part of the municipal budget has been subject to public negotiations between the municipal government, social movements and the citizenry, who discuss the needs and priorities of the population in 16 administrative sub-regions. A series of scheduled meetings are held every year in each of these regions, for the mayor's office to account for expenditure and civil society representatives to present their views on the priorities for the coming year (Jacobi, 1999; Souza, 2001).

There have been significant fluctuations in the proportion of the municipal budget in Porto Alegre that is actually negotiated through this participatory process. In 1994, for instance, it amounted to 22.4 per cent, three-quarters of which was earmarked for land tenure regularization/housing, risk areas, paving and basic sanitation (Jacobi, 1999,

footnote 14). The proportion of the budget negotiated with the resident population increased to almost 70 per cent in 2002, but has since declined to about 35 per cent, giving a historic average of around 50 per cent. The percentage of the investment plan that has actually been implemented has dropped continuously since the early years of the participatory budgeting proces**s** (World Bank, 2008: 48).

Budgeting is done in three stages. The administration formulates a proposal, discusses it with the regions and defines investment priorities. It then devises a strategy for weighing priorities against the expected resources in each secretariat with regional delegates, leading to an overall investment plan and a list of the works that will be supervised in a third phase, in which the public can control and monitor the city's investments. These discussions follow a preordained calendar of activities and the budget provides a focus and motivation for all popular debates (Jacobi, 1999: 7).

Recent analysis sponsored by the World Bank of the Porto Alegre experience indicates that an impressive 20 per cent of the municipality's population had participated in these discussions in some way. Participation was highest during a fiscal crisis in 2002, when some 18,000 people were involved in the process. Although this fell to fewer than 12,000 people in 2006, the level of interest and participation has remained high. The study argues that maintaining such participatory mechanisms over a long period, as in Porto Alegre, generates important redistributive impacts for the poorest segments of the population; on the downside, however, it suggests that this process has done little to improve fiscal performance (World Bank, 2008).

In sum, participatory budgeting refers to a continuous exercise that enables citizens to express their views on local priorities and needs. In that sense, it does not have the overall strategic and longer-term ambitions of a master plan. Since there is no mandate for it in the Constitution or any other specific statute, and no subsidized federal funding for its implementation, it is simply adopted in accordance with the political perspectives and interests of different elected mayors, and therefore does not easily lend itself to institutionalization. Nevertheless, participatory budgeting reflects the same desire to make urban planning address social justice issues rather than simply define the use of urban space; also to reduce traditional clientelistic practices and ensure that political decisions are transparent and accountable to popular control. The Porto Alegre experience has not only led to this approach being adapted to a number of other cities in Brazil, Latin America and elsewhere, but has also spawned a plethora of participatory governance institutions, especially municipal policy councils and participatory budgeting bodies (World Bank, 2008).

Taking an overview of the recent Brazilian experience, it is clear that socially guided master plans and participatory budgeting processes are no panacea for urban problems. But this was even more true of traditional urban planning tools. Enacting democratic procedures such as participatory master plans and participatory budgeting presupposes an organized civil society and an informed and interested citizenry. These do not spring up overnight in a society historically characterized by huge inequalities in assets and power. It is no coincidence that most of the more effective participatory efforts witnessed so far have been in the southern region of Brazil, which has traditionally had higher levels of literacy, political consciousness and mobilization.

At the other extreme, experts point to the deteriorating preconditions for social mobilization in the *favelas* of Rio de Janeiro as the clearest example of the difficulties of promoting effective bottom-up urban management (Caldeira, 2007; Souza, 2001). In recent decades Rio's *favelas* have been dominated by local drug barons who are a local source of order, jobs and wealth, but also have a strong vested interest in maintaining the status quo. Accordingly, they either dominate local neighbourhood

associations or pressure them to retain the traditional informal status of the *favelas*, thereby restricting outside influences and maintaining their control over residents. The conditions for local participation in urban management are obviously curtailed under such circumstances.

Given that a strong civil society is a prerequisite for participatory planning and management, the recent 'Nossa São Paulo' initiative ('Our São Paulo Movement') provides a different and potentially powerful starting point to promote the groundwork for more democratic and effective approaches to urban planning and management.[28] Launched in 2007, this movement aims to promote citizen participation and boost the deteriorating credibility of political activity and public institutions in the city of São Paulo. Following the lead of similar movements in Barcelona and Bogota, this leaderless alliance hopes to stimulate a participatory framework for political decision making and generate a social, economic and political force that will be capable of committing successive governments to making São Paulo an attractive, safe and sustainable city that offers every resident a high quality of life. It promotes active participation and social mobilization, and generates baseline information and indicators that enable citizens to monitor the impact of public sector initiatives and thus improve government efficacy and transparency, irrespective of their political party. This apolitical initiative is supported by over 600 civil society organizations, as well as private citizens, community leaders and private enterprise.

If generalized, this type of initiative may, in the long run, have great significance in creating the conditions for more effective approaches to improving the quality of urban life and reducing social inequality. The kind of broad-based awareness-raising, popular participation and consensus building carried out by movements like Nossa São Paulo may be one of the necessary preconditions for more effective governance. While the imperfect and unequal results of participatory master plans and participatory budgeting in Brazil might be seen as somewhat frustrating, expectations that such initiatives could somehow steer Brazilian society out of its accumulated social, political, economic and demographic debts may have been too lofty in the first place.

Urban management in large and heterogeneous cities is extremely complex even in the best circumstances, and is apparently impervious to 'perfect' solutions. What has been achieved should be viewed in more positive terms, at least in some cities: as a contribution to the formation of a more enlightened citizenry, the reduction of clientelistic practices and the provision of an effective voice for the poorer segments of the population. More can always be done. Effective democratic participation not only depends on mobilizing the population, but also on improving the quality of the information on which different sectors base their decisions. A fully mobilized and informed society may sometimes be a misleading mirage, but incremental improvements can make a substantial difference and hopefully provide the basis for further improvements.

6. Final considerations

Rapid urban growth is arguably the single most influential process affecting social, economic, political and demographic trends in low- and middle-income countries in the 21st century. The huge scale of urban growth in developing countries, particularly in Asia and Africa, is unprecedented in human history, and the manner in which population concentration evolves in towns and cities in coming decades will directly affect development, poverty and environmental conditions on a global scale.

[28] Information on the Nossa São Paulo movement presented here is largely obtained from websites, including: http://www.nossasaopaulo.org.br/portal/quem.

Until now, policymakers have largely limited themselves to reacting to urban growth. Given the scale of ongoing changes, the social and economic dynamics of urban processes and the breadth of their implications, such a laissez-faire approach is an invitation to disaster. If it is well oriented and properly governed, urbanization can be a positive force in reducing poverty, stabilizing population and creating environmental well-being. Left to its own devices, massive urban growth in impoverished and highly stratified countries leads to the perpetuation of avoidable poverty, enormous slum growth and considerable ecological deterioration.

Although this paper shows that the trajectory of the urban transition is shaped by given contexts, conjunctures, cultures and complexities, the experience of massive rapid urban growth in Brazil described here offers important lessons that can be built on by other developing countries in earlier stages of the urban transition. The foregoing analysis highlights the characteristics and some of the main social and environmental problems of the Brazilian process, showing that this transition came at considerable and preventable cost to the population. Many of the severe ongoing challenges stem from persistent inequalities and failure to take a proactive stance towards urban growth.

Even in the recent period of slower demographic growth, settlement patterns still contribute to the worsening environmental and social difficulties that affect urban populations. Deeply ingrained inequality has not only determined many of the crucial characteristics of this process, but also made policymakers unwilling and unable to deal effectively and proactively with what was clearly an inevitable transformation. Despite the advanced stage of the country's urban transition, 26.9 per cent of the urban population in Brazil lived below the poverty line in 2007, with 6.6 per cent in extreme poverty.[29] Access to minimal services and the benefits of urban life is therefore still a problem for more than one-quarter of Brazil's city dwellers.

It is acknowledged that cities, and large cities in particular, have clear advantages in global economic competition and greater potential for improving their residents' social conditions. The prospects for sustained growth largely depend on the capacity of a country's cities to compete in the current context of globalization. Making cities function in order to attract investment and create jobs and income is evidently crucial. Brazil should have an important head start in the current global economic competition, given its advanced stage of the urban transition, high levels of urbanization, number of large cities and well-developed network of cities. Indeed, 90 per cent of the country's GNP is already produced in cities. In addition to this, it no longer has to deal with massive in-migration to cities or even high levels of overall population growth, given the rapid decline in fertility that was partly brought on by precocious urbanization.

Nevertheless, it is clear that the country has yet to transform all the theoretical advantages of an early urban transition into reality. In the last 15 years of the 20th century, Brazilian cities showed low productivity growth (proxied by income growth), especially the larger ones (World Bank 2006, Vol. 1: 2). This can be attributed to increased levels and types of informality, crime and violence, and poor basic infrastructure. The locus of demographic growth has shifted from urban centres to the peripheries of larger cities, and since this expansion is largely composed of poor people, infrastructures and services for new settlements are inadequate, while segregation increases as gated communities also spring up in these areas. These

[29] Compared with 45.7 per cent of the rural population classified as poor, and 18.1 per cent as extremely poor. Data obtained from the ECLAC website on 9 February 2009: http://www.eclac.org/estadisticas/bases/.

difficulties show little sign of abating even though overall urban growth levels peaked several decades ago.

In the euphemistic language of technocracy, significant ‘policy failures’ have increased the gap between expectation and reality in Brazil’s urban transition. Local management and good governance are critical to a city’s performance, and while there have been isolated instances of good practices in Brazilian cities (which are even being emulated internationally), practically all of them are affected by extensive ‘policy failures’. Those that have occurred in the land and housing sphere are particularly important, not only cascading into various social and environmental ills that impact most on low-income urban dwellers, but also affecting the ability of cities to compete more effectively on the global stage. As the World Bank noted, ‘Slums are probably the most visible and perverse consequence of policy failures in urban settings’ (World Bank, 2006, Vol. 1: 23).

In market terms, this situation can be attributed to the ‘very low price elasticity of housing supply’ and inability of the formal market to respond to the demand for housing. In sociological and political terms, it reflects the consequences of a deeply ingrained tolerance of inequality and lack of attention to the needs of the poor, even though they constitute the largest social group in urban society. Such inattention lies at the very heart of the difficulties Brazil is experiencing in trying to match its progress in global markets to its demographic advances in the urban transition. Historically structured and deeply sedimented inequalities have undoubtedly contributed to society’s unwillingness to deal more effectively with the obvious needs of the major social group in Brazil’s urban growth, and the limited results achieved thus far by different government agencies and other social forces attempting to address these entrenched difficulties .

In short, a recalcitrant unwillingness to accept and prepare for massive growth has not only made Brazil’s urban transition unnecessarily traumatic, but also left a legacy of social and environmental problems that prevent the country from benefiting from all the inherent advantages offered by urbanization. It is a matter of some concern to observe a similar inattentiveness to the needs of the masses swelling the cities of low- and middle-income countries in Asia and Africa.

Furthermore, analysis of the efforts made by Brazilian cities to compete in a globalized economy indicates that the circumstances shaping local-level responsibility and governance are changing rapidly around the world. In Asia and Africa, where the scale of future urban growth will inevitably multiply needs and opportunities, much greater attention will need to be given to the challenges of local governance and the mechanisms and information bases required to deal with them at the local level.

Recognition of the magnitude and implications of this ongoing change has been slow, as a succession of other shorter-term global issues inevitably seems to take precedence. The perception that a ‘business-as-usual’ approach to future massive urban growth will be utterly inadequate has also been slow to register. The manner in which rapid urban growth is currently handled in many low- and middle-income countries gives cause for concern, as the proportion of developing countries that have adopted policies to curb urban growth has soared from 44 per cent in 1976 to 74 per cent in 2007 (United Nations, 2008b). Such increasingly negative attitudes towards urbanization, especially in the countries currently experiencing the fastest growth rates, reflect misapprehensions about the challenges and opportunities of urban growth that will undoubtedly result in increasing poverty and environmental degradation if they persist.

Leaders of the urbanizing world should embrace and plan for inevitable urban expansion, rather than vainly attempting to prevent it as Brazilian policymakers have done. Accepting that the poor have the right to be in cities is a critical first step; the next is to prepare ahead for their land and housing needs within a constantly updated vision of sustainable land use. The most effective way of achieving this is to provide land and services for them before the fact, rather than taking remedial actions that are much more costly to both poor city dwellers and the city itself (Angel, 2008; UNFPA, 2007).

Studying the situation in Brazil also provides political and administrative insights into urban governance. Addressing inequalities through democratic and participatory processes is difficult and dependent on the legal and political context, but can have a significant longer-term influence on the inclusion of poor people into the citizenry and on poverty reduction. Therefore it is important that this is done in a 'planned' manner, not just for disadvantaged groups, but for society as a whole. Brazil and its individual cities would have been much better served if inequalities had been addressed earlier and urban growth accommodated, rather than the discriminatory efforts that were made to prevent settlement by the poor.

On a managerial level, the study suggests that using economic arguments to determine what sort of urban centres ought to be favoured has not yielded the results generally hoped for by policymakers. This reduces the validity of their traditional attitudes to deconcentration, the stimulation of smaller cities and even efforts to achieve interpersonal equity through fiscally sponsored spatial redistribution of economic opportunities. The critical thing is matching infrastructure to future sites of urban growth, and recognizing that infrastructure does have at least a modest influence on where that growth occurs.

Finally, cities tend to become more spatially, politically and administratively fragmented as they expand, with responsibility for urban problems compartmentalized into a growing number of administrative entities and layers. Yet some of the most critical problems affecting large urban areas cover a much broader region and cannot be dealt with in this piecemeal way. Key problems generally require a regional approach, while the fragmentation of responsibilities for urban territory in larger cities leads to administrative inefficiency and compounds social and environmental problems. If rapid urban expansion is to fulfil its promise in newly urbanizing countries, a balance will have to be found that facilitates the effective representation and consideration of local needs, particularly those of poorer sectors of the population.

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Annex 1: Data Sources: Strengths and Weaknesses

Periodic demographic censuses are the primary source of information used in the description and analysis of urbanization trends in this paper. These data do not cover the colonial period since the first demographic survey of any sort in Brazil was first carried out only in 1872; other 'censuses' were carried out precariously at ten-year intervals starting in 1890, but they also fail to provide information on urban areas as such (Senra, 2007). The first modern census was carried out in 1940. Hence, the broad sweep of urban growth during the colonization period presented here reflects a compendium of historical studies rather than census data.

For periods subsequent to 1940, good demographic data are available. By comparison to most developing countries, Brazilian census data on urban growth trends can be considered as fairly comprehensive and accurate. Relevant statistics have been collected at ten-year intervals for seven consecutive censuses since 1940.[30] Throughout this period, the definition of what constitutes an urban area has remained basically the same. It refers to the population living in the administrative seats of municipalities or their sub-districts, independently of their size.

This official definition of what constitutes an 'urban' area in Brazil is rather generous and does lead to the inclusion of some minuscule hamlets as 'urban'. Such a practice has led to some rather heated debate recently on how 'urban' the country actually is today (cf. Box 1). Nevertheless, the data also permit us to use a somewhat more discriminating definition of urban. Much of the present analysis will focus on localities having at least 20,000 inhabitants; although arbitrary, this lower limit ensures a certain correlation with commonly accepted characteristics of urbanism. Throughout this paper then we will refer variously to urban areas according to the 'official' definition (including settlements of fewer than 20,000) or to 'urban localities' (excluding settlements of fewer than 20,000) depending on the data available. Moreover, since many functional agglomerations increasingly consist of a number of adjacent municipalities, researchers have recently worked out a grouping of municipalities to form a list of urban agglomerations that will also be utilized in this paper when discussing the most recent intercensal period.[31]

Another drawback stems from the fact that the number of municipalities has increased from 1,574 in 1940 to 5,507 in the 2000 census, thus multiplying the number of 'urban' sites, according to the official definition. Though there has been an enormous growth in the number of urban settlements, most of the new are so small that they are adding little to the urban population figures Despite the huge increment in the country's overall population – from 41.2 million in 1940 to 169.8 million in 2000 – and despite the fact that the proportion of the urban population (according to the official definition) living in localities of fewer than 20,000 inhabitants fell from 65 per cent in 1940 to 18 per cent in 2000, the proportion of municipalities having *fewer* than 20,000 total inhabitants has grown in the interim, from 54 per cent to 73 per cent. In the year 2000, 84 per cent of the localities officially defined as urban had fewer than 20,000 inhabitants. This apparently huge discrepancy, however, is minimized by the fact that these smaller municipalities accounted for only 18 per cent of the officially-defined 'urban' population.

[30] The one exception is that the census which should have been carried out in 1990 was, in fact, postponed until 1991.
[31] The concepts of agglomerations commonly used are the result of a comprehensive urban study by IPEA, IBGE and UNICAMP (2002).

This trend towards a larger proportion of smaller municipalities evidently stems from the dismemberment of municipalities, especially in the period after the 1988 Constitution, which fostered the creation of a large number of new municipalities (1,307), ostensibly in order to favour the process of decentralized government. Thus, in 1940, municipalities covered a much larger average territory than they do now, and most of the newly created municipalities tend to be very small in demographic terms.

Box 1 – **Is it really urban?**

Following the 2000 demographic census, a Brazilian agronomist (José Eli de Veiga) wrote a book attacking the recently published data that showed Brazil reaching an 82 per cent level of urban population. His criticism was directed at the usual definition issues, but his main concern was with the mounting relegation of the rural world to an insignificant status.

Veiga (2002) looked at the multiplication of municipalities, especially in the period after the 1988 Constitution, and observed that, in 84 per cent of the 5,507 municipalities described by the census, the official 'urban' seat had 20,000 or fewer inhabitants. He noted that one particular municipality (União da Serra in the state of Rio Grande do Sul), only had 18 people in its 'urban' segment. To Veiga, this over-dimensioning of the 'urban' component reflects society's identification of rurality with backwardness and degradation and a characteristic to be 'overcome'.

These views contrast with those of another author (Caiado, 2003) who, writing from the perspective of the state of São Paulo, sees urbanism stretching out into rural areas to such an extent that the rural–urban dichotomy has become meaningless. According to Caiado, the main phenomena at work are conurbation, metropolization and the expansion of non-agricultural activities in rural areas. More than anything else, this brings into question the functionality of municipal limits since the spatial location of economic, environmental and other realities extend beyond the limits of such units.

Such contrasting perspectives reflect not only the classic problem of defining 'urban' in ways that will be acceptable to most people, but also the realities of a large and very heterogeneous country that includes both heavily occupied and dense areas as well as large and sparsely settled regions. Such disparities are an invitation to 'half-full' versus 'half-empty' arguments. Ultimately, the fact that a majority of municipalities have small urban populations does not detract from the fact that the country has a large number of very 'urban' localities and that these house a significant proportion of the total population.

The multiplication of the number of municipalities over time evidently poses methodological problems for researchers in many areas, inasmuch as it creates units of observation that are not strictly comparable over time. Nevertheless, this is less of an issue when dealing – as this paper does – with urban growth trends over a longer period, since it is possible to differentiate urban localities according to their size, and to analyse trends with respect to larger urban communities, a procedure that will be used here whenever the data permit.

Finally, the fact that the data on urban areas are generated exclusively by the decennial censuses means that the latest available information at the time of this writing refers to events that occurred prior to 2000. Undoubtedly, much has transpired since then in terms of city growth patterns and one would ideally want to weave these more recent events into the narrative of Brazilian urbanization history. On the other hand, since it can confidently be stated that the apex of urban growth rates (though not of absolute increments in urban population) was reached several years ago, and since the country's urban transition is basically completed, events since the last census are more likely to have affected intra- and inter-regional displacements of urban growth hotspots than the overall trajectory of Brazil's urban history that is being described

here. Moreover, since the main goal of this paper is to provide a history of rapid urbanization in a developing country that will help pinpoint the dos and don’ts of policy in such a context, the inability to describe more recent trends is a lesser issue.

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