ipea Instituto de Pesquisa Econômica Aplicada

Título do capítulo	CHAPTER 10 MOBILITY IN BRAZILIAN METROPOLITAN REGIONS: MIGRATION AND COMMUTING PROCESSES
Autores (as)	Paulo Delgado Marley Deschamps Rosa Moura Anael Cintra
DOI	-

Título do livro	**CITY AND MOVEMENT: MOBILITIES AND INTERACTIONS IN URBAN DEVELOPMENT**
Organizadores (as)	Renato Balbim Cleandro Krause Clarisse Cunha Linke
Volume	-
Série	-
Cidade	Brasília
Editora	Instituto de Pesquisa Econômica Aplicada (Ipea) Instituto de Políticas de Transporte & Desenvolvimento (ITDP Brasil)
Ano	2016
Edição	-
ISBN	: 978-85-7811-282-0
DOI	-

© Instituto de Pesquisa Econômica Aplicada – ipea 2016

As publicações do Ipea estão disponíveis para *download* gratuito nos formatos PDF (todas) e EPUB (livros e periódicos). Acesse: http://www.ipea.gov.br/portal/publicacoes

As opiniões emitidas nesta publicação são de exclusiva e inteira responsabilidade dos autores, não exprimindo, necessariamente, o ponto de vista do Instituto de Pesquisa Econômica Aplicada ou do Ministério da Economia.

É permitida a reprodução deste texto e dos dados nele contidos, desde que citada a fonte. Reproduções para fins comerciais são proibidas.

CHAPTER 10

MOBILITY IN BRAZILIAN METROPOLITAN REGIONS: MIGRATION AND COMMUTING PROCESSES

Paulo Delgado[1]
Marley Deschamps [2]
Rosa Moura[3]
Anael Cintra[4]

1 INTRODUCTION

During the past decade, according to data from Brazil's 2010 Demographic Census, there has been an upsurge in the number of people commuting each day to jobs in municipalities where they are not residents. According to this Census in 2010, 12.8% of the employed Brazilian population ten years of age or over more worked outside their municipality of residence. Moura, Delgado and Costa (2013) demonstrated that more than half of Brazil's municipalities posted commuter flows of this type in 2010 involving a thousand people or more, travelling in or out of municipalities. Although widely disseminated nationwide, this is a process that is basically associated with the expansion of urban agglomerations in Brazil, particularly metropolitan regions (MR), made possible by extended networks of public and private transportation. Along these lines, the Brazilian Institute for Geography and Statistics (IBGE, 2015, p. 15) notes that expansion within urban agglomerations occurs in response to two different logics: "that of jobs located in the center of urban agglomerations, and that of housing, in terms of expanding outlying areas that are home to increasingly large numbers of workers."

The increase in this type of travel has gained importance within a context where the types of population mobility in Brazil that involve change of domiciles are undergoing sweeping changes. Referring to these processes, which began during the 1980s and 1990s, Magalhães et al. (2014) stress that short-haul migratory flows (intra-regional and intra-state) have increased in importance during the

1. PhD in Environment and Development; researcher - Economic and Social Development Institute (IPARDES). E-mail: <pr.delgado63@gmail.com>.
2. PhD in Environment and Development; INCT/CNPQ researcher – Metropolis Observatory. E-mail: <mvdeschamps@hotmail.com>.
3. PhD in Geography; IPEA/PNPD grant-holder; INCT/CNPQ researcher – Metropolis Observatory. E-mail: <rmoura.pr@gmail.com>.
4. PhD in Sociology; researcher - Economic and Social Development Institute (IPARDES). E-mail: <anael@onda.com.br.>.

past few decades, as mobility has increased, with more migratory trips recorded in personal travel through Brazilian territory. According to Tavares (2014, p. 1), flows are becoming more fragmented, with distinct social and economic influences affecting mobility, and mobility has in turn become essentially urban.

Although some authors (Moura, Branco and Firkowski, 2005; Carvalho and Rigotti, 1998) emphasize the need to distinguish between these two types of population mobility – migration and commuting – the intrinsic nature of movements underscores the undeniable need to seek connections between them, particularly with regard to physical expansion processes of urban agglomerations, as stated by other authors (Cunha, 2012).

In addition to exploring theoretical production that address these two types of travel, particularly by examining factors that are associated with the changing nature of these processes in Brazil, this paper intends to measure and describe how the migration and commuting processes have shaped urban expansion in major metropolitan regions, as well as examine the relationship between them.

Providing support for this topic, some specific issues must guide the analysis. What is the proportion of population segments – migrants and non-migrants – for commuter flows in each metropolitan region? What are the commuting rates for these various segments of the population? Among immigrants, is there any difference in their share of commuter flows based on whether they originate from within the metropolitan region or come from other areas or states? Does this proportion change with type of commuter flow (center/outskirts, outskirts/center, outskirts/outskirts)?

Other more general questions also require deeper reflection: do intra-metropolitan migrants opt for more remote neighborhoods, which probably have lower cost and better quality housing in metropolitan expansion areas, while maintaining their work, study (and also consumption) links with central municipalities,[5] and consequently accepting daily commutes? Or is it only new, non-metropolitan migrants who are forced to live in outlying municipalities due to housing cost constraints, forced to cope with the difficulties of commuting to central municipalities for work or study? Do non-migrants form a majority for this type of mobility? Do they prefer to commute, instead of migrating within an urban cluster, therefore keeping the places where they live quite separate from the places where they work or study?

5. In this paper, "central municipalities" or "centers" refers to the main municipality of a metropolitan area of Brazil, e.g., the city of São Paulo is the central municipality of the São Paulo metropolitan region, which encompasses numerous municipalities. "Outskirts" refers to the other municipalities of the region. "Commutes" refers to travel between municipalities, which are geographical units of Brazil that correspond to administrative and political boundaries, and the basis upon which the Demographic Census collects information on mobility.

This chapter uses empirical data obtained from microdata in the 2000 and 2010 Demographic Census. The spatial boundary adopted in this investigation consists of the institutionalized areas of twelve metropolitan regions, compliant with the classification presented in the study on Regions of Influence in Cities (*Regiões de Influência das Cidades* – Regic, 2007; IBGE, 2008), as follows: Belém, Belo Horizonte, Curitiba, Fortaleza, Goiânia, Manaus, Porto Alegre, Recife, Brasília,[6] Rio de Janeiro, Salvador and São Paulo.

The reference population consisted of persons employed on the labor market in metropolitan regions, as the object of this mobility study is the link between migration and commuting to and from work. Although variations occurring between 2000 and 2010 were taken into account in these population groups as a whole (migrants and commuters) the links established between them are based on data from the last Demographic Census.

For migrants, the researchers decided to work with a population living for less than ten years in the municipality of domicile. This option was prompted by awareness that the type of question used for the analysis – last stage or fixed date – could affect the results of the analysis. For example, Rigotti (2008, p. 6), states that for some approaches, such as those focused on the workforce, "questions on duration of residence and last place of residence are crucial", as they are related to the last migration stage.

2 THE ISSUE OF IMMIGRATION AND RISING COMMUTER MOBILITY IN BRAZIL

During the second half of the 20th century and the first decade of the current century, a lengthy redistribution of the population occurred throughout Brazilian territory, characterized by the appearance of some dominant trends in terms of major population flows (Brito et al., 2012), recurring over several decades. The Northeast and, to a lesser extent, Minas Gerais state, may be viewed as Brazil's main work force reservoirs, with the Southeast and the constantly expanding agricultural frontiers in Northern Paraná State, together with the Center-West and Northern regions, constituting the main destinations for these population flows.

During the first major phase, which extended from the years after World War II through to the 1970s, this process was characterized by heavy population concentration. Between its two main driving forces – industrialization and agricultural expansion – the latter predominated in terms of the size of the mobilized population. According to Baeninger (2012), this was a time of heavy flows of migrants streaming into Southeast Brazil, fuelled by the steadily increasing rural

6. Because Brasília's region encompasses more than one federal state, it was institutionalized as an Integrated Region of Development (Região Integrada de Desenvolvimento – Ride). This Ride, presented as one metropolis, will be treated equally together with the group of other institutionalized metropolitan regions.

exodus to urban areas, with migrants gathering mainly around Brazil's major metropolitan areas.

However, mainly from the 1980s onwards, this type of migration vanished, due to changes that resulted in a certain level of population dispersal nationwide. While this decade and the subsequent one were characterized by Brazil's lengthy economic restructuring and adjustment process, dimming the attractions of labor markets in major metropolitan regions – fundamentally in São Paulo and Rio de Janeiro metropolitan regions – these were also the years in which the results of territorial dispersal of economic activities (which started back in the 1970s) began to appear, particularly for industry.

Referring to the first of these economic factors, Rigotti (2014) shows that the after-shocks of the economic crisis tarnished the relative allure of Brazil's major metropolitan regions as migrant magnets, although its largest one – the São Paulo MR – never lost its status as Brazil's main population redistribution hub during any of the subsequent decades (Baeninger and Peres, 2011).

On the other hand, Baeninger (2012) feels that the dispersal of Brazil's production sector not only helped keep populations in other parts of the country, but also spurred the appearance of significant flows of migrants into these areas. Conducting his analysis on an inter-state scale, this author stresses that Demographic Census data show that the 1980s go down in migration history as the time when the largest number of Brazilian states posted positive balances in their population exchanges.

It must be added that the redistribution of the Brazilian population was also driven by specific demographic factors functioning concomitantly with social and economic changes. According to Rigotti (2014), dropping fertility with less natural population growth affected demographic dynamics in several parts of Brazil, with a stronger initial impact felt in more economically dynamic areas. Furthermore, because of lower fertility, birthrates became less important to population growth, and migrant exchanges at various scales became a crucial factor for explaining the redistribution of the Brazilian population during the last twenty-five years of the 20th century.

This is not the place to present details of variations in regional flows over the past few decades, which has been well portrayed by the above-mentioned authors. Instead, it is important to draw attention to the changes that characterize new migration patterns in Brazil.

Synthesizing these changes, Brito et al. (2012, p. 21) state that:

> Historical datasets covering the second half of the XX century and the first decade of the XXI century reveal this apparent paradox: changes in migration patterns and

> maintenance of main migration routes. In fact, the routes remain, but almost all of them present an innovation: in addition to outflows, there is also a significant backflow. The numbers of immigrants and emigrants are tending to even out, except for rare exceptions. This is a fundamental change in the migration pattern that prevailed through to the 1970s, as there are no longer states or regions that are major origins or destinations of massive migrant flows.

According to these authors, the regional inequalities that have always triggered population shifts are still present, but mobility patterns have become more complex. Flows of migrants returning to their regions of origin have become more important in population shifts, accounting for some 20% of inter-state or fixed-date immigrants recorded during the last three Demographic Censuses (Brito et al., 2012).

Moreover, short-term moves are also on the rise, undertaken immediately prior to the Demographic Census, during the previous five years or less. The weight of this type of migration has almost tripled during the last three decades, reaching 28.34% of the total number of last-stage immigrants living for less than five years at their current places of residence[7] (Brito et al., 2012).

The importance of long-distance inter-regional flows has dropped in the total number of trips, but major metropolitan regions – São Paulo and Rio de Janeiro – and the Goiânia and Brasília metro regions still attract appreciably large flows of this type. On the other hand, intra-regional exchanges reflecting social and economic dynamics at the regional level now carry greater weight in inter-state exchanges, with this phenomenon observed in Northeast and Southern Brazil.

Throughout Brazil's entire urbanization process, its metropolitan regions[8] were vital destinations for domestic migration. In fact, as recalled by Brito (2006), urbanization and the spatial clustering of the Brazilian population during the second half of the 20th century took place simultaneously with the formation of major metropolitan agglomerations. Despite a drop in the relative share held by these areas in Brazil's total urban population during that period, they are still home to a significant proportion of this population (around 40% in 2000, living in the twelve spatial units taken into consideration by the authors).

Furthermore, Brito (2006) points out that the consolidation of Brazil's metropolitan agglomerations during the past few decades, underpinned mainly

7. Note that the data on both types of migration were calculated for different populations: return migration for fixed-date inter-state immigrants, and short-term migration for last stage migrants living in the State for less than five years.

8. After the promulgation of Brazil's 1988 constitution, there was a proliferation of special units institutionalized as metropolitan regions. However, studies of Brazil's urban network have shown that the metropolitanization phenomenon is basically limited to nine units defined in the 1970s, in addition to three urban agglomerations (Goiânia, Brasília and Manaus) ranked as metropolises by the City Areas of Influence Survey (Regic, 2007; IBGE, 2008). The studies consulted here tend to use this classification when referring to metropolitanization, distinguishing them from other units institutionalized as non-metropolitan urban agglomerations.

by their ballooning outskirts with growth rates outstripping those of central municipalities, also accounts for the largest increases in metropolitan populations for most of these cities. The author lists factors explaining this greater role by urban outskirts, which warrant particular attention due to their relevance to the issues addressed in this paper. According to Brito, "three factors explain this reality: first, plummeting birth rates among women, which have certainly dropped more steeply in centers than in outlying areas; second, but certainly more important, intra-metropolitan flows of migrants, with balances favorable to urban outskirts; third, the migration balances between each agglomeration and the rest of Brazil have been more favorable for outlying areas (Brito, 2006, p. 228)." These factors, particularly the latter two, are related to the logic of urban expansion, while housing space – which does not necessarily coincide with the location logic of production activities – gives rise to the massive gap between housing and jobs.

Cunha et al. (2013) suggest that the mismatch between population settlement areas and the location of job opportunities may be addressed on a macro basis by considering processes of housing space production and those leading the location of production activities, as well as at the micro level, focused on individual preferences that are possible for some population segments, through amenities associated with residential choices.

For some of Brazil's major urban areas, particularly the São Paulo metropolitan region, migration and commuting are also connected at another spatial scale resulting from relationships built up among a variety of population arrangements (Cunha et al., 2013; IBGE, 2015).

With respect to the changes that migratory processes are undergoing, some interpretations emphasize the decrease in internal migration. But other author authors claim that migratory flows are still significant, and that the changing profile of migrants provides new challenges in terms of theory and policy formulation (Rodríguez, González and Martínez, 2012).

These authors highlight that, despite falling indexes of urban primacy in some countries, large cities of Latin America are still growing relative to the total population of the region, from 11% in 1950 to 32% of the total regional population in 2010. This fact contradicts hypotheses of the decentralization of population, and highlights the role of large cities in the context of globalization. Even with reduced migration rates, these cities are experiencing growth rates for short-distance and intra-agglomeration migration that are higher than rates of population growth. These processes are responsible for the peripheral growth that characterizes Latin American cities (Rodríguez, González and Martínez, 2012).

It is quite clear that these changes are not a specific characteristic unique to Brazil, but are also found in other Latin American countries. Long-distance flows

are becoming less important, overtaken by short-distance and international flows, as well as commuting movements. This is synthesized in the study by Rodríguez (2013, p. 89):

> In conclusion, the current context of spatial redistribution of the population is different from that of the previous century, when the region reshaped its territorial settlement pattern for its populations, through massive waves of internal migration. Fuelled by rural-urban migration, urbanization was one of them; the others, also broad-ranging, were the exodus from historically underprivileged settlement areas, waves of immigrants seeking metropolitan areas, and flows into areas with low demographic density. The first of them persist, although much weaker; the third is no longer widespread, due to the loss of appeal of some metropolitan areas; and the fourth continues, although intermittently and on a lesser scale, without the official backing it enjoyed in the past.

Among the reasons explaining the drop in internal migration flows in the Latin American countries, Rodríguez (2013) highlights an increase in commuting, either daily or for other periods, recorded in the countries under analysis. The concept of commuting encompasses a type of population movement that is on the rise in Brazil, mainly in metropolitan areas, but also extending into smaller urban agglomerations.[9]

Commuting has also acquired importance in Brazil, within a context where other types of population mobility have been subject to sweeping changes. Referring to these processes, which began during the 1980s and 1990s, associated with Brazil's economic restructuring and adjustment period along with the rising internationalization of its economy, Magalhães et al. (2014, p. 174) note that:

> Within this context, at the domestic level and within the last three decades, massive differences continue among migration processes in different parts of Brazil, between states and also within states. However, the importance of shorter-distance migratory flows is on the rise, together with intra-regional and intra-state movements, with more migratory stages and re-emigration including return migration and commutes.

In Brazil, the number of people travelling to another municipality to work and/or study more than doubled during the past decade, involving 15.4 million people in 2010.

Moura, Delgado and Costa (2013) underscore the spatial complexity of these movements, as almost all municipalities record inflows and outflows. Through a migration efficacy indicator, the authors developed a classification system that highlights the leading role played by municipalities in population exchanges:

9. Moura, Branco and Firkowski (2005) draw attention to the fact that two-way trips are called migration or mobility in the literature, supporting the latter as it is a type of travel undertaken with a certain regularity, generally every day, without involving any change of domicile to another municipality, also accepted by Carvalho and Rigotti (1998), who exclude from migratory movements trips within the same region that do not imply setting up permanent residence at some other location.

outbound, two-way and inbound.[10] Almost 60% of registered departures originated in outbound municipalities, but even municipalities identified as inbound also post posted significant outbound traffic, reaching almost 20% of the total. On the other hand, outbound municipalities also post inbound flows at 20% of the total inflows recorded in Brazil. There is also a significant group of municipalities with evenly-balanced inflows and outflows of people, giving rise to their two-way classification.

Concerns over the commuting phenomenon fall within international discussions of city characteristics at the start of the century, with several authors attempting to qualify the social and spatial changes, materialized through urban forms that are in increasingly wider-spread in territorial terms.[11] Moura, Branco and Firkowski (2005) affirmed that this logic may be observed in Brazilian urban agglomerations, while drawing attention to the fact that peripheralization in Brazil (and other developing countries) is strongly associated with the segregation of poverty and ramshackle urban infrastructure.

As commuting is a type of travel that differs from those associated with migratory processes, Cunha et al. (2013) highlight an important hypothesis, whereby commuting in major urban complexes is related to rising intra-metropolitan migration processes, as moving to outlying municipalities in search of housing is triggering new commuter flows, thus proposing a joint study of these two phenomena. The same line is followed in the study by Brito and Ramalho (2014) of the effects of intermunicipal migrant status on the probability of commuting to and from work, conducted in the Recife MR. For these authors, "the empirical findings lead to the inference that workers with a recent history of migration are more likely to commute in the Recife MR. After considering the influence of a set of social and economic factors, as well as others related to place of domicile and location in addition to controlling the interdependence between commuting and migration, the average treatment effect (ATE) suggests that migrant status results in a 13.4 percentage point increase in the odds of a typical worker commuting" (Brito and Ramalho, 2014, p. 15).

10. Municipalities are classified related to the predominant direction of travel *i)* an *outbound* municipality, where trip origins predominate. Given that there are likely few jobs in these places, many of these are "bedroom communities;" *ii) inbound* municipalities, where trip destinations predominate because of a concentration of jobs or educational facilities; or *iii) two-way* municipalities, where there are similar numbers of trips trip origins and destinations. (Moura, Delgado and Costa, 2013).

11. Moura Branco and Firkowski (2005, p. 122) mention some concepts that have been attempting to address these changes: city-regions (Scott et al., 2001), metapolis (Ascher, 1995) and exopolis (Soja, 2002) are a few examples. Cunha et al. (2013) attempt to characterize this phenomenon in the São Paulo macrometropolis on a spatial scale that encompasses several metropolitan areas within this city.

3 SIZING POPULATION MOBILITY IN METROPOLITAN REGIONS: 2000-2010

In general, the employed population growth rates in the regions under analysis are quite high between 2000 and 2010, although in most metropolitan regions, this was not due to increased migration (table 1). In addition to passive growth, the main influences are some demographic factors and other aspects related to the labor market: relative growth of the economically active population (PIA);[12] higher activity rates due to higher job market entry levels, particularly among women; and even higher employment rates due to the sharp drop in joblessness during the decade.

TABLE 1
Employed population, proportion of immigrants and annual growth rate by metropolitan regions (2000-2010)

Metropolitan region	Employed population						
	Total		Proportion of immigrants[1] (%)		Growth rate (%)		
	2000	2010	2000	2010	Total	Migrant	Non-migrant
Manaus	541,361	862,220	19.1	13.9	4.76	1.48	5.35
Belém	692,333	950,843	22.5	14.5	3.22	-1.22	4.18
Fortaleza	1,084,365	1,585,827	18.7	12.2	3.87	-0.49	4.63
Recife	1,104,499	1,484,673	18.2	13.2	3.00	-0.27	3.55
Salvador	1,157,445	1,622,506	16.0	12.6	3.44	1.01	3.80
Belo Horizonte	1,768,767	2,433,251	23.7	15.8	3.24	-0.85	4.19
Rio de Janeiro	4,203,964	5,328,900	13.6	9.7	2.40	-0.97	2.80
São Paulo	7,204,014	9,479,401	20.0	13.5	2.78	-1.22	3.52
Curitiba	1,199,499	1,681,455	27.8	18.0	3.44	-0.99	4.70
Porto Alegre	1,606,359	2,030,124	20.7	16.1	2.37	-0.20	2.91
Goiânia	778,269	1,146,499	32.5	23.1	3.95	0.46	5.22
Brasília[2]	1,176,526	1,808,851	31.1	22.2	4.40	0.92	5.38
Total	**22,517,401**	**30,414,550**	**20.3**	**14.2**	**3.05**	**-0.54**	**3.73**

Source: IBGE – Demographic Census.
Notes: [1] Immigrants mean the entire population living in the municipality of residence for less than ten years.
[2] The regional unit of Brasília was institutionalized as an Integrated Region of Development (Ride).

The proportion of immigrants in the total number of employed people dropped sharply during the past decade in metropolitan regions as a whole, down from 20.3% in 2000 to 14.2% sign in 2010.[13] However, this drop in immigrant participation is explained only partially by the reduction in migrant flows.

12. PIA is from the Portuguese *População em Idade Ativa*.
13. In 2010, the participation rate for last stage immigrants in inter-municipal movements reached 15.9% of the total employed population in Brazil.

In fact, the number of employed immigrants dropped slightly (-0.54% per year.), with the actual numbers varying from 4.6 million in 2000 to 4.3 million by the end of the decade. But this shrinking share mainly reflects the dynamics of the job market, mentioned above, which absorbed heavy inflows and expanded by close to an additional eight million people in the twelve metropolitan regions, with this fact related to the increase noted among non-migrants, which is a population group presenting an annual growth rate of 3.73%.

There are some regional differences in the weight of immigrants in the employed population that remained constant in both Demographic Censuses that in addition to reflecting the main migrant routes in Brazil highlighted in the literature, were also related to different phases in the metropolitanization of each metropolitan region,[14] as well as the inclusion of these regions in Brazil's recent economic expansion process. The metropolitan regions with the highest share of immigrants in the composition of the employed population for 2000 and 2010 are Goiânia (32.5% and 23.1%), Brasília (31.1% and 22.2%) and Curitiba (27.8% and 17.9%), with the lowest shares noted in Rio de Janeiro and Salvador.

Despite negative growth rates for employed immigrants, they nevertheless hold a relevant share in the total number of employed persons. In 2010, this proportion varied from 9.7% in the Rio de Janeiro MR to 23.1% in the Goiânia MR, with growth in this segment of the population found only in Brasília region (0.92% per year during the decade), as well as the Goiânia MR (0.46% per year) and a few other metropolitan regions with lower proportions of immigrants in the total number of employed people, such as Salvador (variation of 1.01% per year) and Manaus (1.48% per year).

In the metropolitan regions as a whole, the number of employed people commuting to work in municipalities other than their place of residence in 2010 reached almost 5.5 million people (table 2). The growth rates of this segment of the population in all metropolitan regions are higher than those observed for the total employed population (see table 1), confirming that the rising number of commutes as a way of accessing the job market noted during the past decade was widespread in these regions, with the number of commuters more than doubling in four of them – Manaus, Salvador, Fortaleza and Brasília.

14. For example, the consolidation processes of the metropolitanization of São Paulo and Rio de Janeiro are older, including the intra-regional redistribution of the population among their various municipalities. In these cases, although still remaining Brazil's main migration magnets, the proportion of the immigrant population tends to be lower in the population as a whole, due to the high populations in these regions.

TABLE 2
Number of job-holders commuting to work, proportion of immigrants and annual growth rates by metropolitan region (2000-2010)

Metropolitan region	Job-holders who commute						
	Total		Proportion of immigrants (%)		Growth rate (%)		
	2000	2010	2000	2010	Total	Immigrant	Non-migrant
Manaus	3,277	13,010	35.5	27.6	14.78	11.92	16.06
Belém	81,051	136,051	45.5	26.5	5.32	-0.24	8.38
Fortaleza	75,941	153,060	38.0	21.8	7.26	1.49	9.66
Recife	247,197	402,367	29.2	19.9	4.99	1.03	6.20
Salvador	66,051	154,469	31.1	26.2	8.87	7.02	9.50
Belo Horizonte	348,441	552,333	40.3	25.3	4.71	-0.04	6.96
Rio de Janeiro	741,832	1,038,143	23.1	15.5	3.42	-0.62	4.31
São Paulo	1,044,859	1,693,966	35.0	22.9	4.95	0.57	6.64
Curitiba	186,509	337,746	46.0	26.3	6.12	0.35	9.35
Porto Alegre	320,776	474,066	29.8	22.4	3.98	1.04	4.97
Goiânia	109,007	204,665	55.7	34.2	6.50	1.45	10.61
Brasília[1]	122,008	307,617	64.1	31.2	9.69	2.08	16.11
Total	**3,346,948**	**5,467,493**	**34.6**	**22.7**	**5.03**	**0.71**	**6.65**

Source: IBGE - Demographic Census.
Note: [1] The regional unit of Brasília was institutionalized as an Integrated Region of Development (Ride). Once again, there was a sharp increase among non-migrants, which accounted for more than 90% of the variation posted during the decade in the metropolitan regions under analysis. However, there are some noteworthy aspects related to immigrant performances. The first is that the growth rates for commuter immigrants were positive in most regions, particularly Manaus, Salvador and, to a lesser extent, Brasília. The second point is related to the proportion of immigrants in the total number of commuters. Despite a sharp drop during the decade, the share held by immigrants in this type of travel is far higher than their proportions in the total number of job-holders, suggesting that this segment of the population may well be more likely to commute to work.

As noted for the total number of employed persons, there are regional differences in terms of the proportion of immigrants in the total number of commuters. But these differences, which were more marked in 2000, shrank significantly during the decade. The shares held by immigrants are higher in the two metropolitan regions with larger proportions of employed immigrants, namely: in the Brasília (64.1% in 2000, and 31.2% in 2010) and in the Goiânia metropolitan region (55.7% in 2000, and 34.2% in 2010). Additionally, Curitiba was also noteworthy with a high share in 2000 (46.0%) and Manaus in 2010 (27.6%) (see table 2).

For the former, the reason for commuting is triggered by the dynamics of their urban-regional arrangements, meaning two units linked into a single spatial arrangement (Moura, 2009). For Curitiba, this is the outcome of marked periferalization of its downtown area and the concentration of job-generating activities in this area. In Manaus, this is prompted by a dynamic job market that attracts a workforce that is starting to settle in outlying areas beyond its municipal borders, appearing largely during the past decade; this is the case of a new urban agglomeration with a small peripheral area that is still in formation.

By transforming the relationships among commuter groups and employed people as into rates, showing the share held by the former in each segment of the population, it becomes apparent that commuting has increased in all the metropolitan regions, with these rates being higher among immigrants for both periods. However, it was among the non-migrants that the rates rose most steeply, which was noted in most of the metropolitan regions (table 3). In other words, mobility reached a significant level also in the non-migrant population.

TABLE 3
Travel to work by migration[1] status and metropolitan region (2000-2010)

Metropolitan region	Commuting rate for the employed population (%)					
	2000			2010		
	Total	Immigrant	Non-migrant	Total	Immigrant	Non-migrant
Manaus	0.6	1.1	0.5	1.5	3.0	1.3
Belém	11.7	23.7	8.2	14.3	26.2	12.2
Fortaleza	7.0	14.2	5.3	9.7	17.3	8.5
Recife	22.4	36.0	19.4	27.1	41.0	24.9
Salvador	5.7	11.1	4.7	9.5	19.7	8.0
Belo Horizonte	19.7	33.4	15.4	22.7	36.2	20.1
Rio de Janeiro	17.6	30.0	15.7	19.5	31.0	18.2
São Paulo	14.5	25.4	11.8	17.9	30.4	15.9
Curitiba	15.5	25.7	11.6	20.1	29.4	18.0
Porto Alegre	20.0	28.7	17.7	23.4	32.5	21.6
Goiânia	14.0	24.0	9.2	17.9	26.4	15.2
Brasília[2]	10.4	21.4	5.4	17.0	24.0	14.3
Total	**14.9**	**25.3**	**12.2**	**18.0**	**28.7**	**16.1**

Source: IBGE - Demographic Census.
Notes: [1] Migrants are considered to be anyone with less than ten years residence in their municipalities of the domicile.
[2] The regional unit of Brasília was institutionalized as an Integrated Region of Development (Ride).

Metropolitan regions with the highest commuting rates among immigrants are Recife (36% in 2000, rising to 41% in 2010) and Belo Horizonte (33.4% rising to 36.2%). The lowest rate was found in Manaus, although this too is increasing (up from 1.1% to 3.0%). Another noteworthy aspect was the fact that commuter rates among immigrants in Goiânia and Brasília were lower than those noted for the metropolitan regions as a whole (25.3% in 2000, and 28.7% in 2010), in contrast to the level found for employed immigrants who commute, shown in table 2. In other words, although immigrants in these two urban agglomerations form a significant proportion of people who commute to other municipalities, no more than a quarter of the immigrants in these regions are involved with this type of mobility.

In general, this set of indicators prompts doubts about the hypothesis associating higher commuting rates with migrant populations, as migration does not seem to explain the increase in commuting over the period, despite higher migrant commuting rates. Commuting rates have also been increasing among the employed, becoming an important strategy for non-migrants as well.

4 MIGRANT ORIGINS, COMMUTER FLOW TYPES AND LINKS TO MUNICIPALITIES OF ORIGIN

In this item, the analysis is limited to data taken from the 2010 Demographic Census, in an attempt to identify patterns related to immigrant origins, whether in the same metropolitan region or not, as well as commuter flow types and the links established in the course of their work by intra-regional immigrants with their municipalities of origin.

In 2010, most job-holders were non-migrant, reaching 85.1% of the total number of people employed in the metropolitan regions. Among employed immigrants, 5% were intra-regional in origin and 8.6% were non-regional (table 4). This predominance of non-regional origins among immigrants is found in almost all metropolitan regions, but with more even distribution in the Rio de Janeiro, Belo Horizonte, Porto Alegre and Recife metropolitan regions, with Recife being the only place where intra-regional immigrants outnumbered those from outside the metropolitan region in the employed population.

TABLE 4
Percentage distribution of the employed population that commutes, and commuting rates by migration status and metropolitan region (2010)

Metropolitan region	Employed population [1] (%)			Commuting job-holders [1] (%)			Commuting rate			Total
	Non-migrant	Immigrant		Non-migrant	Immigrant		Non-migrant	Immigrant		
		Intra-regional	Non-regional		Intra-regional	Non-regional		Intra-regional	Non-regional	
Manaus	85.5	2.3	9.9	72.0	8.0	19.2	1.3	5.2	2.9	1.5
Belém	85.0	4.5	9.6	72.6	14.3	12.0	12.2	45.6	17.8	14.3
Fortaleza	87.4	3.5	8.4	77.4	13.0	8.7	8.5	35.8	10.0	9.7
Recife	86.3	6.5	6.4	79.4	12.9	6.7	24.9	54.1	28.5	27.1
Salvador	87.0	3.3	8.9	73.1	13.6	12.0	8.0	39.2	12.9	9.5
Belo Horizonte	83.6	6.8	8.6	73.9	16.3	8.7	20.1	54.4	23.1	22.7
Rio de Janeiro	89.8	4.2	5.1	83.8	11.0	4.2	18.2	50.9	16.3	19.5
São Paulo	85.9	4.9	7.8	76.2	14.9	7.7	15.9	54.6	17.5	17.9
Curitiba	81.5	5.7	11.5	72.9	14.5	11.3	18.0	51.3	19.7	20.1
Porto Alegre	83.5	7.5	8.0	77.1	14.5	7.6	21.6	45.0	22.2	23.4
Goiânia	76.1	5.5	16.4	64.8	16.4	17.4	15.2	53.4	18.9	17.9
Brasília[2]	75.7	5.2	16.2	63.5	15.1	16.0	14.3	49.1	16.8	17.0
Total	**85.1**	**5.0**	**8.6**	**76.2**	**14.0**	**8.4**	**16.1**	**50.3**	**17.6**	**18.0**

Source: IBGE: Demographic Census.

Notes: [1] Some job-holders could not be classified by migration status, either because they were unknown during a critical phase, or due to absence of information on their municipalities of origin.

[2] The regional unit of Brasília was institutionalized as an Integrated Region of Development (Ride).

The opposite occurred with the origins of employed immigrants who commute. For the metropolitan regions as a whole, intra-regional trips accounted for 14.0% of the total amount of travel, compared to 8.4% originating outside the region; the ratio between these proportions is equivalent to stating that for each 100 commuting immigrants, sixty-three were from the metropolitan region itself. The heavier proportion of intra-regional commutes is noted in most metropolitan regions, except for Manaus, Goiânia and Brasília, with the last two presenting an almost even distribution.

The greater likelihood of intra-regional immigrants commuting to work is even more apparent in the commuting rate, showing that, other than Manaus, between 35% and 55% of intra-regional immigrants who work do so in municipalities other than those in which they live; for the twelve metropolitan regions as a whole, this rate reaches 50%. The rates for immigrants from outside the metropolitan regions were not significantly different from those observed for the non-migrant population.

This study has shown that commuting has become more important for accessing work in metropolitan regions. But what are the directions of these flows? In all the metropolitan regions, the main flows originate in outlying municipalities, travelling towards centers. The heavier the weight of these flows, the more they reflect the peripheralization of settlement processes, with economic activities concentrated in centers (table 5). Except for Salvador (29.3%) and Manaus (22.9%), these flows encompassed more than 50% of job-holders in all the other metropolitan regions. Particularly noteworthy was the Brasília (85.5%) and the Goiânia metropolitan region (78.1%) as, although constituting an urban-regional complex, both cities are nevertheless the most representative of a movement that may be considered a standard pattern for simple urban agglomerations.

TABLE 5
Percentage distribution of commutes by flow type (2010)[1]

Metropolitan region[2]	Commute flow type					
	Outskirts/ center[2]	Outskirts/ outskirts	Center/out-skirts	Other MR	Outside MR	Total
Manaus	22.9	3.0	19.1	1.3	53.6	100.0
Belém	66.6	9.1	8.9	1.3	14.0	100.0
Fortaleza	58.2	17.9	13.1	1.4	9.4	100.0
Recife	63.2	19.9	9.8	0.6	6.5	100.0
Salvador	29.3	23.5	30.9	4.1	12.3	100.0
Belo Horizonte	62.4	21.3	11.7	0.8	3.8	100.0
Rio de Janeiro	61.4	29.1	4.7	0.9	4.0	100.0
São Paulo	50.9	35.5	8.6	0.5	4.5	100.0

(Continues)

(Continued)

Metropolitan region[2]	Commute flow type					
	Outskirts/ center[2]	Outskirts/ outskirts	Center/out-skirts	Other MR	Outside MR	Total
Curitiba	66.0	13.2	15.4	1.1	4.4	100.0
Porto Alegre	52.0	36.8	6.2	0.5	4.5	100.0
Goiânia	78.1	2.8	8.1	3.2	7.8	100.0
Brasília[3]	85.5	4.2	4.3	2.1	3.9	100.0
Total	**58.5**	**26.3**	**9.1**	**1.0**	**5.3**	**100.0**

Source: IBGE: Demographic Census.

Notes: [1] This table is based only on commutes to "Other municipalities" when identified; for all metropolitan regions, the identification level tops 90%, except for Brasília (67.1%).

[2] "Center" refers to the municipality that is the center of the metropolitan region (also previously referred to as "central municipalities" in this text).

[3] The regional unit of Brasília was institutionalized as an Integrated Region of Development (Ride).

Also noteworthy are exchanges among municipalities on the outskirts of the same urban area (outskirts/outskirts movements), which account for 26.3% of commutes in the metropolitan regions as a whole. In three of them – Rio de Janeiro, São Paulo and Porto Alegre – this percentage is even higher, peaking at 36.8% in the latter city. This flow type indicates broader-ranging dynamics among outlying municipalities, reflecting greater decentralization of activities within the metropolitan area.

Another important flow type carries people from centers in metropolitan regions towards their outskirts. In five of them – Manaus, Fortaleza, Salvador, Belo Horizonte and Curitiba – this flow type accounts more than 10% of total commutes, peaking in Salvador (30.9%), possibly due here to the attractions of the Camaçari Petrochemical Complex.

For two flow types involving outlying municipalities (outskirts/outskirts and center/outskirts), a remark is required on their importance in the São Paulo MR. For the former flow type (outskirts/outskirts), São Paulo is one of the areas with the heaviest proportion in the total number of commutes, adding that this MR accounts for 42.5% of all trips of this type recorded in the twelve metropolitan regions addressed by this study. Commutes center/outskirts account for only 8.6% of commuter flows in the São Paulo MR, although constituting 30% of this type of mobility found in the metropolitan regions as a whole.[15]

Two other flow types – to another MR and to outside the MR – are presented in table 5. Although playing a less important role in the metropolitan regions as a whole, they are significant indicators of a trend towards new spatial arrangements that extend beyond the demarcated boundaries of the metropolitan areas, or even on the larger scales of urban networks.

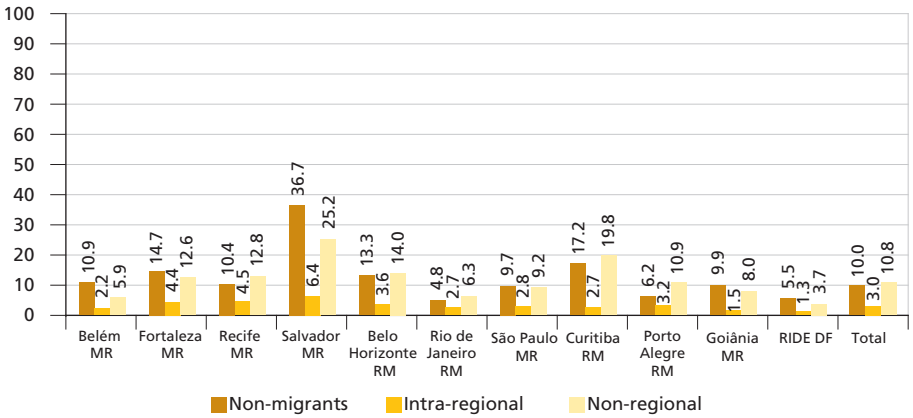
15. This figure (30%) is additional information and is not included in the tables in this paper.

With regard to flows to another MR, the Goiânia MR and Brasília are particularly noteworthy, as well as for flows outside the metropolitan region, which may be related to the configuration of the urban-regional complex that links these two urban areas in Center-West Brazil. Flows outside metropolitan regions are more important in the cities of North and Northeast Brazil, particularly Manaus,[16] Belém and Salvador, where this flow type accounts for more than 10% of all trips recorded in each of them. As mentioned, this may indicate urbanization extending beyond metropolitan boundaries that may be linked to incongruent aspects in the demarcation of the MR, as well as to the sphere of influence of this urbanization, particularly in the Salvador MR, where this may reflect the dynamics of the urban-regional complex formed with the Feira de Santana urban area.

When considering the migration status of the employed population involved in commuter flows, some specific characteristics may be highlighted. For all three categories – non-migrant, intra-regional immigrant and non-regional immigrant – the most important flow consists of trips from urban outskirts to center (graph 1), with this type of flow the most significant in all the metropolitan regions for intra-metropolitan immigrants. Except for the São Paulo and Salvador metropolitan regions, non-regional immigrants hold the lowest share of this flow type.

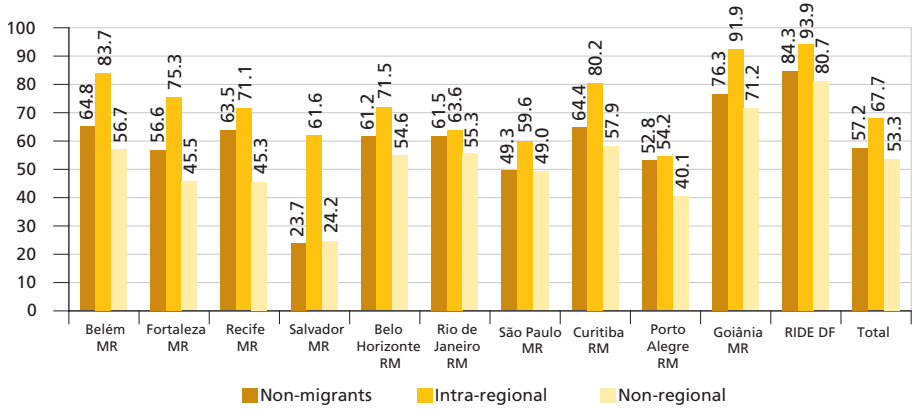
GRAPH 1
Proportion of flow types in total number of commutes in metropolitan regions by migration status (2010)

1A – Center/outskirts flow

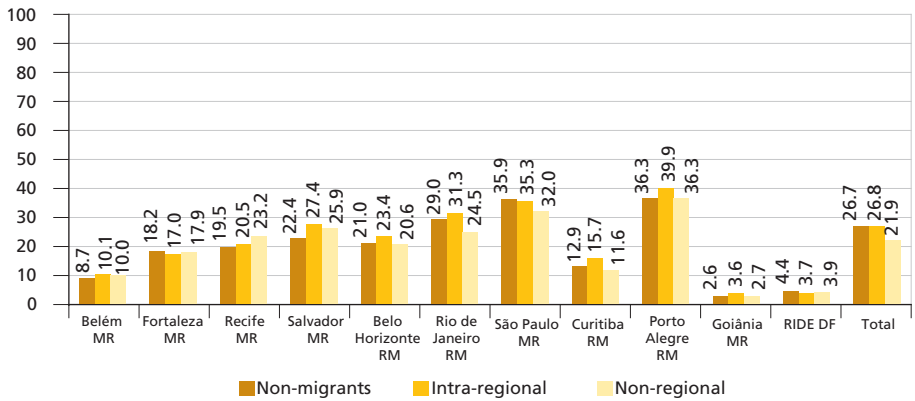


16. In a recent (2015) study by the Brazilian Institute for Geography and Statistics (IBGE), Manaus was included in the highest urbanization tier, although classified as an isolated municipality that does not constitute an urban agglomeration.

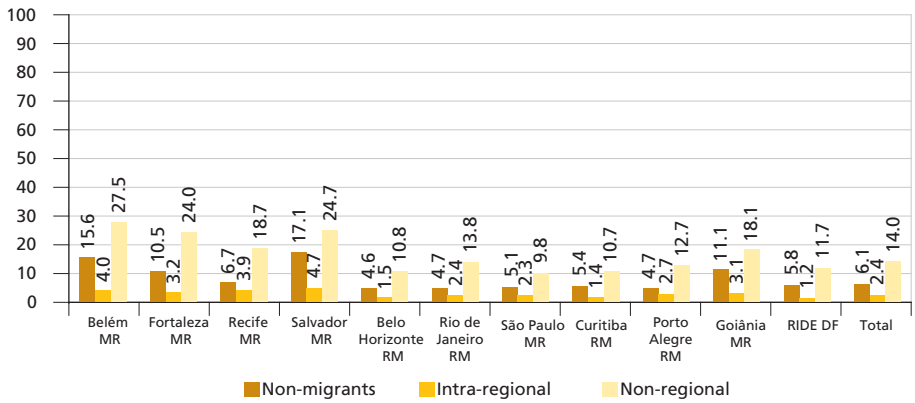
1B – Outskirts/center flow



1C – Outskirts/outskirts flow



1D – Outside MR flow



Obs.: The data for Manaus are not shown in the graph, as the estimates obtained through microdata taken from the Demographic Census are very low for flow type and migration status, subject to significant sampling errors. The same reason, the Other MR flows were clustered into the Outside the MR category.

For outskirts/outskirts flows, there is almost no difference among the three migration categories, regardless of the proportion of this type in each MR. For the other two flow types, intra-regional immigrants account for only minor shares, while non-regional immigrants predominated in flows outside the MR for all the cities studied, and was almost the same as the share held by non-migrants in center/outskirts flows. For the latter type of flow, Salvador stands out not only for the proportion (> 30%) of this flow type in total regional trips, but also for the predominance of non-migrants in this flow type.

Finally, attempts were made to discover whether or not the municipalities where immigrants work are the same as their previous municipalities of residence. Additionally, among those working in the same municipalities of origin, the type of commute flows were also examined.

Most intra-regional immigrants work in the same municipalities that they lived in prior to moving, reaching 62.4% of the total flows for this migrant status in the municipal regions as a whole (table 6). This proportion drops in better-consolidated metropolitan regions such as Rio de Janeiro, Porto Alegre, Recife and São Paulo, which were the only cities posting less than 60%. For less-developed metropolitan regions, the percentages are extremely high, peaking in Goiânia (86%) and Manaus (81.5%). As the Demographic Census contains information only on the municipality of origin, rather than the work status of people when they lived there, there is a hypothetical possibility – found in the literature on population mobility – that in these cases, people used to live and work in the same municipality, but had to migrate for unknown reasons,[17] although without losing previous links to their jobs, which seems to be more the case for migration between center/outskirts areas.

Among the total number of non-regional immigrants, 94.2% work in municipalities other than those of their prior residence, indicating that they have lost links with their places where they are originally from, at least in terms of jobs. It is very likely that these non-regional immigrants were working in another municipality within the same MR where they lived at the time of the Census. Manaus posts the lowest percentage (61.3%), which may suggest more recent migration seeking work in this metropolitan agglomeration. Among the total number of immigrants (intra-regional and non-regional), 41.6% work in their municipality of origin, and 58.4% in another municipality.

17. The Demographic Census did not explore the reasons for moving residences, but the most likely hypothesis is that these moves were prompted by issues related to access to land/housing, which depends on the operating conditions of urban property markets, with rising values in municipal areas triggering the quest for alternatives in outlying districts of metropolitan regions. To a lesser extent, there are also families that moved out of town in search of better places to live, in this case including many members of the middle and upper income segments of the population.

TABLE 6
Percentage distribution of commuting immigrants during the decade by migration status and links between previous municipalities and work (2010)

Metropolitan region	Migration status and links between previous municipalities and work								
	Intra-regional immigrant			Non-regional immigrant			Total		
	Works in previous municipality of residence	Works in municipality other than that previous residence	Total	Works in previous municipality of residence	Works in municipality other than that previous residence	Total	Works in previous municipality residence	Works in municipality other than that previous residence	Total
Manaus	81.5	18.5	100.0	38.7	61.3	100.0	53.4	46.6	100.0
Belém	79.0	21.0	100.0	13.9	86.1	100.0	49.8	50.2	100.0
Fortaleza	77.6	22.4	100.0	13.1	86.9	100.0	52.4	47.6	100.0
Recife	58.2	41.8	100.0	8.7	91.3	100.0	41.6	58.4	100.0
Salvador	68.3	31.7	100.0	11.9	88.1	100.0	42.5	57.5	100.0
Belo Horizonte	65.0	35.0	100.0	4.3	95.7	100.0	44.3	55.7	100.0
Rio de Janeiro	53.1	46.9	100.0	6.8	93.2	100.0	40.4	59.6	100.0
São Paulo	58.7	41.3	100.0	3.0	97.0	100.0	40.0	60.0	100.0
Curitiba	67.3	32.7	100.0	4.6	95.4	100.0	40.4	59.6	100.0
Porto Alegre	54.8	45.2	100.0	6.3	93.7	100.0	38.5	61.5	100.0
Goiânia	86.0	14.0	100.0	7.7	92.3	100.0	46.5	53.5	100.0
Brasília[1]	77.9	22.1	100.0	3.7	96.3	100.0	39.8	60.2	100.0
Total	**62.4**	**37.6**	**100.0**	**5.8**	**94.2**	**100.0**	**41.6**	**58.4**	**100.0**

Source: IBGE - Demographic Census.
Note: [1] The regional unit of Brasília was institutionalized as an Integrated Region of Development (Ride).

Migrants working in their municipality of origin travelled mainly from outskirts/center (75.7%), meaning that they moved out of the city center to live in an outlying municipality, while continuing to work downtown (table 7). In this case, the Brasília and the Goiânia metropolitan regions posted the highest percentages at 92.8% and 89.1% respectively. Outskirts/outskirts commutes account for only 16.6% of migrants that work in the same municipality that they previously resided in. However, atypical behavior appears in Manaus, where only 41.3% of immigrants worked in the same municipality as their former places of residence, commuting from the outskirts to the center, while 46.7% travel outside the MR.

TABLE 7
Percentage distribution of commuting immigrants during the decade by links between municipalities of origin and work and commuter flow types (2010)

Metropolitan region	Links between municipalities of origin and work and commuter flow types											
	Works in previous municipality of residence						Works in municipality other than that of previous municipality of residence					
	Outskirts/center[2]	Outskirts/outskirts	Center/outskirts	Other MR	Outside MR	Total	Outskirts/center	Outskirts/outskirts	Center/outskirts	Other MR	Outside MR	Total
Manaus	41.3	0.0	11.0	1.0	46.7	100.0	14.4	2.2	17.9	4.1	61.4	100.0
Belém	81.3	4.5	1.7	0.8	11.7	100.0	62.1	15.6	6.0	1.0	15.3	100.0
Fortaleza	79.8	7.4	3.0	1.8	7.9	100.0	45.6	28.6	12.8	1.7	11.3	100.0
Recife	76.0	13.1	3.8	1.7	5.4	100.0	52.7	27.4	9.8	1.1	9.0	100.0
Salvador	72.9	9.8	4.5	3.0	9.8	100.0	23.0	39.6	23.0	3.0	11.4	100.0

(Continues)

(Continued)

Metropolitan region	Links between municipalities of origin and work and commuter flow types											
	Works in previous municipality of residence						Works in municipality other than that of previous municipality of residence					
	Out-skirts/ center[2]	Out-skirts/ outskirts	Center/ outskirts	Other MR	Outside MR	Total	Outskirts/ center	Outskirts/ outskirts	Center/ outskirts	Other MR	Outside MR	Total
Belo Horizonte	81.2	12.8	2.7	0.7	2.7	100.0	53.3	30.3	10.7	1.1	4.6	100.0
Rio de Janeiro	64.8	27.5	3.1	1.3	3.3	100.0	59.0	30.8	4.1	1.0	5.1	100.0
São Paulo	72.5	22.4	2.6	0.5	2.0	100.0	44.7	42.5	6.6	0.6	5.7	100.0
Curitiba	85.0	8.0	2.1	1.0	3.8	100.0	60.8	18.0	15.4	1.2	4.6	100.0
Porto Alegre	60.0	32.2	2.4	0.8	4.7	100.0	42.9	42.8	8.0	0.6	5.7	100.0
Goiânia	89.1	1.3	1.3	1.6	6.7	100.0	74.8	4.8	7.8	3.6	9.0	100.0
Brasília[1]	92.8	1.4	1.1	1.3	3.4	100.0	83.8	6.1	3.5	2.8	3.8	100.0
Total	**75.7**	**16.6**	**2.6**	**1.0**	**4.1**	**100.0**	**52.7**	**31.5**	**8.3**	**1.2**	**6.4**	**100.0**

Source: IBGE: Demographic Census.
Notes: [1] The regional unit of Brasília was institutionalized as an Integrated Region of Development (Ride).
[2] "Center" refers to the municipality that is the center of the metropolitan region (also previously referred to as "central municipalities" in this text).

There were fewer immigrants working in municipalities other than where they live: 52.7% commute from the outskirts to the center and 31.5% travel among outlying municipalities. The Salvador MR stands out for migrants commuting between the city center and outlying municipalities, while Manaus stands out, with 61.4% of commute destinations outside its MR.

5 FINAL REMARKS

This study strives to identify possible links between immigration processes and the expansion of commuter mobility among workers in major metropolitan regions in Brazil. The changes that have reshaped migratory processes over the past few decades, according to the literature, include a certain slowdown in flows towards these urban areas, although they have not lost their status as major magnets for migrants.

The numbers of immigrants in the labor markets of these metropolitan regions fell slightly during the past decade, with their relative proportion in the workforce as a whole dropping more sharply. This is probably due to labor market dynamics that allowed not only the absorption of immigrants but also resident segments previously excluded from this market to an even greater extent, and is probably related to women workers. Although migratory flows have slowed, it cannot be forgotten that this process involved more than four million people during the decade, ushering them into the job market.

When assessing the participation of immigrants in the segment of the employed population that must travel to other municipalities in order to work – commuter trips – the findings were similar to those recorded for the entire labor

market. This study found an increase in the number of commuting immigrants and a sharp drop in the proportion of this category relative to commuting job-holders as a whole. More than 90% of the increase in the number of people commuting to work was due to the increase noted among non-migrants – people living for ten years or more in the municipalities where they were registered with the Census.

These findings lead to a relativization of the importance of migration in explaining the recent dynamics of metropolitan job markets, including the hypothesis relating the increase in commuter mobility to intra-metropolitan migration processes.

Initially, as mentioned, immigration processes, whether intra-metropolitan or not, still involve large numbers of job-seekers. To a greater or lesser extent, in all the metropolitan regions except for Recife, the number of non-regional immigrants in the job market exceeded their intra-regional counterparts, denoting the powerful appeal of these urban areas.

Individual migration track records appear to be associated with some identified commuter mobility patterns. Immigrants post commuting rates that are higher than those of non-migrants, although these figures may be influenced largely by the behavior of intra-metropolitan immigrants; as shown, half of this segment of the population that moved from homes in their cities works in municipalities other than those in which they live.

In terms of the predominance of commutes from outlying areas to central municipalities for all job-holders in almost all the metropolitan regions, the various types of migration seem to characterize the commuter flows to which workers are related. Intra-regional immigrants are involved mainly in commutes from outlying areas to metropolitan centers, with almost two thirds of them working in their previous municipalities of residence, experiencing the typical disassociation highlighted in the literature between places of work and places of residence.

With a commuting rate that is closer to that of non-migrants, non-regional immigrants share a greater participation in flows outside the metropolitan region, or commutes from central municipalities to outlying areas. Coming from parts of Brazil other than the regions in which they currently live, these immigrants seem to have lost work links with their places of origin, as only 5% of them stated that they worked in their municipalities of origin.

The perceived dynamics suggest that the physical expansion of metropolitan agglomerations through ongoing processes that increase and decrease land values in certain parts of the city trigger intra-regional migratory flows, maintaining the dissociation between home and work, which in some cases results in commutes, with longer distances to be covered in others. These movements are prompted by

housing costs as well as the quest for better living conditions. In addition to these dynamics, according to the analyzed data, new non-metropolitan immigrants settle directly in outlying municipalities without first going through the initial stage of living in central municipalities, as noted at the start of the peripheralization process of Brazil's urban areas.

At the same time as strong links are found between immigrants and commutes, significant growth is also noted for non-migrants in these movements. Considering shifts in migratory movements, the commuting rates for these two categories may well draw closer together over the medium term.

REFERENCES

BAENINGER, R. Rotatividade migratória: um novo olhar para as migrações internas no Brasil. **Revista Interdisciplinar de Mobilidade Humana**, Brasília, ano XX, n. 39, p. 77-100, jul./dez., 2012.

BAENINGER, R.A., PERES, R. G. Metrópoles brasileiras no século 21: Evidências do censo demográfico de 2010. **Informe Gepec,** Toledo, v. 15, número especial, p. 634-648, 2011.

BRITO, D.; RAMALHO, H. **Mobilidade pendular e histórico de migração**: evidências para a região metropolitana do Recife. *In*: III ENCONTRO PERNAMBUCANO DE ECONOMIA. Recife, nov. 2013. Available at: <http://goo.gl/t0G5cs>.

BRITO, F. O deslocamento da população brasileira para as metrópoles. **Estudos Avançados** v. 20, n. 57, p. 221-236, São Paulo: USP/IEA, 2006.

BRITO, F.; RIGOTTI, J. I.; CAMPOS, J. **A mobilidade interestadual da população no Brasil no início do século XXI**: mudança no padrão migratório? Belo Horizonte: UFMG: CEDEPLAR, 2012. 26 p. (Texto para discussão n. 465).

CARVALHO, J.; RIGOTTI, J. I. Análise das metodologias de mensuração das migrações. *In*: ENCONTRO NACIONAL SOBRE MIGRAÇÃO. **Anais...** Curitiba: IPARDES-FUNAP, p.211-227, 1998.

CUNHA, J. et al. A mobilidade pendular na macrometrópole paulista: diferenciação e complementaridade socioespacial. **Caderno Metrópoles**, São Paulo, v. 15, n. 30, p. 433-459, jul./dez. 2013.

CUNHA, J. Retratos da mobilidade espacial no Brasil: os censos demográficos como fonte de dados. **Revista Interdisciplinar da Mobilidade Humana,** Brasília, ano XX, n. 39, p. 29-50, jul./dez. 2012.

IBGE – INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA. **Regiões de influência das cidades 2007**. Rio de Janeiro, 2008.

_____. **Arranjos populacionais e concentração urbana do Brasil**. Rio de Janeiro, 2015.

MAGALHÃES, M. V. et al. Migração de data-fixa nas mesorregiões geográficas do Paraná: 1995-2000 e 2005-2010. *In*: MAGALHÃES, M. V.; LOU, I. A. C. (Orgs.). **Migrações internas nos decênios 1990 e 2000 em unidades da Federação selecionadas**: mudanças e continuidades. Série Estudos e Pesquisas, 98, Salvador: SEI, 2014, p. 173-197.

MOURA, R. Arranjos urbano-regionais no Brasil: uma análise com foco em Curitiba. 2009. Tese (Doutorado) – Universidade Federal do Paraná, Curitiba, 2009.

MOURA, R.; BRANCO, M. L. G. C.; FIRKOWSKI, O. L. C. DE F. Movimento pendular e perspectivas de pesquisa em aglomerados urbanos. **São Paulo em Perspectiva**: SEADE, v. 19, n. 4, p. 121-133, out./dez. 2005.

MOURA, R.; DELGADO. P.; COSTA, M. Movimento pendular e políticas públicas: algumas possibilidades inspiradas numa tipologia dos municípios brasileiros. *In*: BOUERI, R.; COSTA, M. C. (Eds.). **Brasil em desenvolvimento 2013**: estado, planejamento e políticas públicas. Brasília: Ipea, cap. 22, p. 665-696, 2013.

RIGOTTI, J. I. R. **Os dados censitários brasileiros sobre migrações internas**: críticas e sugestões para análise. *In*: LOS CENSOS DE 2010 Y LA MIGRACIÓN INTERNA, INTERNACIONAL Y OTRAS FORMAS DE MOVILIDAD TERRITORIAL. CELADE, CEA/CEPAL e Fondo de Población de las Naciones Unidas. Santiago de Chile, 2008.

RODRÍGUEZ VIGNOLI, J. Intensidad e impacto redistributivo territorial de la migración interna en América Latina: tendencia y desafíos. **Coyuntura demográfica**, n. 3, p. 85-89, 2013.

RODRÍGUEZ, J.; GONZÁLEZ, D.; MARTÍNEZ, J. Población, territorio y desarrollo sostenible. CEPAL: CELADE, 2012.