da Piedade Morais, Maria

Working Paper

The housing conditions in Brazilian urban areas during the 1990s

Discussion Paper, No. 146

Provided in Cooperation with:
Institute of Applied Economic Research (ipea), Brasília

Suggested Citation: da Piedade Morais, Maria (2015) : The housing conditions in Brazilian urban areas during the 1990s, Discussion Paper, No. 146, Institute for Applied Economic Research (ipea), Brasília

This Version is available at:
https://hdl.handle.net/10419/220235

146
DISCUSSION PAPER
Originally published by Ipea in April 2005 as number 1085 of the series Texto para Discussão.

THE HOUSING CONDITIONS IN BRAZILIAN URBAN AREAS DURING THE 1990s

Maria da Piedade Morais

ipea

146
DISCUSSION PAPER

Originally published by Ipea in April 2005 as number 1085 of the series Texto para Discussão.

Brasília, January 2015

THE HOUSING CONDITIONS IN BRAZILIAN URBAN AREAS DURING THE 1990s[1]

Maria da Piedade Morais[2]

1. O presente texto, em língua inglesa, não foi objeto de revisão editorial. O trabalho corresponde a uma versão traduzida e ligeiramente modificada de artigo publicado na Revista Estudos Econômicos da Construção, v. 6, n. 1 (Morais, 2004). Uma versão condensada do artigo, em português, pode ser encontrada em Morais (2002), publicado em "Políticas Sociais: acompanhamento e análise, n. 4, Brasília: Ipea, fev. 2002.

2. Técnica de Planejamento e Pesquisa do Ipea. E-mail: piedade@ipea.gov.br. A autora agradece a Radakian Lino pela programação SAS, a Luiz Alexandre R. da Paixão, Mariana Padrão, Paulo Augusto Rêgo, George Alex da Guia, Thales Carloni Gaspar e Rubem Oliveira de Paula pelo apoio à pesquisa e a Bret Thiele, Bruno de Oliveira Cruz, Emmanuel Porto, Gottfried Urben, Helmut Swarzer, Jorge Saba Arbache, Mário Theodoro e Marcelo Piancastelli pelos valiosos comentários.

DISCUSSION PAPER

A publication to disseminate the findings of research directly or indirectly conducted by the Institute for Applied Economic Research (Ipea). Due to their relevance, they provide information to specialists and encourage contributions.

Discussion paper / Institute for Applied Economic

Research.- Brasília : Rio de Janeiro : Ipea, 1990-

ISSN 1415-4765

1. Brazil. 2. Economic Aspects. 3. Social Aspects. I. Institute for Applied Economic Research.

CDD 330.908

JEL: R21; R31; R38.

SUMÁRIO

SINOPSE

O objetivo deste trabalho é caracterizar as condições de moradia nas áreas urbanas brasileiras durante a década de 1990, com base em indicadores habitacionais e de desenvolvimento urbano construídos a partir dos microdados da Pesquisa Nacional por Amostra de Domicílios (Pnad) do Instituto Brasileiro de Geografia e Estatística (IBGE) para o período 1992-1999. Este texto pretende ser útil como um primeiro esforço de sistematização da informação existente no que diz respeito à habitação no Brasil, como ponto de partida para discutir as tendências e os principais problemas do setor habitacional, com vistas a fornecer subsídios para a formulação de políticas e programas nas áreas de habitação e de desenvolvimento urbano. A seção 2 discute as principais características do bem habitação que justificam a intervenção do governo nos mercados habitacionais. A seção 3 mostra as condições de habitação nas áreas urbanas brasileiras, destacando as condições de moradia dos pobres e de outros grupos vulneráveis. A seção 4 analisa os principais problemas habitacionais brasileiros, tais como formação de favelas, informalidade da habitação, falta de segurança na posse e déficits de habitação e de serviços urbanos, entre outros. Finalmente, a seção 5 apresenta as principais conclusões e sugestões para uma futura agenda de pesquisa em Habitação no Brasil, mostrando a necessidade de uma melhor focalização e integração entre as políticas habitacionais, macroeconômicas e outras políticas setoriais e sociais do governo no nível federal, no estadual e no municipal.

ABSTRACT

The objective of this article is to characterize the housing conditions in Brazilian urban areas during the 1990s, based upon housing and urban indicators derived from the 1992-1999 IBGE National Household Surveys (PNAD) microdata. The paper intends to be useful as a first attempt to systematize and analyze the available information on housing in Brazil, as a cornerstone to discuss the major trends and problems of the Brazilian housing sector, in order to subsidize the formulation of public policies and programs of housing and urban development. Section 2 discusses the main characteristics of housing that justify governmental intervention in housing markets. Section 3 depicts the housing conditions in Brazilian urban areas, emphasizing the housing situation of the poor and other vulnerable groups. Section 4 analyzes the main housing problems in Brazil, such as slums formation, tenure insecurity and housing and urban infrastructure deficits. Finally, section 5 presents the conclusions and suggestions for a future research agenda on housing in Brazil, urging for better targeting and integration between the housing policy and the macroeconomic and other sectorial and social policies of the government, at the federal, state and local levels.

1 INTRODUCTION

Article 25, paragraph 1 of the Universal Declaration of Human Rights, recognizes the right to adequate housing[1] as essential for a decent standard of living.

> Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services (…).

The Vancouver Declaration, approved by the First United Nations Conference on Human Settlements – HABITAT I, held in 1976 in Vancouver, Canadá stated that:

> Adequate shelter and services are a basic human right which places an obligation on Governments to ensure their attainment by all people, beginning with direct assistance to the least advantaged through guided programmes of self-help and community action. Governments should endeavour to remove all impediments hindering attainments of these goals. Of special importance is the elimination of social and racial segregation, *inter alia*, through the creation of better balanced communities, which blend different social groups, occupation, housing and amenities (paragraph 8, section 3).

The Istanbul Declaration on Human Settlements, approved by the United Nations Second Conference on Human Settlements – HABITAT II, held in Istambul, Turkey in 1996, reaffirms this right when it stresses that:

> We reaffirm our commitment to the full and progressive realization of the right to adequate housing as provided for in international instruments. To that end, we shall seek the active participation of our public, private and non-governmental partners at all levels to ensure legal security of tenure, protection from discrimination and equal access to affordable adequate housing for all persons and their families (paragraph 8).

Housing rights are entrenched in a number of other international human rights instruments and Development Agendas such as the International Covenant on Economic, Social and Cultural Rights, the Convention on the Elimination of All Forms of Racial Discrimination, the Convention on the Elimination of All Forms of Discrimination Against Women, the Habitat Agenda and the Declaration of Cities and Other Settlements in the New Millenium, among others.[2]

The right to adequate housing is also included in the Brazilian Federal Constitution among the basic social rights of the population.[3] The Constitution also stipulates provisions for the implementation of housing and sanitation programs by federal, state and local governments.[4] The Statute of the City ("*Estatuto da Cidade*")

1. See THIELE (2001) for further discussion on housing rights.
2. For a compilation on Legal Instruments on Housing Rights, see COHRE (2000) and COHRE's 2nd edition of "*Sources 4: Legal Resources for Housing Rights*" available for download at the website http://www cohre.org/ hrframe.htm.
3. Emenda Constitucional (Constitutional Amendment) N. 26 (2/14/2000), that modifies article 6th of The Brazilian Federal Constitution: "São direitos sociais a educação, a saúde, o trabalho, a moradia, o lazer, a segurança, a previdência social, a proteção à maternidade e à infância, a assistência aos desempregados".
4. Article 23, paragraph IX: "Art. 23. É de competência da União, dos Estados, do Distrito Federal e dos Municípios: IX – promover programas de construção de moradias e a melhoria das condições habitacionais e de saneamento básico".

also includes the right to adequate housing in article 2nd, paragraph I, as part of the broader concept of the right to the City.[5]

Despite the general recognition of the need for housing and urban services provision, as a means to achieve social inclusion and to promote poverty alleviation in the country, the housing conditions of the Brazilian population are still rather precarious. There is the persistence of unsatisfied housing needs, mainly among poor people living in large urban centers. Furthermore, data on the housing sector, are insufficient, not easily available and dispersed among various institutions.

This article seeks to characterize the housing conditions in Brazilian urban areas during the 1990s, based upon housing and urban indicators derived from the 1992-1999 National Household Surveys (PNAD) microdata produced by the Brazilian Census Bureau (IBGE). The paper intends to be useful as a first attempt to systematize and analyze the available information on housing in Brazil, as a cornerstone to discuss the main trends and problems of the Brazilian housing sector, in order to subsidize the formulation of public policies and programs in housing and urban development.

The paper is divided in 5 sections. Section 2 discusses the main characteristics of housing that justify the governmental intervention in housing markets. Section 3 shows the housing conditions in Brazilian urban areas, with a special emphasis on the housing conditions of the poor and other vulnerable groups. Section 4 analyzes the main housing problems in Brazil, like slums formation, tenure insecurity and housing and urban infrastructure deficits. Finally, section 5 presents the conclusions and suggestions for a future research agenda in Housing in Brazil, urging for a better targeting and integration between housing policies and the macroeconomic and other sectorial and social policies at the three levels of government.

2 HOUSING AND ECONOMIC THEORY[6]

Among the numerous peculiar housing characteristics, we can highlight the following: 1) basic need – Everybody needs a shelter that protects against environmental factors such as cold, wind, etc., as well as provides privacy and comfort; 2) capital asset – Usually, an owned dwelling corresponds to the main asset holding in household´s portfolio; 3) high cost – Housing prices correspond to several times the household annual income and to an important part of the consumption spending of the families;[7] 4) durability – The great durability of housing means that a great part of housing in the present is supplied by dwellings built in the past, with only a small portion of housing supplied by new units; 5) heterogeneity – Housing is an heterogeneous commodity, in a sense that dwelling units differ in structural, lot and neighborhood characteristics, quality of the construction, accessibility and

5. "A política urbana tem por objetivo ordenar o pleno desenvolvimento das funções sociais da propriedade urbana mediante as seguintes diretrizes gerais: I – garantia do direito a cidades sustentáveis, entendido como o direito à terra urbana, à moradia, ao saneamento ambiental, à infra-estrutura urbana, ao transporte e aos serviços públicos, ao trabalho e ao lazer, para as presentes e futuras gerações" (Lei n. 10257, July 10, 2001, art. 2nd).

6. This section is based mainly in ARNOTT (1987), ROTHENBERG *et al.* (1991), THE WORLD BANK (1993), and SANTOS and CRUZ (2000).

7. LUCENA (1986) has estimated that the price of house in Brazil is 4 times higher than the annual household income, on average. In the US and Mexico the housing services represent around 25% of the household budget (THE WORLD BANK, 2002).

provision of public services and private goods, among others; 6) spatial immobility – The spatial immobility of housing means that location is an intrinsic attribute of a dwelling unit, and can be one of the main determinants of housing quality and household welfare, respective to the accessibility to private and public goods, jobs and leisure;[8] 7) small market compared to total housing stock – The properties available at the market for rent or sell in a given period of time represent only a small portion of the total housing stock; 8) asymmetric information – The buyer has less information about the property than its owner and the landlord's has very few information about the tenant's characteristics, especially their payment capacity; 9) high transaction costs – The high heterogeneity, the spatial immobility of housing and the complex legislation increase search, transaction and capital costs, demanding time, effort and money and involving frequently liquidity and income constraints; 10) non-convexities in production – The supply of housing can take distint forms that maintain, upgrade, downgrade the housing quality and convert its use: unchanged existing dwellings, modified existing dwellings, newly constructed units and conversion between residential and non-residential uses. The individual suppliers can be owner-occupiers, landlords or builders; and 11) segmented market – The housing markets for low-income and high-income population possess different features, in a sense that the housing market is not a perfect market, but can be thought as a set of interrelated submarkets,[9] among others.

The fact that everyone needs a shelter makes each family a potential consumer in the housing market, irrespectively of income level. The high price of housing renders its commercialization dependent on the existence of long-term financing schemes. The high durability makes past housing policies exert a strong influence on the current state of the housing market. The high costs of searching, moving, transaction, taxation and registration result in a low mobility of the families, in such a way that they don't react immediately to new housing policies. The construction sector accounts for a significant part of the country's Gross Fixed Capital Formation (GFCF) and Domestic Product (GDP)[10] and for the employment generation of the Brazilian economy.

Housing is a merit good,[11] that possesses high positive externalities in terms of social welfare. The provision of housing to the low-income population represents a fundamental aspect of the poverty alleviation public policies[12] in the country, ensuring access to minimum social services like housing and urban infrastructure services for the population living in a state of social exclusion.

8. Furthermore, owing a house reduces the household's mobility and difficults adjustments in the labour market (HENLEY, 1998).

9. LIM (1987) presents some basic criteria by which to classify housing submarkets. The poor usually have to make a multistep transition through different submarkets (from street sleeper to renter and squatter owner in informal markets, then renter and finally owner in regular market), in order to improve their housing conditions. COCCATO (1996) analyzes rental and shared submarkets in informal settlements.

10. 75.1% and 14.2% in 1999, respectively.

11. A merit good is a good that, despite being able of production by the private sector, generates positive externalities to the rest of society. Housing, sanitation, education and health are among this category of goods. See RESENDE's definition, cited in SANTOS and CRUZ (2000).

12. NERI *et al.* (2000) showed that the probability of being poor is reduced with increased access to some kind of physical capital, like housing and urban infrastructure, demonstrating the importance of the sectors of housing and urban services to fight urban poverty in Brazil.

The above characteristics, together with the fact that the high housing costs surpasses the capacity of payment and financing of the poor population[13] and due to the absence of an appropriate long-term financing market, justify the Government's interference in the housing markets, aimed to increase allocative efficiency and social justice. The Government's intervention in the housing markets can occur directly – through the provision of housing for the low-income population or/and by supplying public funding for the housing sector – or indirectly, through legislation over the financial markets, land use regulations and building requirements.

Housing demand is determined by demographic factors (age, urbanization rate, new households formation rate, etc.), by macroeconomic conditions that affect the household's income levels (interest rates, employment levels, etc.), by the availability of housing credit and by the government's fiscal policies. Housing supply is conditioned, among other factors, by the availability of land for residential use, construction materials and infrastructure. Both housing supply and housing demand are affected by the regulatory and institutional frameworks. Housing policies also affect the socioeconomic conditions of the households such as infant mortality rates, saving behavior, capital formation and the public sector financial needs.

3 THE SITUATION OF THE BRAZILIAN HOUSING STOCK

In 1999, the Brazilian housing stock presented the following composition: 82.8% of the dwelling units were occupied as permanent residence, 4.1% were designed for seasonal use and 12.6% constituted vacant units. The high proportion of vacant and seasonal units in the total housing stock (16.7%) suggests the existence of significant inefficiencies in the Brazilian housing market. Houses are the predominant type of construction,[14] corresponding to 88.0% of the total housing stock.

Between 1992 and 1999, there was an improvement in the housing conditions in Brazilian urban areas, evidenced by a decrease in the densities per household and per bedroom and by higher quality of the constructions, with an increase in the percentage of permanent structures (walls and roof), exclusive bathrooms and better access to urban infrastructure services such as water, sewerage, electricity and telephone connections. However, we can still observe the persistence of strong inequalities among genders, regions, races, socioeconomic groups and inner city spatial areas, with the housing conditions being better for the households occupying formal housing areas in the South and Southeast regions of the country. The poor and indigent households,[15] the slum[16] dwellers and the

13. According to The WORLD BANK (2002), a house of 35 square kilometers in the regular market costs around 20 thousand *reais*, on average. If this house was financed in the regular market , the monthly payment will be around 200 *reais*, what makes housing inaccessible to households with income below 4 minimum wages, what encompasses almost half of the total Brazilian population.

14. PNAD ranks the dwelling units as houses, apartment buildings and rooms.

15. The poverty and extreme poverty lines used in this study were ½ and ¼ minimum wages (m.w.), respectively.

16. We have used the dwelling units located in areas classified by IBGE as substandard sectors ("*setores especiais de aglomerados subnormais*") as a proxy to slums. IBGE classifies substandard residential areas as "a group of dwelling units (huts, houses, etc.), occupying or having occupied, until recently, lands belonging to other people (either public or private lands), generally disposed in a scattered and dense way and lacking essential public infrastructure services, also designated by IBGE as an informal settlements, "*favelas*", "*mocambos*", "*alagados*", etc. (IBGE, 2002). PNAD underestimates the number of slums comparing to other local field surveys because it doesn't capture information on very small slum areas (only slums above 50 households). Nevertheless, PNAD can be used to compare housing markets at the national level and although the number of slum dwellers is small as compared to other sources, it captures the same tendencies in informal housing within the country.

non-white headed-households[17] present smaller levels of access to basic services and larger densities per household.

TABLE 1

Housing conditions in Brazilian urban areas – 1992-1999

Indicators	1992	1993	1995	1996	1997	1998	1999
Density per household	3.95	3.90	3.82	3.80	3.76	3.70	3.66
Density per Bedroom	2.13	2.12	2.06	2.03	2.02	1.99	1.86
Permanent Roof (tile or concrete) (%)	97.61	97.66	98.02	97.67	97.91	98.11	98.34
Permanent Walls (masonry or processed wood) (%)	97.16	97.24	97.60	97.40	98.08	98.05	98.25
Connection to public water network (%)	83.29	84.08	85.43	87.82	87.45	88.55	89.19
Sewage network or septic tank (%)	68.24	70.15	70.92	74.25	73.52	74.99	75.68
Garbage collection (direct or indirect) (%)	81.70	84.99	86.70	87.44	90.67	92.36	93.74
Proper sanitation* services concerning water, sewage and garbage collection (%)	60.96	63.12	64.43	67.55	68.49	70.20	71.36
Exclusive bathroom (%)	90.20	91.45	92.57	93.37	93.71	94.55	95.17
Electricity (%)	97.48	97.99	98.58	98.90	99.04	99.11	99.18
Phone connection (%)	23.28	24.00	26.75	30.28	33.20	37.87	44.32
Rent to Income Ratio (%)**	12.74	10.96	21.82	23.51	27.69	25.95	24.62
Renters Households with rent to income ratio higher than 30.0 percent (%)	11.74	10.62	32.01	35.64	37.73	36.24	35.17
Households with overcrowding (more than 3 persons per bedroom) (%)	10.03	9.72	8.66	8.75	8.04	7.54	7.10
Total of Permanent Private Dwelling Units	**28754045**	**29686098**	**31475591**	**32227158**	**32980372**	**33993829**	**34870828**

Source: IPEA/DIRUR based upon the 1992-1999 PNAD/IBGE microdata.

*Proper sanitation = piped water from public network inside the house, sewage network or septic tank and direct or indirect garbage collection.

**Median rent to median income ratio of rented households, except missing, ignored and non-applicable values.

TABLE 2

Housing conditions in Brazil by area, gender, race, and household *per capita* income – 1999

Indicators	Urban						Metropolitan Areas
	Total	Women-headed households	Non-white-headed households	Substandard Sectors	Income *per capita* in minimum wages (m.w.)		
					1/2 mw	1/4 mw	
Density per household	3.66	3.09	3.96	3.92	4.58	4.72	3.59
Density per Bedroom	1.86	1.65	2.02	2.18	2.35	2.49	1.89
Permanent Roof (tile or concrete) (%)	98.34	98.40	97.70	97.20	96.10	95.40	99.40
Permanent Walls (masonry or processed wood) (%)	98.25	98.20	96.80	94.80	93.90	91.80	98.90
Connection to Public Water Network (%)	89.19	90.20	82.60	89.20	74.30	69.70	91.80
Sewage network or septic tank (%)	75.68	77.00	63.50	68.10	48.90	44.30	86.10
Garbage Collection (direct or indirect) (%)	93.74	94.50	88.90	95.10	82.20	78.90	96.10
Proper sanitation services concerning water, sewage and garbage collection (%)*	71.36	73.00	57.83	64.28	43.08	38.57	81.89
Exclusive bathroom (%)	95.17	94.50	91.60	92.20	85.30	80.60	96.90
Electricity (%)	99.18	99.30	98.40	99.60	97.10	95.30	99.80
Phone connection (%)	44.32	43.20	29.70	23.80	10.70	9.60	52.30
Rent to Income Ratio (%)**	24.62	32.56	27.31	22.94	32.26	36.76	31.25
Renters Households with rent to income ratio higher than 30.0 percent (%)	35.17	50.18	36.70	45.56	60.95	71.65	44.65
Households with overcrowding (more than 3 persons per bedroom) (%)	7.10	5.50	10.30	14.90	19.00	23.80	9.10
Total	**34870828**	**8872233**	**14037413**	**1398863**	**5747423**	**1921245**	**13812903**

Source: IPEA/DIRUR based upon the 1999 PNAD/IBGE microdata.

*Proper sanitation = piped water from public network inside the house, sewage network or septic tank and direct or indirect garbage collection.

**Median rent to median income ratio of rented households, except missing, ignored and non-applicable values.

17. For housing and sanitation indicators by race in Brazil, see SHICASHO (2002).

Regarding the housing tenure conditions, we have observed that a high proportion of the housing stock is owner-occupied. From 1992 to 1999 the percentage of owner-occupied dwellings with "formal" property rights,[18] that were already paid, increased from 56.8% to 63.5%. The percentage of homeowners still paying for the property in the formal credit markets and the number of "squatter"[19] housing decreased in the same period (see table 3).

TABLE 3

Tenure conditions in Brazilian urban areas – 1992-1999

Tenure conditions	1992	1993	1995	1996	1997	1998	1999
Own "Formal"	**64.1**	**66.0**	**67.0**	**69.1**	**69.2**	**69.0**	**69.5**
Own already paid formal	56.8	58.5	60.1	62.5	62.6	62.3	63.5
Own still paying formal	7.3	7.5	6.9	6.6	6.6	6.7	6.0
Rented	**19.1**	**18.6**	**17.4**	**16.3**	**16.4**	**16.3**	**16.3**
Own "Informal"	**7.0**	**5.7**	**5.8**	**5.5**	**5.5**	**5.7**	**5.5**
Own already paid informal	5.9	4.8	4.7	4.4	4.5	4.5	4.4
Own still paying informal	0.5	0.5	0.5	0.6	0.6	0.6	0.6
Other Tenure Conditions	0.5	0.4	0.5	0.5	0.5	0.5	0.5
Total Ceded	**9.8**	**9.6**	**9.8**	**9.0**	**8.9**	**8.9**	**8.7**
Ceded by Entrepreneur	1.8	1.7	1.6	1.6	1.5	1.3	1.2
Ceded by others	8.0	7.9	8.2	7.4	7.4	7.6	7.5
Ignored	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total	**28754045**	**29686098**	**31475591**	**32227158**	**32980372**	**33993829**	**34870828**

Source: IPEA/DIRUR based upon the 1992-1999 PNAD/IBGE microdata.

The dwelling units occupied by "squatters" and ceded by others are more frequent in the lowest income quintiles (see table 4). Conversely, the presence of "formal" owner-occupied and rental housing is larger in the higher income quintiles. These facts demonstrate the small access of the poor population to the formal housing, financial and rental markets, and the importance of the personal and social networks to guarantee access to housing among the low-income population. The increase in the percentage of owner-occupied housing, either "formal" or "informal", and the low participation of the rental housing in Brazil (16.3%) can be explained by the imperfections, the high regulations and the bureaucratic procedures in the formal rental, financial and housing markets, and by the past Governmental housing policies, that relied almost exclusively in facilitating access to owner-occupied housing ("*Política da Casa Própria*"). Such facts, together with the high housing and urban land prices in face of the low-income levels and the high income and asset inequality in Brazil, result in a perverse situation, where the poor population does not have real tenure choice possibilities relative to the mode of housing tenure. As such, the poor are almost compelled to become "owners" in the informal housing markets, because of their low-income levels, precarious employment conditions and the lack of collateral for renting and obtaining housing finance in the formal credit and rental markets.

18. Dwelling units where the respondent declares itself as the owner of the property and the land plot where the construction is located. However, since PNAD does not ask about the existence of a formal land title, the fear of eviction can lead to an overestimation of the percentage of formal owner-occupied households.

19. Owners that own the house but not the land and other tenure conditions.

TABLE 4

Housing conditions in Brazilian urban areas by quintile of household *per capita* income – 1999

Tenure type	Q1	Q2	Q3	Q4	Q5	Total
Own already paid formal	14.68	18.83	20.42	22.21	23.85	100.00
Own already paid informal	27.31	25.55	21.26	15.93	9.95	100.00
Own still paying formal	8.12	14.46	17.04	26.65	33.73	100.00
Own still paying informal	11.13	16.73	15.43	28.94	27.87	100.00
Rented	10.91	16.28	19.99	24.59	28.22	100.00
Ceded by Entrepreneur	16.39	20.77	22.16	23.28	17.4	100.00
Ceded by others	24.86	21.62	23.12	18.41	11.99	100.00
Other Tenure Conditions	25.23	30.39	21.49	16.15	6.74	100.00
Ignored	23.17	7.22	23.35	28.54	17.72	100.00

Source: IPEA/DIRUR based upon 1999 PNAD/IBGE microdata.

As the Housing Financial System (SFH) financed only 26.6% of the total housing units produced from 1994 to 1997[20] and the percentage of declared owner-occupied housing already paid is larger among the poor (71.0%) than the non-poor (68.0%),[21] one can infer that the poor population had access to housing through squatting and self-help construction in informal settlements.

The housing tenure conditions indicators for substandard areas, and households headed by the indigent, the poor and the non-white, despite their improvement in the 1990s, are still smaller than those tenure indicators for white headed household living in formal residential areas, presenting smaller percentage of "formal" property rights and larger proportion of "squatter" and ceded housing, revealing a greater fragility of this population strata, with respect to their housing tenure conditions (see table 5).

TABLE 5

Tenure conditions by area, gender, race and household *per capita* income – 1999

Tenure conditions	1999					Income *per capita* (minimum wages)	
	Urban Total	Women-headed	Non-White headed	Substandard Total	Metropolitan TOTAL	1/2 mw	1/4 mw
Own "Formal"	**69.45**	**69.1**	**67.9**	**57.7**	**67.9**	**65.5**	**63.1**
Own already Paid formal	63.45	63.6	63.0	55.7	61.9	62.3	60.1
Own Still Paying Formal	5.99	5.5	4.9	2.0	6.0	3.2	3,0
Rented	**16.32**	**17.0**	**15.7**	**7.2**	**16.5**	**11.6**	**11.4**
Own "Informal"	**5.47**	**5.6**	**6.9**	**29.2**	**7.4**	**9.2**	**11.1**
Own already paid informal	4.36	4.5	5.6	27.3	5.8	8,0	9.9
Own still paying informal	0.6	0.5	0.5	0.4	0.7	0.4	0.3
Other tenure conditions	0.52	0.6	0.8	1.5	0.9	0.8	0.9
Ceded	**8.73**	**8.3**	**9.5**	**5.9**	**8.2**	**13.7**	**14.4**
Ceded by entrepreneur	1.23	0.5	1.2	0.2	1.5	1.4	0.8
Ceded By others	7.5	7.8	8.3	5.7	6.7	12.3	13.6
Ignored	**0.03**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: IPEA/DIRUR based upon the 1999 PNAD/IBGE microdata.

20. SEDU/IPEA/CAIXA (2001).

21. NERI *et al.* (2000)

4 THE DIMENSIONS OF THE BRAZILIAN HOUSING PROBLEMS

In order to make a diagnosis of the Brazilian housing problems it is necessary to define what we understand by "adequate housing". The concept of adequate housing varies according to local specific characteristics and the evolution of the housing needs of the population over time. The definition of what constitutes the level of adequate housing established as a policy goal by the government and the entire society implies in a normative view concerning the operation of the housing market. The United Nations Human Settlements Program – UN/HABITAT adopts the following definition for adequate housing:

> Adequate shelter means more than a roof over one's head. It also means adequate privacy; adequate space; physical accessibility; adequate security; security of tenure; structural stability and durability; adequate lighting, heating and ventilation; adequate basic infrastructure, such as water-supply, sanitation and waste-management facilities; suitable environmental quality and health-related factors; and adequate and accessible location with regard to work and basic facilities: all of which should be available at an affordable cost. Adequacy should be determined together with the people concerned, bearing in mind the prospect for gradual development (…) (Habitat Agenda, paragraph 60).

According to this definition and from the consumers' point of view,[22] the housing market should operate in a way to ensure that: everybody is housed; there is a separate dwelling unit for each family; the expenditure with housing does not take up an undue proportion of the household income; housing prices are stable; there is adequate living area as compared to household size, the structures are safe and are not vulnerable to natural disasters; the infrastructure services are appropriate and reliable; tenure is secure; households possess different options to meet their housing needs; enough housing credit is available and the interest rates allow desirable levels of saving and investment by the households.

Analyzing the housing conditions in Brazil, we can notice the existence of considerable unsatisfied housing needs. The Brazilian housing problems are particularly visible in large urban centers. The housing problems in Brazilian urban areas include the social exclusion and the spatial segregation of the poor population in slums and other informal settlements, the persistence of a considerable housing deficit, the lack of urban infrastructure services like water, sewage and garbage collection, the lack of access to opportunities of productive employment and the predatory occupation of risk-prone and environmental protected areas. The relative shortage and the high prices of urban serviced land, due to inadequate land use and building legislation, collaborate to exacerbate the housing problems in the country.[23]

The slums and the informal settlements located in the central cities or in the peripheries of the main Metropolitan Areas (MAs) are the most visible aspects of the Brazilian housing problems. In 1999 there were 1.4 million dwelling units located in slums, 80.2% located in the 10 main MAs of the country, comprising about 5 million people. The largest percentages of slum dwellers in relative terms are found in the MAs of Recife (26.5%) and Belém (23.1%). In absolute terms, the numbers

22. For comments on the desirable characteristics of a well functioning housing market according to several stakeholders, see THE WORLD BANK (1993).

23. IPEA (2001) shows that an excessive urban legislation can be responsible for the rigidity of housing supply and for the increase of informal settlements in Brazilian urban areas.

concentrate in the MAs of Rio de Janeiro, São Paulo and Recife, that jointly contribute to 62.9% of the total slum dwelling units of the country. The largest growth rates in slum areas in 1992-1999 were found in Federal District (FD) and in the MA of Rio de Janeiro.[24] The process of slum formation ("*favelização*") is essentially a metropolitan phenomenon,[25] exerting strong pressure over access to land and housing in the country's larger cities.

TABLE 6

Dwelling units in "slums" by Metropolitan Area – 1992-1999

(%)

Metropolitan Area	1992	1993	1995	1996	1997	1998	1999
Belém	21.1	21.8	22.2	22.1	22.7	22.1	23.4
Fortaleza	12.5	12.7	12.8	12.3	11.9	11.9	12.0
Recife	26.4	26.2	26.5	26.1	26.4	26.2	26.5
Salvador	3.5	3.9	4.1	3.6	3.4	3.6	3.2
Belo Horizonte	8.1	7.8	7.8	8.2	7.7	7.7	7.5
Rio de Janeiro	9.8	8.9	9.8	10.5	10.1	10.5	10.4
São Paulo	5.7	5.6	5.4	5.4	5.7	4.9	5.6
Curitiba	3.7	3.4	3.3	3.0	3.3	3.3	3.1
Porto Alegre	3.7	3.6	3.7	3.5	3.8	3.6	3.5
Federal District	0.7	0.5	1.1	1.1	0.8	1.4	1.5
Total Metropolitan Areas	**8.1**	**7.9**	**8.0**	**8.2**	**8.1**	**7.9**	**8.1**
Total Urban Areas	**4.1**	**4.0**	**4.0**	**4.0**	**4.1**	**3.9**	**4.0**

Source: IPEA/DIRUR based upon the 1992-1999 PNAD/IBGE microdata.

Another important problem concerns the persistence of considerable quantitative and qualitative housing deficits, that affect mainly the country's low-income population. The existence of slums and the housing deficit are structural problems of Brazilian society, which have intensified during the 40's due to the intensification of the urbanization process, with an increased concentration of the population in the major cities, without the necessary provision of housing and urban infrastructure services.

The most accepted methodology for determining the housing deficit in Brazil was prepared by the Fundação João Pinheiro (FJP, 1995). It showed a quantitative housing deficit of almost 5.0 million dwelling units in 1991.[26]

Using a methodology similar to the one of FJP (1995),[27] we have calculated the existence of a housing deficit of about 5.3 million new units in 1999, concentrated mainly in urban areas (71.3%). The Quantitative Housing Deficit measures the need of construction of new residences and the replacement of the dwelling units made of

24. The numbers for dwelling units in substandard areas showed here reflect the sectors classification for IBGE 1991 Census (regular or substandard), over which 1990s PNADs sectors are classified and can present great variation from decade to decade, as urban upgrading and regularization programs change IBGE classification. The classification of sectors in IBGE 2000 census present different incidence of slums (substandard sectors) among the metropolitan areas, as is the case of Recife, due to the regularization and slum upgrading actions under the PREZEIS.

25. MORAIS, CRUZ and OLIVEIRA (2003) showed that the probability of becoming a slum dweller is higher among the inhabitants of the 10 main metropolitan areas and in the censitary areas classified by PNAD as self-representative ("*auto-representativas*") – state capitals, municipalities of other metropolitan areas and municipalities located in highly populated areas, of economic importance and with other relevant characteristics.

26. In 2001, FJP introduced some alterations in their methodology, but we believe that FJP (1995) contains the elements of what constitutes the "core deficit", and is quite similar to the studies developed by CEPAL for Latin America (see SZALACHMAN, 2000).

27. Our methodology differs from FJP (1995) only by including the owner-occupied rooms in the calculation of housing deficit as cohabitation. This inclusion is justifiable because rooms don't satisfy, in general, the minimum habitability conditions. The FJP (1995) includes in the housing deficit only the rented and ceded rooms.

non-durable materials, and is calculated by adding up the improvised dwellings units (those constructed without residential purposes), with the dwellings where there is cohabitation (more than one family per residence and the dwellings classified as rooms in PNAD) and the number of dwelling with non-durable structures (walls that are made of other materials than masonry or processed wood).

TABLE 7

Quantitative housing deficit in Brazil by rural and urban areas – 1991-1999

Year	Urban deficit	% Urban deficit	Rural deficit	% Rural deficit	Total deficit	Total occupied housing stock	Housing deficit / total occupied housing stock (%)
1991*	3357583	67.31	1630788	32.69	4988371	34734715	14.36
1992	3489566	68.33	1617055	31.67	5106621	36026749	14.17
1993	3506966	68.75	1593711	31.25	5100677	36957963	13.80
1995	3634013	69.06	1627747	30.94	5261760	38969714	13.50
1996	3642540	70.70	1509545	29.30	5152085	39745768	12.96
1997	3779907	71.48	1507844	28.52	5287751	40644623	13.01
1998	3748283	70.16	1594462	29.84	5342745	41839703	12.77
1999	3755996	71.28	1513016	28.72	5269012	42851326	12.30

Source: IPEA/DIRUR based upon 1992-1999 PNAD/IBGE microdata and *FJP (1995).

The urban housing deficit is due mainly to family cohabitation. This is a more serious problem in Metropolitan Areas (MAs), whereas in rural areas the housing deficit is attributed mainly to the rusticity of the residences. Although the housing deficit as proportion of the total housing stock has dropped from 14.4% in 1991 to 12.3% in 1999, the urban deficit increased proportionally from 67.3% to 71.3%. Family cohabitation accounts for 83.2% of the urban housing deficit, and affects mainly the population that earns up to 2 minimum wages (m.w.) *per capita* (84.5%). The urban housing deficit in relative terms is more pronounced among the poor population (household *per capita* income up to ½ m.w.), where the relative housing deficit accounts for 19.1% of the total housing stock in that income bracket.

TABLE 8

Urban housing deficit in Brazil by household *per capita* income – 1999

Household *per capita* income in minimum wages (m.w.)	Cohabitation	Non-durable	Improvised	Total deficit	%	% Acumulated
no monetary income	32797	26867	1452	61116	1.63	1.63
0 to 1/4	238139	133245	2172	373556	9.95	11.57
1/4 to 1/2	535756	193694	3153	732603	19.50	31.08
1/2 to 1	957531	165895	5021	1128447	30.04	61.12
1 to 1.5	517913	47604	5684	571201	15.21	76.33
1.5 to 2	286544	17847	1284	305675	8.14	84.47
2 to 3	281610	12417	2962	296989	7.91	92.37
3 to 5	172112	5411	1935	179458	4.78	97.15
5 to 10	79803	820	1050	81673	2.17	99.33
10 to 20	18411	261	0	18672	0.50	99.82
more than 20	4901	841	533	6275	0.17	99.99
without income declaration	331	0	0	331	0.01	100.00
Total	**3125848**	**604902**	**25246**	**3755996**	**100.00**	**100.00**

Source: IPEA/DIRUR based upon 1999 PNAD/IBGE microdata.

In 1999, the housing deficit for the 10 MAs of the country reaches 1.4 million new housing, with half of this total concentrated in the MAs of Rio de Janeiro and São Paulo. The MAs with the largest relative housing deficit were Belém (27.6%), Recife (17.4%), Fortaleza (17.1%) and the Federal District (15.1%). The smallest percentage of the housing deficit are found among the Southern MAs of Curitiba (7.1%) and Porto Alegre (8.0%), as you can see on table below.

TABLE 9

Housing deficit in Brazil by Metropolitan Area – 1999

Metropolitan Area	Households	Households (%)	Cohabitation	Non-durable	Improvised	Housing deficit	Contribution to the deficit (%)	Relative deficit (%)
Belém	219869	1.6	56794	3512	306	60612	4.3	27.6
Fortaleza	677416	4.9	99664	15485	816	115965	8.2	17.1
Recife	821011	5.9	111627	30981	195	142803	10.0	17.4
Salvador	740902	5.4	94798	795	0	95593	6.7	12.9
Belo Horizonte	1077345	7.8	95401	1265	1012	97678	6.9	9.1
Rio de Janeiro	3207843	23.2	269238	10118	562	279918	19.7	8.7
São Paulo	4786238	34.6	366168	46297	841	413306	29.1	8.6
Curitiba	726193	5.3	42288	9616	0	51904	3.7	7.1
Porto Alegre	1041456	7.5	68954	14818	0	83772	5.9	8.0
Federal District	530226	3.8	65094	14718	207	80019	5.6	15.1
Total	**13828499**	**100.0**	**1270026**	**147605**	**3939**	**1421570**	**100.0**	**10.3**

Source: IPEA/DIRUR based upon 1999 PNAD/IBGE microdata.

The states with the highest housing deficit in relative terms are Maranhão (50.6%), Pará (24.3%), Piauí (22.6%) and Tocantins (22.4%). The states located in the Southeast and the South present relative housing deficit below the national average (12.3%). In absolute terms, the highest housing deficit occurs in the State of São Paulo, where the need for new constructions is bigger than 810 thousand units, half of it concentrated in São Paulo metropolitan area.

TABLE 10

Total housing deficit in Brazil by state – 1999

State or Federal District	Households	Contribution to the households (%)	Cohabitation	Non-durable	Improvised	Housing deficit	Contribution to the deficit (%)	Relative deficit (%)
Rondônia	217046	0.51	20116	7764	353	28233	0.54	13.01
Acre	88242	0.21	13073	1961	327	15361	0.29	17.41
Amazonas	428752	1.00	44271	4785	2393	51449	0.98	12.00
Roraima	48242	0.11	6492	3401	0	9893	0.19	20.51
Pará	706159	1.65	134622	35774	1515	171911	3.26	24.34
Amapá	82469	0.19	12583	3843	0	16426	0.31	19.92
Tocantins	284864	0.66	27137	35841	729	63707	1.21	22.36
Maranhão	1225788	2.86	120264	499202	824	620290	11.77	50.60
Piauí	644288	1.50	71533	74085	0	145618	2.76	22.60
Ceará	1701932	3.96	182642	161482	2353	346477	6.58	20.36
Rio Grande do Norte	630991	1.47	98024	31029	0	129053	2.45	20.45
Paraíba	849217	1.98	87696	26207	504	114407	2.17	13.47
Pernambuco	1897537	4.42	232128	69982	695	302805	5.75	15.96
Alagoas	652964	1.52	62641	39511	564	102716	1.95	15.73
Sergipe	431097	1.00	44319	17860	0	62179	1.18	14.42
Bahia	3242500	7.55	301978	216054	5494	523526	9.94	16.15
Minas Gerais	4614029	10.75	370082	53539	4746	428367	8.13	9.28
Espírito Santo	804624	1.87	63602	21706	505	85813	1.63	10.66
Rio de Janeiro	4185435	9.75	340768	19008	967	360743	6.85	8.62
São Paulo	10013976	23.33	738725	69898	1684	810307	15.38	8.09
Paraná	2629143	6.12	138091	41344	1785	181220	3.44	6.89
Santa Catarina	1429662	3.33	78522	6981	1745	87248	1.66	6.10
Rio Grande do Sul	2998354	6.99	202588	36898	3396	242882	4.61	8.10
Mato Grosso do Sul	554195	1.29	54646	18647	1287	74580	1.42	13.46
Mato Grosso	650886	1.52	53746	29266	1020	84032	1.59	12.91
Goiás	1382225	3.22	108897	19860	993	129750	2.46	9.39
Federal District	530226	1.24	65094	14718	207	80019	1.52	15.09
Total	**42924843**	**100.00**	**3674280**	**156064 6**	**34086**	**5269012**	**100.00**	**12.27**

Source: IPEA/DIRUR based upon 1999 PNAD/IBGE microdata.

The housing deficit is proportionally higher among women (16.0%) and non-white (17.4%) headed households, in the informal settlements (17.9%) and in the poorest regions of the country, such as the North (19.2%) and the Northeast (20.8%). The incidence of the housing deficit in absolute numbers occurs mainly in the Northeast and the Southeast, that contribute to 44.5% and 32.0% of the total deficit, respectively.

TABLE 11

Housing deficit in Brazil by region, area, race, and gender of the head of household – 1999

Region, sector, race, and gender	Households	Contribution to the households (%)	Cohabitation	Non-durable	Improvised	Housing deficit	Contribution to the deficit (%)	Relative deficit (%)
Region								
North	1855774	4.3	258294	93369	5317	356980	6.8	19.2
Northeast	11276314	26.3	1201225	1135412	10434	2347071	44.5	20.8
Southeast	19618064	45.7	1513177	164151	7902	1685230	32.0	8.6
South	7057159	16.4	419201	85223	6926	511350	9.7	7.2
Center-West	3117532	7.3	282383	82491	3507	368381	7.0	11.8
Gender								
Men-headed	32962404	76.8	2393408	1248061	29825	3671294	69.7	11.1
Women-headed	9962439	23.2	1280872	312585	4261	1597718	30.3	16.0
Race								
White-headed	24545738	57.2	1703395	359115	15090	2077600	39.4	8.5
Non-white headed	18379105	42.8	1970885	1201531	18996	3191412	60.6	17.4
Type of Sector								
Non-special	41523607	96.7	3497207	1487900	33764	5018871	95.3	12.1
substandard	1399185	3.3	176868	72746	322	249936	4.7	17.9
special of boats, etc.	2051	0.0	205	–	–	205	0.0	10.0
Total	**42924843**	**100.0**	**3674280**	**1560646**	**34086**	**5269012**	**100.0**	**12.3**

Source: IPEA/DIRUR based upon 1999 PNAD/IBGE microdata.

The entry in the labour market can be a fundamental condition to have access to the housing market. A bad insertion in the labour market results in low and unstable income levels and, usually, in inadequate housing conditions.[28] As we can see in table 12, the bulk of the total housing deficit (78.4%) falls into the population with low labour market status, such as unemployed, domestic servants, informal employees (workers without work card, workers in production for self-consumption, self-employed, workers in self-help construction) or in non-economically active people.[29]

28. In Brazil, the formal employees (military, public servants and employees with work card) have more protection against fluctuations in the labour market, as they contribute to social security and/or have access to the Trust Fund of Employment Duration (FGTS), to unemployment insurance and to motherhood license (for women). Besides having higher and less volatile income, what increases their payment and indebtment capacity to contract a loan or rent a house in the formal housing and financial markets, the employees with work card can also use their FGTS as down payment to buy a house in the SFH contracts. Furthermore, the number of employees with work card also impacts the available FGTS funds for housing and urban development.

29. The links between informality in the labour market and informality in the housing market in Brazil is also explored in ABRAMO (2003).

TABLE 12

Housing deficit in Brazil, by position of the head of household in the labour market – 1999

INDICATORS		Brazil							Relative deficit (%)
		Households	Households (%)	Non-durable	Improvised	Cohabitation	Housing deficit	Contribution to deficit (%)	
Economically Active People		**33964886**	**79.1**	**1322151**	**30677**	**2450127**	3802955	**72.2**	**11.2**
Occupied		**32405607**	**75.5**	**1284272**	**28992**	**2303327**	3616591	**68.6**	**11.2**
Position in Main Work	Employee with Work Card	9864781	23.0	120708	5673	539700	666081	12.6	6.8
	Military	149427	0.3	207	0	3646	3853	0.1	2.6
	Public Servant	2068280	4.8	20671	399	140058	161128	3.1	7.8
	Other Employee without Work Card	5162411	12.0	298950	7365	367215	673530	12.8	13.0
	Employee without declaration of Work Card	2596	0.0	0	0	405	405	0.0	15.6
	Domestic servant with Work Card	385076	0.9	3065	0	51250	54315	1.0	14.1
	Domestic servant without Work Card	855119	2.0	41628	253	107315	149196	2.8	17.4
	Domestic servant without declaration of Work Card	1046	0.0	0	0	0	0	0.0	0.0
	Self-employed	10770570	25.1	713539	13087	845391	1572017	29.8	14.6
	Employer	2170016	5.1	12599	2215	132698	147512	2.8	6.8
	Production for self-consumption	800626	1.9	68546	0	87833	156379	3.0	19.5
	Self-help construction	57093	0.1	2192	0	8437	10629	0.2	18.6
	Without monetary income	118566	0.3	2167	0	19379	21546	0.4	18.2
Not Occupied		**1559279**	**3.6**	**37879**	**1685**	**146800**	**186364**	**3.5**	**12.0**
Not Economically Active People		**8953017**	**20.9**	**238495**	**3409**	**1224153**	**1466057**	**27.8**	**16.4**
Without declaration		**6940**	**0.0**	**0**	**0**	**0**	**0**	**0.0**	**0.0**
Total		**42924843**	**100.0**	**1560646**	**34086**	**3674280**	**5269012**	**100.0**	**12.3**

Source: IPEA/DIRUR based upon 1999 PNAD/IBGE microdata.

The results showed above about the incidence of the housing deficit, despite some methodological limitations, highlight the importance of the subject to the design and implementation of public policies that can be used simultaneously to fight urban poverty, reduce regional inequalities and promote the social inclusion of vulnerable groups.

However, the persistence of a controversy concerning the size and the nature of the housing deficit in Brazil, with a methodological confusion between qualitative and quantitative housing deficit, housing needs and housing inadequacy, show that one should be careful when looking at the numbers for the housing deficit.[30] Some criticisms may be posed, not only over the methodology used by FJP to calculate the housing deficit, but also over the concept of family used by IBGE, that makes a confusion between the definitions of family, household and dwelling unit.[31] Is this sense, the figures for cohabitation can pose some problems, once that not all family cohabitation is involuntary, and doesn't necessarily stand for housing deficit. In order to help the process of policy-making, the calculation of the housing deficit should take into account the life cycle of the families, the density per household, the main socioeconomic characteristics of the household's head (age, labour market insertion, sector of activity, educational level, etc.), as well as the financial burden that the payment for housing and urban infrastructure services represents in the household's budget, and the role of housing in the household's saving behavior and investment

30. For a discussion on the concept, the methodology and the relevant information for the calculation of housing deficit see RODRIGUEZ (1999), SZALACHMAN (2000), VASCONCELOS and CANDIDO JR. (1996), CDHU (2001), NEGRÃO AND GARCIA (2001), GONÇALVES (1997 and 1998), CARDOSO (1998), TASCHNER (1992) and PRADO and PELIN (1993).

31. BERCOVICH (1999), MEDEIROS and OSORIO (2001) and MEDEIROS, OSORIO and VARELLA (2002) analyze the concepts of family, household and dwelling unity used by IBGE.

decisions, etc., demonstrating the need for additional research in this area.[32] Furthermore, some authors like NEVES (1997) and The WORLD BANK (1993) even argue that the use of the housing deficit approach is questionable, because its analytical perspective is centered on the concept of housing needs and housing rights, being based in the potential demand and in the social provision of housing by the government, outside the market mechanisms, and not in the effective demand for housing. Those authors argue that the solution for the housing problems cannot ignore the logic of operation of the housing markets, and the capacity of payment of the country population.

Besides the quantitative housing deficit, we can also point out the existence of a high qualitative housing deficit, relative to the excessive rent to income ratio,[33] overcrowding[34] and lack or inadequacy of urban infrastructure services like water, sewerage and garbage collection. In 1999, almost 2 billion urban households committed more than 30% of their monthly income with rent payments and 2.5 million households residing in urban areas were overcrowded, with more than 3 persons per bedroom. The proportion of households undergoing some form of overcrowding is larger within the lowest quintiles of income, reaching 22.8% in the 1st quintile. The rent to income ratio of rental housing grew from 12.7% to 24.6% in the period in analysis, evidencing a substantial increase in the burden with rent during the 90´s.

In spite of the improvement of the indicators of access to urban services, about 12 million urban households didn't have adequate basic sanitation services[35] in 1999. The largest deficits of sanitation are concentrated among poor households, where 65.2% of the households with *per capita* income up to ½ m.w. have inadequate sanitation conditions. In the state of Piauí, in the Northeastern region, the percentage of households with inadequate sanitation can reach 97.5%.

There are still other factors that we can take into account when analyzing Brazilian housing problems, such as the bad provision of public transportation, the low numbers of telephone connections, the low level of sewage treatment and the lack of adequate solid waste disposal and treatment. Like the quantitative deficit, the qualitative housing deficit also affects mainly the slum dwellers, the low-income population and the afrodescendents, reinforcing the existing patterns of spatial segregation and social exclusion.

Other important problem of the Brazilian Housing Sector concerns housing financing due to: 1) insignificant number of housing units produced by the public sector through the Financial Housing System (SFH) between 1964-1997, when a large portion of the housing construction occurred through self-financing and self-construction; 2) subsidies to the higher-income classes via SFH; 3) high arrearage ratio and problems incurred from the readjustment indexes of the housing contracts; 4) exhaustion of the financial model through public sector, due to the rationing of credit

32. Recent studies coordinated by IPEA together with The World Bank and the Cities Alliance have adapted the methodologies on housing needs assessment developed by NOLL *et al.* (1997) and RODRIGUEZ *et al.* (1991) to Brazil (see SERRA *et al.*, 2005, about the adaptation of the Florida Affordable Housing Needs Methodology to Brazil).

33. Rent to income ratio over 30%, parameter internationally used to quantify rent burden.

34. We have considered as overcrowded a dwelling unit with more than 3 persons per bedroom, following the FJP (1995) and the Ministry of Cities´ methodology.

35. Piped water inside the house, sewage network or septic tank and direct or indirect garbage collection, according to IBGE definition of adequacy.

to governmental agents, and the establishment of limits for the debt of states and municipalities in a context of macroeconomic stability, which calls for the need to find new sources of funding to finance housing and urban infrastructure services to the low-income population; 5) declining and insufficient financial resources from the Federal Budget (OGU) destined to housing and urban development,[36] dispersed and subject the political influence in their allocation; 6) high interest rates, that increase the difficulties of the population to have access to loans from the SFH and the take-off of the newly created Real Estate Financial System (SFI); and 7) concentration of the credit risk in Caixa Econômica Federal (CAIXA), among others.

The concentrated profile of the housing needs in the poor segment of the population and the imperfections in the housing market, justify the supply of subsidized credit to the low-income population by the Federal Government. However, the beneficiaries of such subsidized credit system for the purchase of owner-occupied house via SFH, either in the past and in the current housing policies, have higher income than the national average, which demonstrates the redlining of the low-income households from the formal market of housing finance.

The rationing of credit to public sector institutions, and the lack of payment and indebtment capacity of states, municipalities, public companies and low-income population, prevent the access of these agents to the resources of the Trust Fund of Employment Duration (FGTS),[37] rendering the displacement of the loans from this main source of funding to lending programs for the private sector. Such fact, benefits people of higher purchasing power, in detriment of the poor population, thus preventing the attainment of the universal goal of providing adequate housing for all, once the housing deficit is concentrated in the low-income population. As FGTS has been the main source of funding for investment in housing, sanitation and urban development, and it embeds a significant subsidy in interest rate and the resources of OGU, account for only a small portion of the total investment in housing and urban development, we come across a predicament over the role of government intervention in the provision and facilitation of the access to adequate housing for the income poor.

We can also point out the problems related to the high cost and the bad quality of the housing construction, low productivity, high losses of materials and inadequate technologies in the construction sector.

Finally, we should highlight the lack of a system of urban and housing indicators to assess and monitor the performance of the housing sector in Brazil, with the few available information dispersed among several institutions.

5 CONCLUDING REMARKS

The housing sector has a strong impact on poverty reduction and the improvement of the quality of life in the Brazilian urban areas. The housing policies implemented by the government, in spite of their declared objective to improve housing conditions for the low-income population, ended up financing, with enormous subsidies, the middle and high-income classes.

36. The expenditure in Housing and urban development accounts for less than 1.0% of all the federal government social expenditure (RIBEIRO and FERNANDES, 2000).

37. The FGTS is responsible for 80.1% of the total investment in housing, sanitation and urban infrastructure services during the period 1995-2001.

The high building costs and land and housing prices in the country, as compared to the low-income levels of the majority of the Brazilian population, the low indebtment and payment capacity to contract credits in the formal financial and housing markets, the excessive land use restrictions and building regulations and the inordinate bureaucratic procedures and transaction costs to finance, rent, buy and register a property, increase the purchase price and rent of a house in the formal housing market, well above the payment capacity of Brazilian low-income population. Furthermore, the largest unemployment levels and informal occupation in the labor market among the poor, cause their exclusion of the formal markets to purchase, rent and finance housing, due to the lack of collateral to substantiate a loan or guarantee a contract. Also, the inexistence of formal mechanisms to corroborate revenues leave the poor with very few options of access to housing, besides self-help construction in slums or in other informal settlements, showing their lack of tenure choice in the housing markets.

Among the major challenges now faced by the Brazilian government to universalize the access to adequate shelter for all, one can highlight: 1) the improvement of the mechanisms of social control over public investments; 2) the adjustment of the macroeconomic policies to the social goals; 3) the revision of the urban legislation, the housing financing system and the building technologies to match the real needs and the levels of income of the Brazilian population; and 4) the promotion of housing and urban development policies and programs that are more integrated with other government sectorial and social policies and better targeted at the poor.

The results of this paper show that the solution of the Brazilian housing problems doesn't rely just on massive investment in new housing construction,[38] but, mainly, by adapting the housing supply to the income level of the country's population effective demand for housing. The high poverty levels and income and wealth inequalities in the country, together with the high housing prices, restrict the tenure choices of the Brazilian population, resulting in the redlining of the poor households from the formal housing, financial and rental markets, forcing them to use the informal market to address their housing needs. The incidence of the housing deficit and slums in the low-income population and the poorest regions of the country show the direct relation between poverty levels and the lack of access to adequate housing and urban services.[39] The persistence of the housing deficit and slums in Brazil reflect the inefficacy of the public housing policies to solve the market failure and create an appropriate housing supply to meet the profile of the effective housing demand of the Brazilian population, considering their low-income levels and the high-income inequality that prevail in the country. Taking into account that the policies and programs designed by the government caused a rationing of credit and excluded the poor from the access to subsidized credit in the formal markets, there is a strong evidence in favor of the need to provide direct and explicit subsidies and new housing solutions to meet the housing needs of the income poor, like slum

38. The number of non-occupied housing units is equivalent to the total housing deficit in almost every Brazilian State and MA. According to the IBGE 2000 Census, there were over 9 million of non-occupied dwelling units, where 6 million were vacant, 2.7 million were seasonal residences and 500 thousand were closed. We agree with SERRA *et al.* (2005) when they stress that high vacancy rates in Brazil present a challenge to policy makers and if vacancy rates in Brazil were lowered, construction need could be diminished.

39. The housing deficit in relative terms is higher among the poor population and in States of Maranhão and Piauí, that also present the highest poverty ratios of the entire country.

upgrading, serviced land, funding for housing reform and building materials,[40] social rental housing, micro-credit for housing[41] and lower building standards for social housing, among others.

In the context of fighting the public deficit, and increase the efficiency and efficacy of the public policies, it is necessary to integrate the housing policies with urban development programs and other sectorial, social and macroeconomic policies at all levels of Government. Only a highly integrated housing policy and better targeting in housing, sanitation and urban development programs can contribute to an effective solution for the Brazilian housing problems.

40 This is particularly important to address the qualitative housing deficit related to housing inadequacy caused by lack of water and sanitation facilities and overcrowding.

41. See FERGUSON (1999) and SERAGELDIN *et al.* (2000) for a survey on international experience on microfinance for housing.

6 REFERENCES

ABRAMO, P. A teoria econômica da Favela: Quatro notas sobre a localização residencial dos pobres e o mercado imobiliário informal. *In*: ABRAMO, P. (org.). **A Cidade da Informalidade**. Rio de Janeiro: Livraria Sette Letras. Rio de Janeiro: Faperj, 2003.

ARNOTT, R. Economic Theory and Housing. *In*: MILLS, E. **Handbook of Regional and Urban Economics**. North-Holland,1987.

BERCOVICH, A.; PEREIRA, N.M. Unidad de empadronamiento: ¿hogar, vivienda o familia? Ventajas y desventajas del enfoque del censo brasileño. *In*: CENTRO LATIONAMERICANO Y CARIBEÑO DE DEMOGRAFÍA-CELADE. América Latina: aspectos conceptuales de los censos de 2000. **Série Manuales no. 1**. CEPAL, Nações Unidas: Santiago de Chile, 1999.

CARDOSO, A. L. Meio Ambiente e Moradia: Discutindo o Déficit Habitacional a partir do caso da Região Metropolitana do Rio de Janeiro. **Anais do XI Encontro Nacional de Estudos Populacionais da ABEP**. Caxambu: ABEP, 1998.

CENTRE ON HOUSING RIGHTS AND EVICTIONS (COHRE) – **Sources 4: Legal Resources for Housing Rights**, available at the website <http://www.cohre.org/hrframe.htm>.

CENTRE ON HOUSING RIGHTS AND EVICTIONS (COHRE). **Legal Resources for Housing Rights: International and National Standards**. COHRE: Geneva, 2000.

COCCATO, M. **Alternatives to home ownership: rental and shared submarkets in informal settlements** (1996). Available at the website: <http://www.mchg.mcgill.ca/ mchg/coc/ abstract.htm>.

COMPANHIA DE DESENVOLVIMENTO HABITACIONAL E URBANO DO ESTADO DE SÃO PAULO-CDHU; FUNDAÇÃO SISTEMA ESTADUAL DE ANÁLISE DE DADOS – SEADE. **Diagnóstico das Condições Habitacionais no Estado de São Paulo**. SEADE: São Paulo, 2001.

FERGUSON, B. Micro-finance of housing: a key to housing the low or moderate-income majority? **Environment and Urbanization, vol. 11, no. 1**, 1999.

FUNDAÇÃO JOÃO PINHEIRO; SECRETARIA DE POLÍTICA URBANA DO MINISTÉRIO DO PLANEJAMENTO E ORÇAMENTO. **Déficit Habitacional no Brasil**. Fundação João Pinheiro: Belo Horizonte, 1995.

FUNDAÇÃO JOÃO PINHEIRO; SECRETARIA ESPECIAL DE DESENVOLVIMENTO URBANO DA PRESIDÊNCIA DA REPÚBLICA. **Déficit Habitacional no Brasil 2000**. Fundação João Pinheiro: Belo Horizonte, 2001.

GONÇALVES, R. R. Aspectos da Demanda por Unidades Habitacionais nas Regiões Metropolitanas – 1995/2000.**Texto para Discussão no 514**. IPEA: Rio de Janeiro, 1997.

GONÇALVES, R. R. O Déficit Habitacional Brasileiro: um mapeamento por unidades da Federação e por níveis de renda domiciliar. **Texto para Discussão no. 559**. IPEA: Rio de Janeiro, 1998.

HENLEY, A. Residential Mobility, housing equity and the Labor Market. **The Economic Journal, 108, 414-427**. Blackwell Publishes: USA, 1998.

INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA (IBGE). **Censo demográfico 2000**. Documentação dos microdados da amostra. Rio de Janeiro: IBGE, 2002.

INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA (IBGE). **Pesquisa Nacional por Amostra de Domicílios (PNAD)** 1992-1999 Microdados e documentação dos microdados da amostra. Rio de Janeiro: IBGE.

INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA (IBGE). **Síntese de Indicadores Sociais**. Rio de Janeiro, 2000.

INSTITUTO DE PESQUISA ECONÔMICA APLICADA (IPEA). **Série Gestão do Uso do Solo e Disfunções do Crescimento Urbano**. Brasília: IPEA, 2001.

LIM, G-C. Housing Policies for the Urban Poor in Developing Countries**. Journal of the American Planning Association (JAPA), vol. 53, n. 2**. American Planning Association: Chicago, 1987.

LUCENA, J. M. P. **O mercado habitacional no Brasil**. Rio de Janeiro: EPGE-FGV. Tese de Doutoramento, 1986.

MEDEIROS, M.; OSORIO, R. Arranjos Domiciliares e Arranjos Nucleares no Brasil: Classificação e Evolução de 1977 a 1998. **Texto para Discussão no. 788**. IPEA: Brasília, 2001.

MEDEIROS, M.; OSORIO, R.G., VARELLA, S. O levantamento de Informações sobre as famílias nas PNADS de 1992 a 1999. **Texto para Discussão no. 860**. IPEA: Rio de Janeiro, 2002.

MORAIS, M. P. As Condições de Moradia nas Áreas Urbanas Brasileiras na Década de 90. **Estudos Econômicos da Construção, volume 6, Número 1(9), (2002-2003)**. São Paulo: Sinduscon-SP, 2004.

MORAIS, M. P. Breve Diagnóstico sobre o Quadro Atual da Habitação no Brasil. **Políticas Sociais: Acompanhamento e Análise no. 4**, p. 109-118. IPEA: Brasília, 2002.

MORAIS, M. P; CRUZ, B. de O.; OLIVEIRA, C. W. de A. Residential Segregation and Social Exclusion in Brazilian Housing Markets. **Texto para Discussão no. 951**. IPEA: Brasília, 2003.

NAÇÕES UNIDAS/CENTRO DE DIREITOS HUMANOS. El Derecho Humano a una Vivienda Adecuada. **Folheto Informativo no. 21**. Nações Unidas, Genebra, 1996.

NEGRÃO, F.; GARCIA, F. Indicadores de Desenvolvimento habitacional. **Estudos Econômicos da Construção Vol. 5 no.1 (8)**. São Paulo: SindusCon-SP, 2001.

NERI, M. *et al*. Assets, Markets and Poverty in Brazil. **Ensaios Econômicos da EPGE, no. 374**. Rio de Janeiro: FGV/EPGE, 2000.

NEVES, V. **Elementos para uma abordagem integrada da questão habitacional em Portugal**. Faculdade de Economia da Universidade de Coimbra. Setembro, 1997(mimeo).

NOLL, P.F.; O´DELL, W.; SMITH, M.T.; SULLIVAN, J. Florida´s Affordable Housing Needs Assessment Methodology. **APA Journal, Autumn 1997**, pp. 495-508.

PRADO, R. A.; PELIN, E.R. **Moradia no Brasil – uma reflexão sobre o problema habitacional brasileiro**. São Paulo: FIPE/USP e CBMM, 1993.

REPÚBLICA FEDERATIVA DO BRASIL **Emenda Constitucional No 26** de 14 de fevereiro de 2000. Brasília: 2000.

REPÚBLICA FEDERATIVA DO BRASIL **Lei no. 10.257**, de 10 de julho de 2001. Brasília, 2001.

REPÚBLICA FEDERATIVA DO BRASIL. **Constituição da República Federativa do Brasil**. Brasília: 1988.

RIBEIRO, J. A. e FERNANDES, M. A. Acompanhamento e Dimensionamento do Gasto Social Federal: considerações metodológicas e resultados gerais para os anos 90. *In:* **Políticas Públicas: acompanhamento e análise no 1**. Brasília: IPEA, 2000.

RODRIGUEZ, J. Información censal relevante para la medición del déficit habitacional *In:* CENTRO LATIONAMERICANO Y CARIBEÑO DE DEMOGRAFÍA-CELADE. América Latina: aspectos conceptuales de los censos de 2000. **Série Manuales no. 1**. CEPAL, Nações Unidas: Santiago de Chile, 1999.

RODRIGUEZ, J.; CURBELO, J. L.; MARTIN, V. Una aproximación a las necesidades de vivienda en España: proyecciones 1990-2009. **Revista Española de Financiación a la Vivienda, n. 14 e 15**. Madrid: Banco Hipotecario de España, 1991.

ROTHENBERG, J.; GALSTER, G.C.; BUTLER, R.V.; PITKIN, J. **The maze of urban housing markets: theory, evidence and policy**. The Chicago University press: Chicago, 1991.

SANTOS, C. H. M. e CRUZ, B. de O. A dinâmica dos mercados habitacionais metropolitanos: aspectos teóricos e uma aplicação para a Grande São Paulo. **Texto para Discussão n. 713**. Brasília: IPEA, 2000.

SECRETARIA ESPECIAL DE DESENVOLVIMENTO URBANO (SEDU)/ INSTITUTO DE PESQUISA ECONÔMICA APLICADA(IPEA)/CAIXA ECONÔMICA FEDERAL (CAIXA). **Brazil National Report Istambul+5**. Brasília, 2001.

SERAGELDIN, M. *et al*. **Housing Microfinance initiatives – Synthesis and Regional Summary: Asia, Latin America and sub-saharan Africa with selected case studies**. The Center For Urban Development Studies/ Harvard University Graduate School of Design: 2000.

SERRA, M.V.; O'DELL, W.J.; MACEDO, J.; SMITH, M.J.; MORAIS, M.P.; VARELLA, S.F.; NGUYEN, D. Affordable Housing Needs Assessment Methodology: the adaptation of the Florida Model to Brazil. **Discussion Paper nº 1083**. Brasília: IPEA,. 2005.

SHICASHO , S. T. (org.) Desigualdade Racial: Indicadores Socioeconômicos – Brasil, 1991-2001. IPEA; Brasília, 2002. *In:* JACCOUD, L.; BEGHIN, N. **Desigualdades raciais no Brasil: um Balanço da Intervenção Governamental**. Brasília: IPEA, 2002.

SZALACHMAN, R. Perfil de déficit y políticas de vivienda de interés social: situación de algunos países de la región en los noventa. **Serie Financiamento del desarrollo no. 103**. CEPAL, Unidade de Financiamento para el Desarrollo, Nações Unidas: Santiago de Chile, 2000.

TASCHNER, S. P. O quadro atual da habitação no Brasil: o déficit de moradias como instrumento de avaliação da política habitacional. **Revista de Administração Municipal, v. 39, n. 203**, abr./jun. 1992.

THE URBAN INSTITUTE; ROBERT NATHAN ASSOCIATES INC. – **Preparing a National Housing Needs Assement**. The Urban Institute, 1986.

THE WORLD BANK. **Brazil low-income housing: alternatives for the poor**. The World Bank: Washington, D.C., 2002.

THE WORLD BANK. **The Housing Indicators Program Vol. I and II**. WB: Washington, DC, 1993.

THIELE, B. **The Right to Adequate Housing: A Key Component to Effective Urban Policies and Legislation**. Expert Group Meeting on Best Practices (mimeo). Brasília, 2001.

UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME/UN – HABITAT. **The Urban Indicators Program. The Vancouver Declaration on Human Settlements. The Istambul Declaration on Human Settlements. The Habitat Agenda. The Declaration on Cities and Other Settlements in the New Millenium**. UN-HABITAT: Nairobi. Available at the website: <http://www.un-habitat.org>.

UNITED NATIONS. **The Universal Declaration of Human Rights**. Available at the website: <http://www. un.org/Overview/rights.html>.

VASCONCELOS, J. R; CÂNDIDO JÚNIOR, J. O. O Problema Habitacional no Brasil: Déficit, Financiamento e Perspectivas. **Texto para Discussão no. 410**. IPEA: Brasília, 1996.

Ipea – Institute for Applied Economic Research

PUBLISHING DEPARTMENT

Coordination
Cláudio Passos de Oliveira

Supervision
Everson da Silva Moura
Reginaldo da Silva Domingos

Typesetting
Bernar José Vieira
Cristiano Ferreira de Araújo
Daniella Silva Nogueira
Danilo Leite de Macedo Tavares
Diego André Souza Santos
Jeovah Herculano Szervinsk Junior
Leonardo Hideki Higa

Cover design
Luís Cláudio Cardoso da Silva

Graphic design
Renato Rodrigues Buenos

The manuscripts in languages other than Portuguese published herein have not been proofread.

Ipea Bookstore

SBS – Quadra 1 – Bloco J – Ed. BNDES, Térreo
70076-900 – Brasília – DF
Brazil
Tel.: + 55 (61) 3315 5336
E-mail: livraria@ipea.gov.br

Composed in Adobe Garamond 11/13.2 (text)
Frutiger 47 (headings, graphs and tables)
Brasília – DF – Brazil

Ipea's mission
Enhance public policies that are essential to Brazilian development by producing and disseminating knowledge and by advising the state in its strategic decisions.

ISSN 1415-4765

ipea Institute for Applied Economic Research

Secretariat of Strategic Affairs

BRAZILIAN GOVERNMENT BRASIL