THE MISMATCH BETWEEN THE CAPACITY OF LOW-INCOME FAMILIES TO PURCHASE AN ADEQUATE HOUSING UNIT AND THE AVAILABLE HOUSING FINANCE PROGRAMS IN BRAZIL

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ABSTRACT

Since the 1940’s, Brazil has been passing through changes that have transformed it into a predominantly urban country. An exponential population growth and a rapid migration to urban areas have created a great demand for housing.

As a result, the rapid growth of large and medium cities brought urban problems, with a large share of the low-income population agglomerated in substandard housing, on the outskirts of cities, contributing to urban deterioration.

This paper will confront the housing necessities of the Brazilian low-income families and their capacity to pay the lowest price for an adequate housing unit in the formal market with the housing finance programs available in Brazil.

Considering the demand for housing and the availability of programs and resources directed to finance low-income families, this paper will result on the size of the necessary additional financing resources to face the housing necessities of low-income families in Brazil.

Key words: financing; low-income; housing; and Brazil.
Introduction

In South America, the estimates are that housing necessities represent approximately 38 million units, of which 45% are quantitative, those that depend on the production of new units, and 55% are qualitative, those related to the necessity of improving the existing units (Jordan, 2004). Brazil is responsible for the majority of these housing necessities.

The existence of housing necessities in Brazil has two main causes, which can exist separately or in conjunction. The first is the deficiency in the supply of housing units, which cannot attend the demand in adequacy, quantity and/or price. The second is the difficulty in accessing housing, through purchase or rent, due to the insufficiency of income, lack of credit, of adequate finance programs and/or of subsidies directed to the low-income population. Without access to the formal housing sector, the low-income population, frequently, migrates to the informal sector, originating substandard structures, slums, occupying risky areas, generally invaded properties, contributing to urban deterioration.

Regarding the financing of demand, the population can be divided in two main groups: the bank clients, those that can be financed by market solutions, and the social clients, those that need subsidized intervention of Governments in order to have access to adequate housing units, which will be the object of this paper. In both cases, the employed resources and instruments adopted by housing finance programs and institutions need to have particular characteristics adequate to each group.

Nowadays, regarding the demand of the low-income population for housing, Brazil faces two main challenges, which are: provide housing finance to attend the families that live in substandard conditions, and need immediate access to adequate housing units, and to accommodate the annual formation of new families.

The Low-Income Population Housing Problem

In the 1940’s, 70% of the Brazilian population lived in rural areas and 30% in urban areas, without expressive changes until 1960. From 1970 on, this balance has changed drastically, transforming Brazil, in the year 2000, already with 82% of the population living in urban areas, one of the most urbanized countries in the world (World Bank, 2002).

The low-income population, which in this paper will be represented by the families with monthly income up to 5 (five) minimum wages (MW), where one MW corresponds to approximately US$ 160,00 in 2006/2007 (the exchange rate considered is R$ 2,2 / US$), is the largest population share, corresponding to approximately 74,3% of the number of families in Brazil.
Table 1: Families distribution, per monthly income

<table>
<thead>
<tr>
<th>Familiar monthly income</th>
<th>Number of families</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Up to 3 MW</td>
<td>30,583,688</td>
<td>53,28</td>
</tr>
<tr>
<td>More than 3 MW up to 5 MW</td>
<td>10,471,640</td>
<td>18,25</td>
</tr>
<tr>
<td>More than 5 MW</td>
<td>13,821,426</td>
<td>24,08</td>
</tr>
<tr>
<td>Without income</td>
<td>1,571,829</td>
<td>2,74</td>
</tr>
<tr>
<td>Not declared</td>
<td>948,384</td>
<td>1,65</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>57,396,967</td>
<td><strong>100,00</strong></td>
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</tbody>
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On top of being the largest share of the number of families in Brazil, the low-income population has presented also the greatest growth rates in the last decade, as can be seen in the following Graph. The number of families with monthly income up to 3MW has the greatest growth rates of all, followed by those with monthly income of more than 3MW up to 5MW. The number of families with monthly income of more than 5MW has decreased.

Fundação João Pinheiro (2005) quantified the number of Brazilian families who immediately need to move to adequate housing units, due to be living in housing units in precarious conditions (housing units constructed with inappropriate materials, with deteriorated physical structure and/or located in places not destined for residential purposes), with more than one family living together (cohabitation) and with excessive rental cost (families with income up to 3MW that pays more than 30% of their budget in rent), which will be referred to in this paper as Repressed Demand for
Housing (RDH). The RDH of the urban low-income families in Brazil is 6,16 million families, representing 78% of the total RDH and 96% of the urban RDH, of which 56.8% corresponds to cohabitation, 23.5% to excessive rental cost and 19.7% to precarious housing units.

The concept of housing necessity, however, like the one presented by Fundação João Pinheiro (2005), is limited to the analysis of the necessity of adequate housing units, without considering whether families can pay the price for them. On the other hand, the concept of effective demand for housing is characterized by the willingness of families to purchase, reform or rent adequate housing units, and, mainly, by their capacity to pay the price, even if it is through loans, in case of purchase and reform. The following item will analyze the capacity of low-income families to pay the lowest price for the purchase of an adequate housing unit in the formal sector housing market in Brazil, in order to become effective demand.

**The Capacity of Low-Income Families to Pay the Price for an Adequate Housing Unit in the Formal Market**

In the budget of low-income families in Brazil, as quantified by IBGE-POF (2002/2003), the first expense is food, followed by housing (rent, purchase and reform), domestic expenses (taxes, fees, maintenance, home appliances, furniture etc.), transport, clothing, medical care. The expenses with housing, in average, are close to 20% of the total low-income familiar budget, which will be considered in this paper as the maximum share of the low-income familiar budget that can be directed to housing expenses.

The World Bank (2002) notes that, families with monthly income up to 5MW in Brazil are, in their majority, excluded from the formal sector housing market, for not having the capacity to pay the price for the smallest low-income housing unit. The high cost of available land and housing in comparison with the average income and insufficient financing explain why a large number of families have migrated to informal settlements on the outskirts of urban areas or are sharing homes with relatives or friends.

The following Graph shows the interest rates supported by low-income families to pay the price for the Referential Low-income Housing Unit (RLHU) through financing. The RLHU represents in this paper the smallest housing unit in the Brazilian formal market, the price is USD$ 11,480, which includes all direct and indirect costs. The reference for the RLHU is the smallest housing unit allowed by the Federal housing leasing program PAR, with area of 33m². The unit price was obtained by the weighted average of 25 enterprises of this program; five in each region, the weight was given by the growth projection of the number of low-income families in each region.
For the development of the analysis presented in Graph 2, the payment period for housing loans was limited between 6 and 20 years, which represents, approximately, what is being currently offered for low- and medium-income population in Brazil. It was not considered any fees, insurances, aggregated remunerations or any losses due to inflation between buyers’ income and loans, or, in case there is any, it will be carried out by the lending institution. The maximum share of the familiar budget compromised with housing is 20% and the referential market interest rate for housing finance considered is 13% per year, approximately, what is currently being offered by Brazilian major banks for mortgage financing.

For families with monthly income up to 1MW, any loan, even without interest, would implicate in compromising more than 20% of their familiar budget to purchase the RLHU. Families with monthly income of 2MW, 3MW and 4MW could purchase the RLHU, financed with maximum interest rates of approximately 3%, 8% and 12% per year, respectively, for a 20-year payment period, compromising 20% of their familiar budgets, but still they would have to be subsidized, because these interest rates are below the considered market interest rate. Only families with monthly income equal or above 5MW would be capable of purchasing the RLHU paying the considered market interest rate, for payment periods up to 20 years.

As can be seen from the results, the majority of low-income families is not capable of purchasing the RLHU through market solutions, and as consequence, need to be subsidized in order to have access to adequate housing units. The RLHU is a reference created in this paper only to establish a relative condition of comparison that was used to determine the capacity of low-income families to purchase the smallest housing unit in the formal market.
The Federal Housing Finance Programs Directed to Low-Income Families

The largest source of housing finance and subsidies for low-income families in Brazil is the fund called FGTS (fundo de garantia do tempo de serviço). It is a payroll tax fund owned by its members, which works as a compulsory saving system that is controlled by the Federal Government. Its main source of resources is a compulsory contribution made by companies in name of their employees, corresponding to 8% of their monthly wage.

The resources that are part of this fund have a rate of return significantly below the ones offered in the market. Thus, this allows the fund to finance housing at a much lower cost than what would be offered by private lending institutions. Nowadays, this fund offers an interest rate of 6% per year, for low-income families, against an interest rate of 13% per year offered by the market, characterizing an indirect subsidy. Besides this indirect subsidy, this fund offers also direct subsidies, which vary depending on the beneficiary’s income level and on the housing unit location.

Graph 3 shows the financing capacity of low-income families to finance the purchase of the RLHU, using the Federal housing finance/leasing programs. Due to the fact that Federal programs are responsible for the great majority of housing finance resources directed to low-income families in Brazil and due to the less significance and fragmentation of the housing finance programs of States and Cities, this research will be limited to the analysis of Federal programs. As can be seen in Graph 3, for families with monthly income up to 3MW, in majority their financing capacity is not enough to purchase the RLHU, being necessary additional subsidies and/or extra family savings to complement the price, which is difficult for this level of income. The programs Carta de Crédito and PSH offer direct subsidies to complement the low-income families financing capacity, which are represented by the arrows in Graph 3, which still not enough to purchase the RLHU, being necessary additional subsidies from State and Local Governments, families’ savings and/or a decrease in the considered housing unit price.

From the presented Federal housing finance/leasing programs, the programs Carta de Crédito and PAR use resources from FGTS, the programs PSH and Crédito Solidário use other funds as source of resources. According to Ministério das Cidades (2006), the resources allocated for financing and subsidies directed to low-income housing were distributed among the Federal programs, in 2006, as follows: Carta de Crédito (79%), PAR (18%), PSH (1%) and Crédito Solidário (2%).

The majority of Federal resources directed to low-income housing is concentrated in the Program Carta de Crédito, which is limited to families with monthly income up to 11MW, followed by the leasing program PAR, which is limited to families with monthly income up to 6MW, and finally by the programs PSH and Crédito Solidário.
which are limited to 3MW and 5MW respectively. Therefore, the program with more allocated resources is the one that is less focused on low-income families.

As demonstrated earlier, the families with monthly income up to 3MW cannot purchase the smallest housing unit through market solutions and, generally, they don’t have enough credit to finance the whole price of an adequate housing unit through the Federal housing finance/leasing programs. The results of this will be demonstrated in the following item, where families with monthly income up to 3MW are the ones with increasing housing necessities. For the families with monthly income of 4MW and 5MW, in general, is possible to afford the smallest housing unit in the formal market through Federal housing finance/leasing programs.

The Performance of the Low-Income Housing Sector, Between 2000 and 2005

The housing sector was not capable of attending the growth in the number of low-income families in the period between 2000 and 2005 in Brazil. During this period, the growth in the number of low-income families was 9,95 million (IBGE-PNAD, 2005), for an increase in the RDH of 1,31 million families (Fundação João Pinheiro, 2005), showing the share of non-attended families in this level of income. However, the relative RDH, which indicates the rate between the RDH and the number of families, has decreased for all levels of income, as can be seen in Graph 4.

However, analyzing the absolute growth of the RDH for all income levels, the families with monthly income up to 3MW were the only ones who had an absolute increase in their RDH, approximately 1,37 million families, while for the other
income levels the RDH decreased. Thus, even though the relative RDH has decreased in the period 2000-05 for families with monthly income up to 3MW, their absolute RDH has increased substantially, even more than the increase in the overall RDH. This means that these families went, probably, to the informal housing market, living in substandard housing and contributing to urban deterioration.

Graph 4, Relative RDH evolution, period 2000-05

In order to reverse this cycle, it is necessary that this problem is faced as soon as possible, both in the supply and in the demand sides. Looking at the demand side and as it was presented earlier is this paper, the low-income families, mainly the ones with monthly income up to 3MW, have the most serious affordability problem.

The Necessity of Increasing Resources for Low-Income Housing Finance

How it was presented earlier, the low-income families are being partially attended. From the new 9.95 million families formed between 2000 and 2005, 1.31 million, approximately 13.2%, migrated to the RDH. The Government was neither able to diminish the number of families who are part of the RDH nor to avoid that new families migrated to it. In this item, it will be estimated the necessity of increasing resources directed to housing finance and/or subsidies to attend low-income families in Brazil.

The first step for developing this estimate is the projection of the increase in the number of low-income families in Brazil, for the next ten years. For this projection, it was run a regressive analysis between the projection of population growth and the number of low-income families, between 1995 and 2015, both collected from the official Brazilian census institute (IBGE), as per Graph 5.
The projection shows that the number of low-income families will be increasing for the next ten years, more sharply for families with monthly income up to 3MW, the ones with the greatest affordability problems. The projection also shows that, even though the number of low-income families is growing for the studied period, the growth rate is decreasing, meaning that fewer families are becoming demand each year.

For this estimate, the additional number of families to be attended each year will be the sum of the following parts: [i] – the elimination of the RDH on a horizon of ten years. The RDH measured by Fundação João Pinheiro (2005) will be divided, in ten equal parts, to be attended between 2006 and 2015 [ii] – to attend the share of the newly formed low-income families necessary to avoid that new families migrate to the RDH. Between 2000 and 2005, 13.6% of the newly formed low-income families migrated to the RDH. Due to the lack of information available detailing the number of low-income families attended by State and Local Governments between 2000 and 2005, as well as the number of these families who were self-financed and those who chose rent as housing solution, for the development of this analysis, it will be assumed that the housing finance resources and conditions that existed in Brazil during this period will be maintained, and will attend the same percentage of families. Therefore, it is admitted the hypothesis that 86.4% of new low-income families formed each year will continue to be attended by the existing resources of the Federal, States and/or Cities Governments, will be self-financed or will rent adequate housing units, being necessary additional resources only for the remaining 13.6%. Graph 6 represents the additional volume of resources necessary to finance the mentioned shares of low-income families.
As can be seen in Graph 6, approximately USD$ 10 billion per year shall be increased in the actual resources offered to finance low-income families until the year 2015, in order to eliminate the RDH in ten years and to attend the considered share of newly formed low-income families. This represents approximately an increase of three times of what is being actually offered by the Federal Government to finance and subsidize housing for low-income families. Moreover, approximately 53% of the increase in resources shall come as direct subsidies, due to the greater number of families with monthly income up to 3MW in the composition of the RDH and in the formation of new families in Brazil.

Noteworthy is the fact that housing problems hardly are solved by means of one single solution. Normally, diverse alternatives shall be used together, such as a bigger involvement of State and Local Governments, incentives to increase families’ long term savings, changes on sector regulation, development of solutions for increasing supply and decreasing the price of adequate housing units in the formal market, among others.

The developed analysis tried to estimate, in the light of the housing finance programs currently offered for low-income families by the Federal Government in Brazil, of the necessities of these families and of the sector behavior between 2000 and 2005, the necessity of increasing the volume of offered housing finance resources to eliminate the RDH of the low-income population on a horizon of 10 years and to attend the considered share of the growth of these families, neither intending to affirm that the simple increase of resources will be the solution of the low-income population housing problem nor that the responsibility of solving this problem is only of the Federal Government.
Conclusion

Housing affordability is a major issue in Brazil. The low income of the majority of Brazilian families, the price of an adequate housing unit in the formal market and the limited access to housing finance have contributed to a situation of increasing number of families living under substandard conditions, on the outskirts of metropolitan areas, contributing to urban deterioration. Even with deep interest rates and direct subsidies under Federal programs, the lowest income population, mainly for families with monthly income up to 3MW, still not capable of purchasing an adequate housing unit in the formal market. These families are, then, dependent on complementary subsidies, which can come from Federal, State and Local Governments, and/or on ways of reducing the price of an adequate housing unit in the formal market.

One way for reducing the price of low-income housing units, besides productivity gains, is the reduction of taxes, which are responsible for a significant part of housing price in Brazil. According to Souza (2006), the estimate of the incident taxes on low-income housing units in Brazil is approximately 28% of its price, against the average tax burden of 11.5% of the Brazilian productive sector and 25.5% of the construction formal sector as a whole.

The Federal housing finance programs directed to low-income families in Brazil show great diversity and overlapping objectives and conditions, such as: type of subsidies, target population, income compromising limits, financing limits, housing price limits, interest rates etc., functioning of different and independent forms, even though, in their majority, they search to attend the same population. A better homogenization and specialization of these programs in specific levels of income, mainly for levels of income up to 3MW, and a better leveraging of the conditions demanded for financing, could bring better efficiency to the system in attending the housing necessities of low-income families.

The number of low-income families has presented the greatest growth rates in relation to the other levels of income. Therefore, the Brazilian RDH has been growing steadily, mainly in the segment of families with monthly income up to 3MW. The projection of the growth of this population, for the coming years, indicates that a differentiated treatment shall be given to them, preventing that their RDH takes greater proportions. On a first moment, it becomes necessary to stop the growth of their RDH, by attending the share of their annual growth that tend to migrate to the RDH, and, on a second moment, evolve to eliminate their RDH.

Discussing the real necessity of resources to attend low-income families in Brazil is a complex and controversial issue, due to the diverse interpretations that can exist in relation to the population shares to be financed and the financing values to be considered. In the found results, regarding the necessity of increasing resources for financing and subsidizing the low-income population, it was verified that, the
resources offered would have to be significantly increased in order to attend the growth of this population and to eliminate their RDH.

However, the FGTS, as the main source of housing finance for the low-income population in Brazil, has limits determined by the number of workers regularly employed in the formal market and by their average wage. In face of this, the necessary increase in financing resources discussed in this paper will hardly come from this limited fund. Therefore, it becomes necessary that the Federal Government involves other participants to increase the offer of resources directed to housing finance and subsidies, such as, for example: promote a bigger involvement, with financial contribution, of State and Local Governments; promote and incentive the increase in the participation of the market in financing housing for, at least, part of the low- and medium-income population, diminishing the range of income levels that Governments shall attend; and stimulate the increase of long term savings, which can be used to finance housing for families in this level of income.

On the other hand, the FGTS, with indirect subsidies that are far below the market interest rates, makes it unfeasible for private lending institutions to finance housing in the same levels of income covered by the FGTS. Thus, currently, private lenders limit their mortgage lending to large loans for high-income customers. To increase the resources directed to finance low-income families, besides improving the integration and efficiency of the three levels of Government, it is important to provide incentives for the housing finance market to expand and move down-market, covering, at least, part of the low- and medium-income families currently attended only by the Government, as well as to reform the Federal housing subsidy system in order to make it more transparent and efficient, increasing housing affordability and allowing a broader participation of housing finance private institutions.

For increasing long term savings directed to housing finance, the experience of Chile could be a reference for Brazil. According to Pardo (2001), in the Chilean system, due to the scarcity of subsidies, the housing finance institutions select families for housing finance/subsidy based on the amount of accumulated savings of each family, rewarding those families that have made the greatest savings efforts. People become indeed motivated to save for purchasing their own housing units. In Brazil, the FGTS is a compulsory saving system, however, this system gives no incentives for families to accumulate savings above the ones it already collects and it covers only the workers employed in the formal market, leaving outside the workers in the informal market and the ones that have their own businesses. A housing finance/subsidy selection system linked to a spontaneous savings program could increase the resources available to finance low-income families by incorporating contributions of workers that currently do not contribute to the FGTS.
References


