

HOUSING DEMAND, TENURE CHOICE AND HOUSING POLICY IN BRAZIL

DEMANDA HABITACIONAL, ESCOLHA DAS CONDIÇÕES DE OCUPAÇÃO DA MORADIA E POLÍTICA HABITACIONAL NO BRASIL

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ABSTRACT

This paper analyzes the main determinants of tenure choice in Brazil in formal and informal housing markets. Logit and Multinomial Logit models with several specifications are used to test the household's tenure choice behavior taking demographic, social, economic and locational factors as dependent variables. The main source of information is the Brazilian Census Bureau (IBGE) 2005 National Household Survey (PNAD) National Household Survey (PNAD) microdata. The probability of ownership is higher among non-afrodescendents, man-headed households and public servants. The poor, the young, recent migrants and single women with young children have higher probabilities of renting or becoming owners in informal settlements. Wealth and life cycle variables such as age, household size and marital status are good predictors for formal ownership. Education enhances the probability of being in the formal housing markets, either as a renter or an owner.

RESUMO

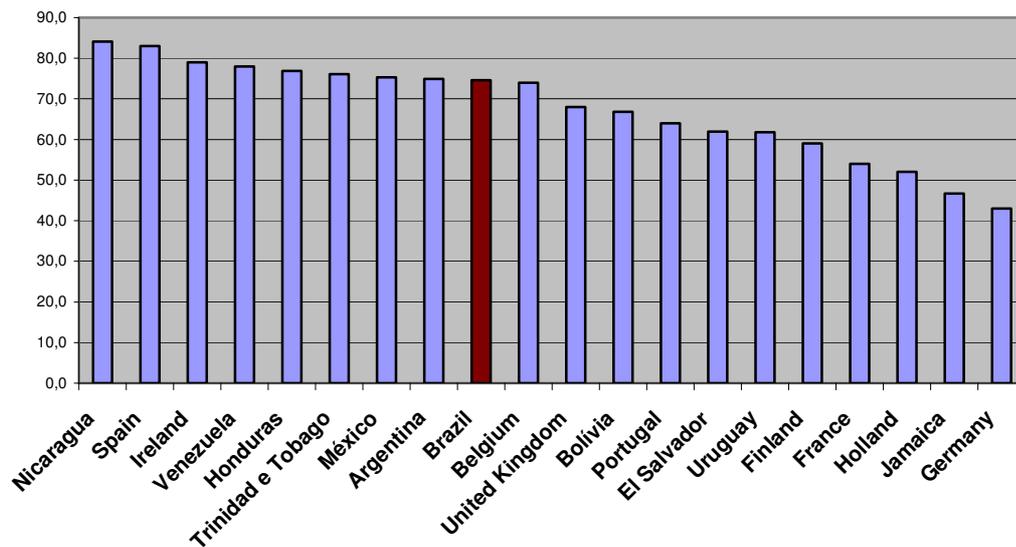
O artigo analisa os principais determinantes da escolha das condições de ocupação da moradia (*tenure choice*) no Brasil, em mercados habitacionais formais e informais. Para testar o comportamento das famílias no que diz respeito à *tenure choice* foram utilizados modelos *logit* e *multinomial logit* com diversas especificações, usando características demográficas, sociais, econômicas e locais como variáveis dependentes. A principal fonte de informação são os microdados da Pesquisa Nacional de Amostra por Domicílios (PNAD) 2005 do IBGE. O artigo mostra que a probabilidade de ser proprietário no mercado habitacional formal é maior entre os brancos, os homens chefes de domicílio e os servidores públicos. Os pobres, os jovens, os migrantes recentes e as mulheres chefe de domicílio com filhos pequenos possuem probabilidades mais elevadas de alugar ou de se tornar proprietários em assentamentos informais. A riqueza e as variáveis de ciclo de vida são bons preditores para proprietários formais. Um maior nível educacional aumenta a probabilidade de ter acesso ao mercado habitacional formal, seja como locatário ou como proprietário.

1. INTRODUCTION

In Brazil, like in other Latin American countries, the governmental housing policies have emphasized the promotion of homeownership as the best way of satisfying the housing needs of the population, assigning renting an inferior status. In developed countries several studies boast the positive impacts of homeownership on children, neighborhood conditions and civic participation. There is also a huge body of literature stressing the importance of self-help housing to promote homeownership among the urban poor in Latin America.

Housing is both a consumer and investment good. Besides being a basic human need, housing usually corresponds to the main asset in households' portfolio all over the world. In Brazil housing accounts for 30% of the total stock of physical capital. However, housing tenure conditions vary deeply across countries, irrespective of income patterns, region of the globe and levels of development. In Brazil homeownership ratio is 74, 4%, very close to Argentina (74, 9%), Mexico (75, 3%) and Belgium (74%) and just slightly above the numbers for US (66,2%), but behind Spain, where roughly 83% of households are homeowners. On the other hand, in countries with very different stages of economic development such as Germany and Jamaica homeownership ratios can be quite similar, around 45%.

Graphic 1 – Homeownership in Selected Countries in Latin America and Europe

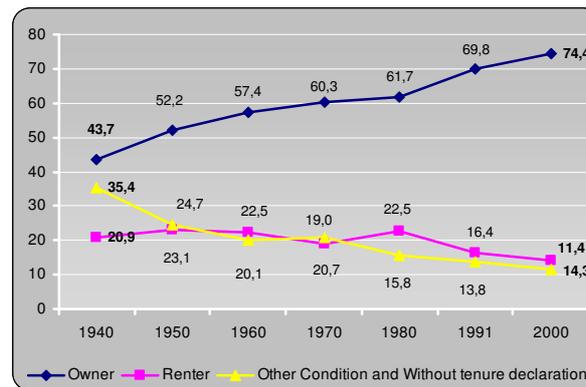


Source: Cepal, IBGE and European Housing Statistics, 2002

Despite the efforts of housing ministries and national housing banks to promote homeownership in Brazil and in the rest of the developing world, relatively little is known about the households' preferences regarding tenure choice and housing demand in these countries. Analyzing tenure conditions in developing countries we can find a multiplicity of housing solutions, that include homeownership and renting in formal housing markets, squatting and renting in informal settlements up to the occupancy of rent-free housing, ceded by relatives and employers.

Graphic 2 shows the change in tenure conditions occurred over a period of 60 years in Brazil, when ownership rates increased over 30 percentage points, followed by a decrease in rental housing and other tenure arrangements.

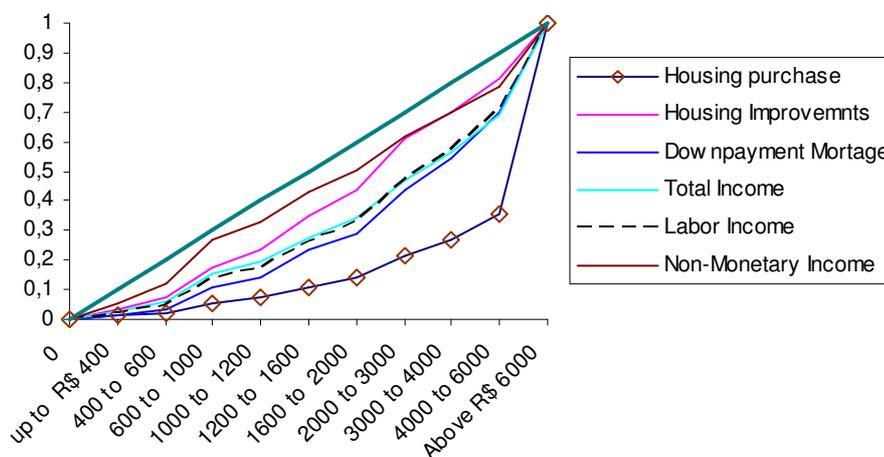
Graphic 2- Brazil- Tenure Condition of private dwellings urban and rural 1940-2000



Source: IBGE- Statistical Yearbooks based on Demographic Census- 1940-2000

In Brazil, expenses with finish housing purchases and mortgage downpayments are even more unequally distributed than labor income. However, expenses with improvement in housing conditions are very well distributed among all income classes. This characteristic of the consumer spending in housing in Brazil shows the opportunity for the implementation of housing microfinance programs for progressive housing. The fact that down payment expenses are even more unequal than total income distribution might be an indicator of credit constraint to the poor in Brazilian housing markets.

Graphic 3- Selected Household Expenditures per income bracket (in R\$)



Source: The authors, based on IBGE 2003 National Budget Survey (POF)

This study tries to elaborate on the following issues: 1) what are the driving forces behind the housing tenure choice of households?; 2) what are the tenure options faced by households either in developed or developing countries? ; 3) do poor households have tenure choice or squatting and precarious rental and sharing arrangements in informal settlements are the only options open to them to meet their housing needs? ; 4) what kind of housing policies should be promoted by the government in order to meet housing demand?

Specifically, this paper intends to analyze the main determinants of tenure choice in Brazil in formal and informal housing markets using micro-econometric techniques. By modeling the tenure choice behavior of the Brazilian households the paper could contribute with several

insights over the consumers' preferences in the housing market, helping the government in the design of housing policies better adapted to the household demand and income level.

2. SURVEY OF THE LITERATURE ON TENURE CHOICE

There is a vast literature on tenure choice, dealing primarily with the US and other OECD countries. In developed countries studies housing tenure is usually classified into renting or owning in formal housing markets, desconsidering any kind of informality. However, as Englund et al. (2005) pointed out, this own-rent dichotomy is just a simplification for analytical purposes. In fact, housing tenure can be seen as a *continuum* of property rights over land and structure, even in developed countries, and actual tenure rights may be influenced by zoning and other urban legislation, rental agreements, length of stay, private and customary laws, among others.

One of the earliest works on tenure choice is Kain and Quigley (1972), that measure the effects of spatial segregation and racial discrimination on black and white home ownership differences in Missouri. Their study shows that blacks pay more than whites for housing of equivalent quality and that blacks, single females, larger families and women-headed households are less likely to own. Li (1977), using a logit model to explain tenure choice in Boston and Baltimore demonstrate that income, family size, age and race of the household head are the primary determinants of homeownership. Rosen (1979), King (1980), Henderson and Ioannides (1983) and Goodman (1988) stress the importance of the user cost of owning versus renting, the tax laws and portfolio considerations of housing as both an investment and consumption good to explain tenure choice. Blackley and Follain (1983) conclude that the net effect of higher expected inflation is a decrease in the cost of housing, leading to higher ownership rates and higher investment in housing. Linneman and Wachter (1989) conclude that even in well-developed capital markets, the presence of borrowing constraints adversely affects the homeownership propensities. On the other hand, Deaton (1992) and Neri, Carvalho and Nascimento (2000) state that individuals with liquidity and borrowing constraints can accumulate housing and real estate assets as a buffer-stock against uncertainty.

Iwarere and Williams (1991), show that permanent income, housing prices, wealth, and demographic variables exert the most dominant forces on housing tenure. Ioannides (1987), also concludes that wealth and homeownership are positively correlated, with wealth resulting in higher mobility for renters and lower mobility for owners. Rothenberg et al. (1992), King (1980) and Ermisch et al. (1996) suggest that tenure choice and housing demand are simultaneously determined. Gibb (2000), claims that tenure choice may also be simultaneously determined by housing location, not just demand.. Coulson (1998) find that being an immigrant has a substantial negative effect on homeownership but that this effect dissipates over time. Painter et al. (2001) indicate that endowment differences in income, education and immigrant status largely explain the homeownership gap between latinos and whites in L.A..

Although in developed economies the available tenures are typically renting or owning, there is a need for further distinction of tenure status in developing countries. In the formal market of developing countries the choice continues to be between owning or renting. However, in these countries, there are several informal tenure arrangements that include: home ownership through squatting or the purchase of illegal subdivisions; renting a bed, room, house or piece of land or share with kin or relatives. The literature stresses that those who live in informal tenures are typically poor and that their tenure choice is frequently reduced to self-help construction or renting in a clandestine subdivision or even rent-free or sharing arrangements (Gilbert, 1993; Necochea, 1987; Cocatto, 1996). Coulomb (1988) wonders whether the poor even have a choice or are forced into rental accommodation because there is no other alternative open to them. Edwards (1990) claims that available tenure choice is an increasing function of income and that

people with lower incomes have fewer alternatives. However, this author found no direct correlation between tenure choice and social class or income groups because households with the same level of income choose different forms of tenure and *vice versa*. Green (1988, p. 251), states that "although choices can only be made within the constraints which determine what is available, where and at what price, even the most disadvantaged section of the population usually has more than one alternative to choose from". Van Lindert and Van Westen (1991), analysing housing shelter strategies of low income groups in Bamako and La Paz argue that both the "choice" and "constraint" arguments can apply to different social categories within the same income bracket. In Bamako, some households without financial constraints to secure homeownership chose to continue renting. In La Paz, many of *conventillo* inhabitants prefer to remain in this centrally located rental accommodation than to become owners in the periphery.

Daniere (1992) examines the determinants of tenure choice in Cairo and Manila and extended tenure options to include squatting as a third choice, besides owing and renting. The author indicates that family size, education, income and mobility are powerful forces explaining tenure choice. Grootaert and Dubois (1988) concluded that stage in the life-cycle and mobility are the two prime determinants of tenancy status in Ivory Coast. Similarly, Arimah (1997), states that income, investment motivation for ownership, number of children, house head gender, life cycle-variables, duration of stay in the city and access to land on the basis of ethnic qualification are the main determinants of housing tenure in Ibadan, Nigeria.

Jacobs and Savedoff (1999) use 2 models to evaluate the determinants of tenure choice in the Panama. In the first model households choose between owing or renting, while the second model classifies households as buyers (finish housing), renters or builders (progressive housing). Their results show that life cycle variables influence the decision between owning or renting, whereas choosing between buying a complete housing unit or progressive building it, depends on income and assets levels. Similar conclusions are reached by Koizumi and McCann (2006), also studying housing tenure in Panama. These authors develop a series of log-linear models in which the rent-buy models are extended to include plot purchasing for future building as a third tenure possibility. They conclude that the extended models perform better in identifying which household characteristics are associated with a particular tenure option. Their results suggest that the age of household head and the number of economic dependents are the key factors to explain choice between renting or buying a dwelling. On the other hand, education and income levels explain whether the household purchases a plot to build or a complete dwelling unit.

Following a legacy left behind by Turner (1968), the literature agrees on the important role played by informal land sub-markets in the supply of ownership alternatives for the poor. However, Miraftab (1997), analyzing data from Guadalajara, observes that the poor cannot be aggregated into a homogeneous group based on income only and that homeownership in informal settlements will not benefit all, arguing in favor of broadening the scope of housing policies to include renting and sharing as important shelter options for the poor. Coccato (1996), based on research conducted in 3 informal barrios of Resistencia in Argentina, also finds that rentals and sharing increase the number of choices for those who cannot buy, and for those who are in search of job opportunities. Meanwhile, renting also provides a means of income generation, or financing for poor owners. Finally, homeownership may not be a priority for many people, besides reducing mobility.

Gilbert (1993, 160) writes that Latin American governments "encourage owner-occupation, sacrificing other forms of housing tenure on the altar of the favored option", which limits the shelter opportunities available, causing reduced standards of living for the poor. For this author, to ignore rental housing is simply irresponsible and renting must be recognized as both a respectable and a necessary housing option. Even so, most government policies are still at early stages regarding rental housing in most developing countries (Coccato, 1996). The World Bank

(1993, 15) stated that "diversity of the supply is the key for a successful housing sector". Similarly, Hansen et al. (1988), Van Lindert and Van Westen (1991) and Rakodi (1992,) advocate that housing policies must be aimed at all sub-markets and a wide variety of housing options should be available to every family.

While studies on tenure choice in the developed world deal only with formal owning and renting, in the developing world informal subdivisions, squatting, and renting of informal properties play a major role in providing housing for the poor. Hence, any study of tenure choice in Brazil must allow for these different categories of tenure as must any future policy considerations.

3. METHODOLOGY¹

In the paper we have used Logit and Multinomial Logit Models with different specifications to study the determinants of the tenure choice in Brazil, taking demographic, social, economic and locational factors as independent variables. The Multinomial Logit Model is an extension of the Logit Model used to classify discrete or categorical variables with more than 2 states. The dependent variable includes the housing tenure choice, both in formal and informal sectors.

The data comes from the Brazilian Census Bureau (IBGE) 2005 National Household Survey (PNAD). To analyze housing tenure choice in Brazil we have selected our sample based on an extended concept of urban areas, that includes the 3 types of urban sectors as classified by IBGE (urbanized urban areas, non-urbanized urban areas and isolated urban areas) plus rural areas of urban extension, that correspond roughly to the urban fringe. Weighting microdata to be representative of the country, our sample covers 44,949,283 households.

Conditioned to the availability of the PNAD variables we have used information on the dwelling mode of occupancy, land property rights and sector type to define the tenure categories. Informality in the housing markets can be captured either by lack of well-defined property rights (squatters) or by non-compliance with building codes and other urban regulation (slums)². Based on the above variables 4 different tenure status were defined: 1) Formal owners: owns the house, owns the land and is not located in a substandard area; 2) Formal Renter: Rents or rent-free outside substandard area; 3) Informal Owners: owns the house but not the land or has other tenure condition such as encroachment (squatters), owns in a substandard area (slum dweller) or both and 4) Informal Renter: rents in a substandard area.

Table 1 shows the absolute frequencies and percentages for housing tenure conditions. Formal owner is the most frequent tenure status (almost 30 million), while informal settlers account for only 7% of our sample.

Table 1- Tenure Conditions in Brazilian Urban Areas - 2005

Tenure Condition		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Formal Owner	29,993,897	66.7	7.9	7.9
	Formal Renter	8,067,093	17.9	19.6	92.5
	Informal Owner	2,907,590	6.5	7.1	99.5
	Informal Renter	191,112	0.4	0.5	100.0
	Total	41,159,692	91.6	100.0	
Missing	System*	3789591	8.4		
Total		44,949,283	100.0		

*Source: The authors relied on 2005 IBGE PNAD microdata, * it includes rent-free and other tenure conditions*

¹ For more details about the methodology and results see an extended version at this paper available at <http://www.worldbank.org/urban/symposium2007/>

² The best proxy for slums and other similar informal settlements are the sectors classified by IBGE as substandard areas, that encompass a group of 50 dwelling units or more, undisputed and recently squatted, without authorization, privately or publicly owned, laid out in a scattered and dense manner and lacking essential public infrastructure services, also known regionally as *favelas*, *mocambos* and *alagados*.

We have classified the determinants of tenure choice into four main blocks of variables: 1) Life Cycle and Household Characteristics; 2) Wealth and Permanent Income; 2) Social Vulnerability and Credit Constraint and 4) Location variables. Life Cycle and Household Characteristics block includes: Age of the Household Head in years, Household size and Marital Status. The Wealth and Permanent Income Category includes: *Per capita* income, Household income, Years of schooling of Household Head and a Wealth proxy. Social Vulnerability and Credit Constraints are proxied by: Gender of the Household Head, Migrant, economic dependency and labor market status. The location variables used are: Metropolitan areas, Type of municipality and Macro-Regions. We have constructed a proxy for household wealth based on housing conditions characteristics and access to durable goods. We have assumed that the absence of proper housing conditions implies a reduction of 1 point in our proxy of wealth for each desirable attribute that is missing. To measure the degree of housing adequacy we relied on the definition of adequate housing that UN-Habitat uses to Monitor Target 11 of the MDGs which must meet the following conditions: Safe drinking water, Proper sewage, Electricity, Structural Durability and sufficient living space. Access to durable goods increases like fridge, freezer, television, washing machine, computer or internet and the number of bathrooms increases wealth.

Our sample comprises married couples in 63.5% of the cases and 53.8% of the household heads were non-african descendents. Migrants account for 47.9% of the entire sample: 7.2 % with less than 4 years in the municipality, 5.8% with 4 years up to 9 years, and 34.9% living for more than 10 years in the same city. Public servants, a proxy for stable condition in the labor market, account for 5.2% of the total number of household heads.

Table 2 shows some descriptive statistics of the continuous variables used in the regressions.

Table 2- Descriptive Statistic of the Continuous variables used in the Regression

Statistics	Age (Years)	Household Size (person per household)	Economic Dependency (head income/total inc.)	Schooling (Years)	Household Income (R\$)	Household <i>Per Capita</i> Income (R\$/person)	Wealth
Mean	45.83	3.62	0.65	6.96	1654.07	572.31	5.36
Median	43.75	3.41	0.67	6.86	991.16	300.70	5.40
Std.Deviation	15.90	1.91	0.33	4.60	2431.28	1000.87	3.13

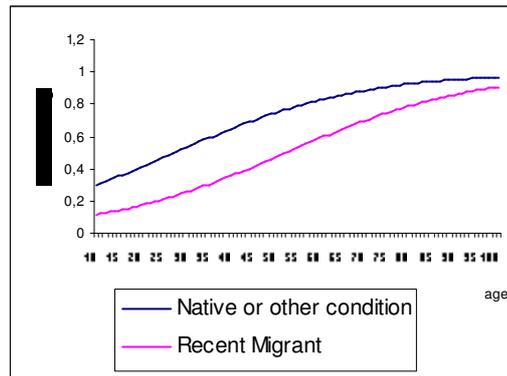
Source: the authors, based on 2005 IBGE PNAD microdata

4. RESULTS AND DISCUSSION

We begin the analysis by presenting the results of the traditional dichotomic model of housing tenure choice, that is, owner or renter, with no more detailing concerning housing informality. We can see that this model presents a reasonable adjustment, with a correct forecast for 70.6% of the cases: 75.7% for owners and 56.1% for renters.

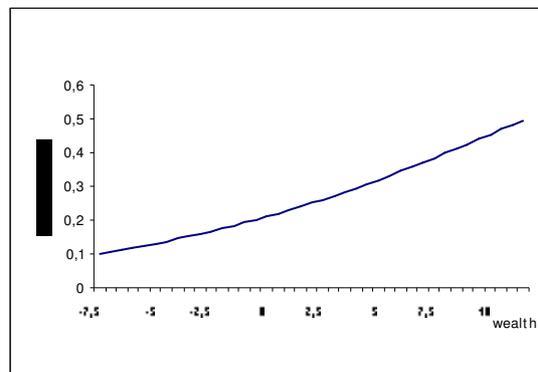
The life cycle variables such as age, marital status and household size show a good adjustment and the expected signs. The age variable presents a positive coefficient, reflecting the effects of life cycle, where an increase in age increases the probability of homeownership. Notice that the longer the time of residence in the municipality the higher the probability of homeownership, with the negative impact of being a migrant dissipation over time. Graphic 4 shows the positive effects of age and negative effects of recent migration (less than 4 years in municipality) over the probability of homeownership.

Graphic 4 – Impacts of Age and Migration on Homeownership



Married couples and household size positively affect the homeownership probability, and family size increase the probability of becoming a homeowner. This results shows that point life cycle variables are quite important to explain household's housing tenure choices. Wealth also has a positive impact over homeownership, as we can see in the graphic below.

Graphic 5 – Impact of Wealth on homeownership probability



Current income, despite having statistical significance, is not as relevant from an economic point of view, as is wealth to explain tenure choice in Brazil. Education, on the other hand, presents a negative sign, what is contra-intuitive. However, when we qualify information over housing informality, education has a positive impact over the probability of becoming an owner in formal housing markets. Concerning vulnerability in the labor markets, we can observe that public servants and employers have a positive sign over the probability of becoming a homeowner. Quite surprisingly, for formal employees this effect is negative. Women-headed households with children under 14 will have a negative impact over the probability of homeownership. Another contra-intuitive result is the fact that non-afrodescendents head of households will have a smaller homeownership probability when compared with blacks and mulattos. Again, this result is due to a non proper discrimination between formal and informal owners, and shows the need for a better distinction between housing sub-markets. Location variables are significant and present the expected signs: living in metropolitan areas or large cities, decreases the probability of homeownership. A Regional dummy for North region shows that the probability of homeownership increases in less developed regions. Conversely, in the Midwest, the most dynamic region of the country, homeownership presents a negative sign.

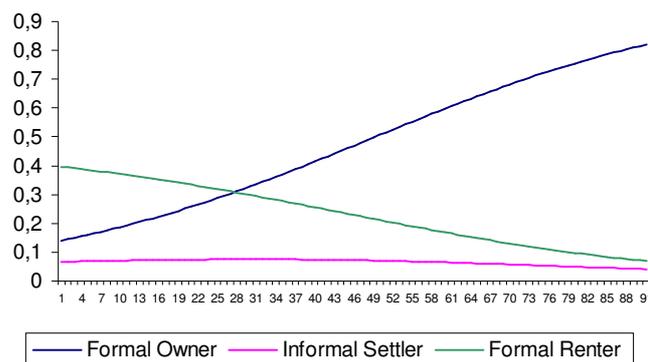
In the next two Multinomial Logit Models we try to identify the impacts of housing informality on the tenure choice of Brazilian households. These models help us to clarify some contra-intuitive results over expected signs of the dependent variables like race and education over the probability of homeownership. In the first Multinomial Logit Model we allow a trichotomous dependent variable, where we make a clear distinction between formal ownership, formal renting

and informal settlements (either squatters or slum dwellers). Life cycle variables such as age of household head, married couples and household size increase the probability of becoming a homeowner either formal or informal, as compared to rental markets.

Graphic 6 presents the impact of age in tenure choice decisions in the trichotomus model, showing that an increase in the age of the household head increases the probability of owning and decreases the probability of renting in formal housing markets. However, the impact of this life cycle variable is smaller to explain the probabilities of living in a informal settlement.³ Wealth increases the probability of owing and renting in formal housing markets, but with a negative correlation with housing informality. This results show that the poor households have fewer opportunities in the housing market and must rely mainly on informal settlements to satisfy their needs, confirming the results well establish in the literature. Again, like in the previous model, income variables, albeit representative, are not good predictors of tenure choice.

An employment in the public sector increases the probability of becoming a homeowner in formal housing markets and has a negative impact on the probability of becoming a informal dweller. Vulnerability variables such a gender and race present the expected signs: being a afro-descendent and a single mother with young children increases the probability of living in a informal settlements.

Graphic 6 - Effect of Age of Household over tenure choice in formal and informal housing markets

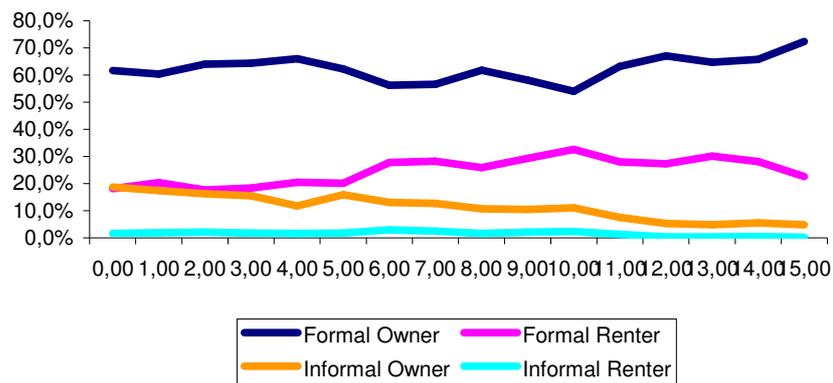


Living in a metropolitan area or in a big city decreases the probability of formal homeownership and increases the probability of becoming an informal dweller, showing that housing informality is a typical metropolitan phenomena, corroborating Morais, Cruz and Oliveira (2003). The regression also shows that higher educational levels increase the probability of renting in formal housing markets.

With a more detailed Multinomial Logit model, where we distinguish between 4 categories of tenure choice and qualify informal settlers into informal owners and informal renters the main results or the previous models were kept, like the high importance of life cycle variables and small impact of current income to explain formal homeownership. Renters in informal settlements are among the poorest segments of the Brazilian population, even when compared to informal owners. Non-afrodescendents have higher probability of having access to formal housing market either through ownership or renting. An increased level of education positively affects the probability of renting and owning in formal housing markets.

³ For further details on the probability of becoming a slum dweller in Brazil see Morais, Cruz and Oliveira (2003).

Graphic 7- Observed Impact of education on tenure choice



5. CONCLUSIONS

This study sought to analyze the tenure choice behavior of Brazilian households, based upon IBGE 2005 PNAD microdata in order to derive some conclusions for policy making. The main results show that wealth is a good predictor for formal ownership and that current income, albeit statistically significant has very limited impact on tenure choice decisions. Life cycle variables such as age of the household head, marital status and household size increase the probability of formal homeownership. Considering this results, policy makers in Brazil, who have always design housing policy according to current income levels, might create some kind of housing program that takes explicitly into account households point in the life cycle, such as incentives to first homeownership or subsidies to rental housing for young people, for instance.

More vulnerable households such as the poor, the afro-descendents or single women with children under 14 years old have a higher probability to be in the informal sector, showing that they have limited tenure choice. The inclusion of informality in the analysis improves the quality of the forecasts and changes the sign of the impact of afro-descendents in homeownership. The effect of education on tenure choice is significant, but the sign of the impact depends on the specification of the dependent variable. Education enhances the probability of being in the formal housing sector, either as a renter or an owner. Recent migration has a negative impact on homeownership, but this negative impact dissipates over time.

Generally, the forecast performance of the extended Multinomial Logit Models, that include informal tenure arrangements in the dependent variable, was superior to the simple Logit dichotomous owner vs. rent model. Even if the models perform quite well to explain tenure behavior in the formal sector, in the informal predictions are quite poor. If we restrict our sample to metropolitan areas the predictive power of the models for the informal sector increases.

One possible sequence of this study could be try to estimate separate models for each metropolitan area or even estimate tenure choice at intra-city level, taking into account location and tenure choice. Vulnerability, credit constraints and property rights and tenure security variables need further detailing and refining, because they are not well capture in PNAD. Another interesting study could be the dynamic analyses of tenure choice based on the pseudo panels constructed from PNAD series, so that we can take into account the effect of inflation on tenure choice and on the user cost of owing versus renting. The effects of tenure insecurity over tenancy decisions can also be better captured on a dynamic framework, as perceived tenure security increases over time, if land remains unclaimed for a long time. The economic obstacles to the formation of new households can also be object of interesting studies in the future.

To conclude, one general recommendation of the paper is that policy makers should not focus

exclusively on owner-occupied housing as the best housing solution, but that a wider range of housing options with different modalities, prices, qualities and locations should be available to Brazilian households, from which they can choose the solutions that fits better their housing needs. In this sense, rental housing can offer good housing solutions for young people in search of employment opportunities and newly arrived migrants, with the importance of rental markets to alleviate housing shortage increasing in urban agglomerations and fast growing urban areas. Furthermore, policy makers should give more attention to variables such as wealth and income distribution, household composition and life cycle variables when designing housing policies and programs, if they want to promote economic efficient and social inclusion in the Brazilian housing markets.

6. REFERENCES

- ARIMAH, B. (1997) The Determinants of Housing Tenure Choice in Ibadan, Nigeria. *Urban Studies*, Vol. 34. 105-124.
- BLACKLEY, DIXIE and FOLLAIN, "Inflation, Tax Advantages to Homeownership and the Locational Choices of Households," *Regional Science and Urban Economics*, 13,
- COCCATO, M. (1996) *Alternatives to Home Ownership: Rental and Shared Sub-markets in Informal Settlements*. Thesis, McGill University.
- COULSON, N. (1999) Why are hispanic and Asian-American Homeownership rates so low? Immigration and other factors. *Journal of Urban Economics*. 45: 209-227.
- COULOMB, R. (1988). Rental Housing and the Dynamics of Urban Growth in Mexico City. In: Gilbert, A. (ed.). *Housing and Land in Urban Mexico*. San Diego: Center for US-Mexican Studies, 39-50.
- DANIERE, A. (1992). Determinants of tenure choice in the third world: An empirical Study of Cairo and Manila, *Journal of Housing Economics* 2: 159-184.
- DEATON, A. (1992) *Understanding Consumption*. Oxford University Press.
- EDWARDS, M. (1990). "Rental Housing and the Urban Poor: Africa and Latin America Compared", In *Housing Africa's Urban Poor*. Amis, P. and Lloyd, P. (Eds.) . Manchester: Manchester University Press, 253-272
- ERMISCH, J. F., J. Findlay and K. Gibb (1996) The Price Elasticity of Housing Demand in Britain: Issues of Sample Selection. *Journal Of Housing Economics* 5:64–86.
- ENGLUND, P., KIM, K., MALPEZZI, S. and TURNER, B.. (2005) Housing Tenure Across Countries: The effects of Regulations and Institutions. International Meeting of the American Real Estate.
- GIBB, K (2000) Modeling Housing Choice and Demand in a Social Housing System: The Case Of Glasgow, *New Economics Papers*.
- GILBERT, A. (1993). *In Search of a Home: Rental Housing in Latin America*. London: UCL Press Limited.
- GOODMAN, A. C. (1988), An econometric model of housing price, permanent income, tenure choice and housing demand. *Journal of Urban Economics* 23(1):327-353
- GREEN, R. K. (1998) *Finding a home in a frontier city. The dynamics of housing tenure in Santa Cruz Bolivia*. PhD Thesis. London University College London.
- GROOTAERT, C., DUBOIS, J., (1988). Tenancy Choice and the demand for rental housing in the cities of the Ivory Coast, *Journal of Urban Economics* 24 pp. 44-63.
- HENDERSON, J.V. and E.Y. IOANNIDES (1983) A model of housing tenure choice. *American Economic Review*, 73(1):98-113.

- IWARERE, L.J. and J.E. WILLIAMS (1991) A Micro-Market Analysis of Tenure Choice using the Logit Model. *The Journal of Real Estate Research*, 6(3):327-339.
- JACOBS, M., Savedoff, W. D. (1999), There's more than one way to get a house: *Housing Strategies in Panama*, Inter-American Development Bank.
- KAIN, J. and J. QUIGLEY (1972) Housing market discrimination, home-ownership and savings behaviour. *American Economic Review* 62:263-277.
- KING, M.A. (1980) An Econometric Model of Tenure Choice and Demand for Housing as a Joint Decision. *Journal of Public Economics*, 14:137-159.
- KOIZUMI, N., McCann, P. (2006), Living on a plot of land as a tenure choice. *Journal of Housing Economics*.
- LINNEMAN, P., WACHTER, S., The impacts of borrowing Constraints on homeownership, *AREUEA Journal*, Vol.17, No 14, 1989.
- MIRAFATAB, F. "Revisiting Informal Sector Homeownership: The Relevance of Household Compositions for Housing Options of the Poor." *International Journal of Urban and Regional Research*. Vol 21(2): 303-322
- MORAIS; M. P., CRUZ; B, O. and OLIVEIRA, C. W (2003). Residential segregation and social exclusion in Brazilian housing markets. *Texto para Discussão 951* IPEA, Brasília.
- NECOCHEA, A. (1987) Los allegados: una estrategia de supervivencia solidaria en vivienda. *Medio Ambiente y Urbanización*, Vol. 6.
- NERI, M., CARVALHO, A.; NASCIMENTO, M. (2000) Ciclo de Vida e Motivações Financeiras. *Ensaio Econômicos EPGE/393*.
- RAKODI, C. (1992). Housing Markets in Third World Cities: Research and Policy into the 1990s. *World Development*, Vol. 20, No 1, 39-52.
- ROSEN, H. (1979) Housing decisions and the U.S. income tax: An econometric analysis. *Journal of Public Economics*, 11:1-23.
- ROTHENBERG, J., GALSTER, G., BUTLER, R., ANDPITKIN, J. (1992). *The Maze of Urban Housing Markets*. Chicago: Univ. of Chicago Press.
- TURNER, J. (1968). Housing Priorities, settlements partners and urban development in modernizing countries. *Journal of the American Institute of Planners*. Vol. 34:6.
- VAN LINDERT, P. And WESTEN, (1991). A. Household Shelter Strategies in Comparative Perspective: Evidence from Low-Income Groups in Bamako and La Paz. *World Development*, Vol. 19 1007-1028.
- WORLD BANK (1993). *Housing: Enabling Markets to Work*. Washington DC: The World Bank.