

## **Factors Related to Internal Migration in Brazil: how does a conditional cash-transfer program contribute to this phenomenon?**

### **Extended Abstract**

Studying the phenomenon of migration and its implications is of paramount importance not only for understanding the functioning of the labor market, but also the functioning of society in general. However, to understand this process, it is important to address its determinants. In developing countries, two causes can be emphasized: regional disparities (Borjas, 2004; Cooper, 1994) and adverse social conditions (Dedecca and Cunha, 2004). In short, people migrate from poor regions to rich regions in order to improve their economic and social conditions. As the Bolsa Família Program (BFP) has contributed to the decline in regional disparities and to improve social conditions, it can be argued that it is possible that it is influencing individuals' decisions to migrate.

In the last two decades, Brazil has undergone profound changes, among them the reduction in income inequality and poverty alleviation. Soares (2006) showed that, in the middle of the 2000s, Brazil has achieved the lowest income inequality level since the 1970s, with the bulk of the drop attributed to social programs, especially since the 1990s. Part of the literature indicates that the Bolsa Família Program (BFP) is mainly responsible for the fall in inequality from 2003, the year of its implementation. The BFP was created from the unification of other social programs, with the aim of eradicating poverty in Brazil. According to data from the Ministry of Social Development and Fight Against Hunger (MDS), the PBF currently serves more than 13 million families.

We can highlight three changes that should be taken into account in recent years: first, the increasing number of families headed by women. On the one hand this may sound good, because as Resende (2006) postulates, a smaller percentage of families headed by women may be associated with greater poverty. However, according to Gama (2012), data from the National Household Survey 2009 show that, in the total number of families benefited by PBF, approximately 80% were headed by women. Since most of the female-headed households are single-parent, we should bear in mind the consequences of this new phenomenon, as it influences the likelihood of a family being poor and therefore eligible to receive the benefits of the program, as well as it can influence the decision to migrate.

Second, the increase in female labor market participation which affects the economic decisions of households and also is connected to the increase of female-headed households. Third and last, specifically with regard to migration, the growth of average level of education in Brazil can contribute to a reduction in mismatched migration because most educated individuals observe conditions at the destination in a more informed way, which reduces the cost of migration and the probability of that migration worsens their situation. The increase in the average education of the population also has a social contribution; e.g. more educated parents are more likely to invest in children's education (Appleton and Mackinnon, 1993). The decision to migrate is usually taken for the same reasons: individuals aspire to improve their economic conditions, have greater access to education, or are forced, either by crises or natural disasters (Borjas, 2004; Azcona, 2009; Dustmann and Glitz, 2011 ). Thus, migration can be considered an investment in human capital, and it is expected that migrants are more educated and younger than non-migrants.

There is not a consensus whether the decision to migrate should be treated as individual or family. Here, similarly as in Mincer (1978) and Borjas (2004), migration is considered a family decision. Within this framework, the concept of tied movers and tied stayers becomes important, since in many cases women move to follow their partners, even if it leads to a drop in their income, i.e., despite individual gains are not sufficient to lead them to migrate, the gains are familiar. The woman should not necessarily be the tied mover, but due to gender discrimination in Brazil, men have the highest remuneration in the couple.

Return migration, defined as individuals who left their place of birth (or origin locality) and after some time decided to return, has grown considerably in recent years in Brazil. This decision can be understood as an optimal decision of the migrants in their life cycle: they migrate to acquire knowledge and returns to the place of origin, because this new knowledge gained there will be more appreciated (Borjas, 1994). Another reason can lead individuals to return to their place of origin: after migrating they can conclude that the prediction was inaccurate and the return becomes a way to correct this mistake.

Poor regions may lose their workers to richer regions, which offer higher wages, a process known as brain drain (Eggert et al., 2009). Dustmann et al. (2010) and Mayr and Peri (2008) argue that return migration may lead to a fall in this process or even turn this situation into a brain gain, since policymakers provide the right incentives for individuals to return. In Brazil, studies on return migration are recent. Cunha and Baeninger (2005) and Ramalho and Silveira Neto (2009) assert that in Brazil most migrants return are destined to the Northeast.

In order to achieve the objectives proposed in the paper, we apply a hierarchical logit model, under the assumption that the probability of workers migrate differ among the municipalities. In multilevel or hierarchical analysis, the dependent variable is measured at the lowest level of disaggregation (level 1) and the explanatory variables can be specified on the first level or at higher levels (Fontes, Simões e Hermeto, 2006). Based on Tabachnick and Fidell (2007), we highlight two advantages of applying a hierarchical model: no need for independence of errors, and avoids the so-called ecological fallacy, which occurs when interpreting aggregate results at the individual level, confounding individual effects with aggregate effects. When estimating the probability of migrating in certain locations while controlling for individual characteristics, the methodology has the advantage that variables that are defined at different levels of hierarchy can be combined into a single model.

Data used are from the 2010 Brazilian Demographic Census, conducted by the Brazilian Institute of Geography and Statistics (IBGE), and comprise a sample of individuals (level 1) and municipalities (level 2). The sample was restricted to individuals who were between 21 and 65 years, since the purpose is to assess migrants who made the decision to migrate based on economic incentives. The sample consists of 11,789,858 individuals, consisting of approximately 48.5% white, 51.4% women, mean age is 39.1 years and the majority of individuals (42.9%) have no education or have less than eight years of schooling. Furthermore, only 11.4% of the sample had completed higher education. Altogether, we have 5.565 municipalities in Brazil.

Independent variables at the first level are: years of schooling, experience, age, dummy for race, dummy for gender, family income, marital status dummy, dummy for gender of the household head and status of beneficiary of the Bolsa Familia Program. At the second level we use: average schooling, the ratio between the average income of the richest 20% and poorest 40%, per capita income and percentage of municipal income

from government transfers. With respect to migration, we considered migration between municipalities, both intrastate and interstate. Migrant is a person who lives in a different place of birth and moved to the current place of residence at most five years. A return migrant is that individual who lives in the same municipality that was born, but that has done some migratory movement in the last five years. Individuals residing for more than five in the same municipality are considered native.

Expected results are: first, migrants are positively selected with respect to observable characteristics, in other words, are more educated and receive higher wages, and positively selected with respect to unobservable characteristics. Second, it is expected that the Bolsa Familia Program to reduce the likelihood of an individual migrate due to social and regional improvements, which mean retention effects. Third, it is expected that the receipt of the benefit increases the probability of return migration, because, due to the improvements brought about by social and regional program, individuals may conclude that the reasons that led them to migrate in the past (search for economic progress) can now be obtained from the place of origin. Finally, given that most of the benefits is intended to the Northeastern states (Silveira Neto and Azzoni, 2008) it is expected that the effect of the program on migration is stronger in the municipalities of this region.

## REFERENCES

- APPLETON, S.; MACKINNON, J. **Education and Health in LDC's**. University of Oxford, 1993.
- BORJAS, G. J. The economics of immigration. **Journal of Economic Literature**, v. 32, 1667–1717, 1994.
- BORJAS, G. J. **Labor Economics**. New York: McGraw-Hill, 2004.
- COOPER, J. M. R. MIGRATION AND MARKET WAGE RISK\*. **Journal of Regional Science**, v. 34, n. 4, p. 563–582, 1994.
- CUNHA, J. M. P.; BAENINGER, R. Cenários da Migração no Brasil nos anos 90. **Cadernos do CRH**. Salvador, vol. 18 nº 43 - jan./abril 2005.
- DEDECCA, C. S.; CUNHA, J. M. P. da. Migração, Trabalho e Renda nos anos 90: o caso da Região Metropolitana de São Paulo. **Revista Brasileira de Estudos de População** (Impresso), Campinas, v. 21, n. 1, p. 49-66, 2004.
- DUSTMANN, C.; FADLON, I.; WEISS, Y. Return Migration, Human Capital Accumulation and the Brain Drain. **Centre for Research and Analysis of Migration**, n.13, 2010.
- EGGERT, W.; KRIEGER, T.; MEIER, V. **Education, unemployment and migration**. Working Paper, University of Paderborn, CIE Center for International Economics., 2009.
- FONTES, G.; SIMÕES, R. F.; HERMETO, A. M. Urban attributes and wage disparities in Brazil: a multilevel hierarchical model. **Regional Studies**, v. 44, p. 595-607, 2010.
- GAMA, L. C. D. O Programa Bolsa Família pode influenciar a decisão de Migrar? Uma análise para o estado de Minas Gerais. In: XV Seminário sobre a Economia Mineira, 2012, Diamantina. **Anais...** Belo Horizonte: Cedeplar, 2012.

MAYR, K.; PERI, G. Return Migration as Channel of Brain Gain. **Centre Of Research and Analysis of Migration, Discussion Paper Series**, n. 04/08, abril de 2008.

MINCER, J. Family Migration Decisions. **Journal of Political Economy**, v. 86, n. 5, p. 749–773, 1978.

RAMALHO, H. M. B.; SILVEIRA NETO, R. M. Migração de retorno e escolha ocupacional no Brasil. In: VII Encontro Nacional da Associação Brasileira de Estudos Regionais e Urbanos, 2009, São Paulo. **Anais...** São Paulo: **ENABER**, 2009.

SOARES, S. **Distribuição de renda no Brasil de 1976 a 2004 com ênfase no período entre 2001 e 2004**. Brasília: IPEA, 2006.

TABACHNICK, B. G.; FIDELL, L. S. **Using Multivariate Statistics**. 5th ed., Allyn and Bacon: Boston, MA, 2007.