Texto para Discussão

Série Economia

**Family Migration, Child Labor and Poverty
Intergenerational Cycle in the State of São Paulo - Brazil**

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Abstract

This work analyzes the impact of parental migration condition on the work/school probability of children among 10 and 14 years in the State of São Paulo. On the basis of a familial category established in accordance with the combinations of mothers' and fathers' migration condition, we estimate a bivariate probit for boys and girls. The differences of joined and decomposed probabilities through Oaxaca method show that the children of recent migrant couples feature higher probability to work, thanks to their parents' disadvantage in the labor market. In the case of children from monoparental families, migrant mothers' children have greater possibilities to work than those of non-migrant mothers.

Keywords: child labor, family migration, bivariate probit, Oaxaca decomposition
(JEL classification numbers J13, J82, O54)

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1. Introduction

The objective of this article is to verify whether migrant parents' children *vis-à-vis* to those of non-migrant parents improve their living conditions expressed by school/work choice. The study is developed mainly through parents' characteristic analysis, considering the following dilemma: are return of investiment realized by parents at the moment of geographic change and progressive improvement of socioeconomic situation in the destination place transferred to younger children, increasing their probability to study, thus preventing them from early insert into labor market? Or does the onus of family adaptation cost to the new environment, which is explicitated particularly by the fact that parents ignore the working mechanisms of labor market, interferes with the child's study/work trajectory, increasing his/her probability of working and therefore decreasing that of studying?

Individual's early insert into economic activities in detriment of investment on education seriously damages his/her social ascension possibility and causes negative impacts on the distribution of intergenerational income. For this reason, the subject of child labor is intrinsicly related to poverty, being simultaneously a cause and a consequence of the latter. Thus, the problem of child labor trap, capable of perpetuating poverty situation throughout generations, results from the fact that time spent in work diminishes the probabilities of child study, and also debilitates his/her school activity enjoyment.

Economically, besides investment in education, migratory process is a mechanism of social condition reversal of poor region populations. In general, migrant individual moves place expecting to reach better living conditions, a higher level of welfare for him/helself or his/her family. Migratory movement is one of the media through which individual tries to get rid of choices that were not actually made by him/her at all: homeplace and family. If part of the attributes transmitted by his/her family is not appropriate and/or his/her residence location does not offer alternatives for his/her socioeconomic ascension, one may try to reversal this situation looking for another site where his/her abilities may be more valued.[1] That is a personal decision.

From child's point of view, his/her residence location or labor supply is not personal decisions. Thus analysis should affect parents' characteristics and differences betwen origin

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[1] The lack of alternatives to improve the welfare situation in the origin location may be related to the absence of unrestricted access to education, or because society attributed little value to individual's intrinsic abilities.

and destination regions. For extension, the first cut to be carried through for analysing the effects of migration on time allocation of migrants' children between school and work concerns the differentiation of personal decision to migrate *vis-à-vis* the family decision. This distinction becomes important, because family migration determinants are different from individual migration.

Although this work sample is limited to children among 10 and 14 years-old in the State of São Paulo, we believe that the relevance of this Federal Unit – concerning its capability of attracting the major part of internal migration flow in Brazil – justifies this choice and permits an analysis more focused on obtained results.

The present work is structured in 4 sections, apart from this introduction and final considerations. In the former we present the relations between migration and child labor offer, emphasizing the importance of family income. In the sequence we indicate family migration determinants, and their interference in parents' decision as for time allocation of their children between school and work. In section 4 we explain the concept of migrant utilized in this work and the methodological procedures applied. In the fifth section, we present the detailed analysis of child labor in the State of São Paulo through the application of bivariate probit model, according to parental migration condition.

2. Child Labor, Income and Family Migration

Many reasons may lead to child's early insert into labor market, but the main cause pointed out by most economic studies refers to low family income. Thus children's workforce supply is explained through drop of consumption under a minimum level wished by family, which may occur in a higher or lower degree depending on family cycle period.

The *altruistic* theoretical model of Basu and Van (1998) formalizes the matter of child labor by means of two basic axioms – luxury goods and substitution goods. The first axiom deals with children's labor supply family decision[2]. The axiom of substitution goods indicates that firms substitute adult labor for child according to a determined equivalence factor.[3] Thus from a proposition to supply and another to demand, the model proposed by Basu and Van concludes that labor market has multiple balances, in which child works when his/her parents earn low salaries and is saved when the family adults have a high earning.

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[2] According to the authors children insert into labor market occurs from the moment when adults' income drops under a determined subsistence level defined by the proper family. In such cases the child's time destined to leisure and/or school becomes a luxury good for familial unit.

[3] The authors follow the hypothesis that for production there is degree of substitutability equivalence between adults and children ($0 < \gamma < 1$).

Those two balances are logic results originated from both propositions previously indicated; however in economic studies, the empirical assumption of possibility degree of substitution of adult labor for child is practically inexistent[4]. On the other hand, the proposition referring to child labor supply, besides being quite plausible, is largely adopted in specialized literature, treating matters from family current income level and the incertainty of that flow to credit access.

Even before the formalization of child labor supply model made by Basu and Van, the revision of literature on child labor determinants realized by Grootaert and Kanbur (1995) indicated the influence of family income management risk on the decision of child time allocation. It was realized that not only current family income that interfeered with sending children to labor market, but also the perception of the risk to which family is exposed due to income volatility. In this uncertainty context, child labor is part of the strategy to minimize income interruption risk and thus diminish potential impact of adults job lose.

More recently, the theorethical study by Baland and Robinson (2000) analyses the impact of credit market access on the child labor incidence. The authors demonstrate that in the presence of credit market restriction, families choose to intensify child labor degree and end up priorizing present time in detriment of future.

Thus one realizes that the problem of family income and in last instance the poverty environment where child lives is the central focus of specialized literature. Nevertheless the income level possessed by family most of times works as a synthesis variable of several other economic-demographic characteristics, observable or not, such as parental schooling level, color of skin, occupation, size and family structure etc. For this reason, paralelly to strictly monetary matter which indicates in a direct manner whether child is or not inserted in a poor home, parents' characteristics are relevant, once they determine family income and as a consequence interfeere with the decision on children's workforce offer. Thus, the analysis of child labor determinants, besides supply, should focus children family structure.

In the same manner as educational level, parental migration condition is also related to the matter of child labor by means of their earning determination. In Brazil, due to the heterogeneity of regional development, apart from education, individuals utilize geographic deslocation as a mechanism capable of increasing economic ascension possibility. By analysing social mobility in Brazil with data from PNAD/73, Pastore (1979) work shows that migrants' total mobility is about 30% higher if compared to non-migrants. In the total of

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[4] The lack of studies connecting technology and productiveness to child labor is indicated in the text by Basu and Tzannatos (2003).

mobility, the highest participation is attributed to structural component in both groups, although it is more important among migrants[5].

The study by Martine (1980), on the other hand, states that this apparent mobility of migrants would be actually the liquid result of two different and in a way antagonic processes: progressive adaptation of the most able to compete in the local labor market; and systematic evasion of the least capacitated in direction to other locations. Both studies, although they do not agree on the grau de abrangência of the thesis of migrants' progressive adaptation, state that migrants have larger ascendent or descendent mobility than non-migrants.

In this sense, by means of selectivity and adaptation processes, migrants constitute a population different from non-migrant. For this reason, in addition to current variables in income determination, migrants have other characteristics not directly measurable, but they contribute for a higher perception of their earning, especially when observable characteristics are controlled by the education variable. Thus in conformity with specialized literature, which corroborates migrants' positive selectivity it should be, developed relations between migration mechanism and determination of child labor supply.

The effect of residence time on migratory experience occurs both in individual and family levels. Parallel to the fact that family life cycle creates distinct externalities upon migrant family members[6], migratory process also causes impacts on it, interfering with decisions of procreation and labor supply of their members. In this way, the migration opens space to establish diverse types of domestic arrangement of time allocation of its members, also of the children. Besides, difficulty or not of parents' insert into labor market of destination location, brings additional elements to children labor supply decision.

3. Parental migration, Impact on the Trajectory of Children's Life Cycle

From economic point of view, the effort spent in the migratory process is carried out due to the expectation that life standard in the destination location will be better than that experienced in the origin location. Brazilian economic literature referring to migration concentrates mainly on the analysis of migrant adult individuals' income in relation to non-migrants. In general terms, studies confirm migrant's auto-selection through the verification that on average they earn more than non-migrants after variable control. And this difference is

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[5] The author utilizes occupational mobility as a *proxy* of social mobility and utilizing a matrix of *status* transition compares father's and child's occupation.

[6] For example, the fact that parents migrate with or without their child, children's age at the moment of familial displacement or adults' permanence period in destination location in the period of child's birth create distinct externalities upon family members, influencing their income level and child labor incidence.

caused by unobservable characteristics, which generally are associated to *higher ability, lower risk aversion* among others. (Santos Júnior (2002), Silveira Neto and Magalhães (2004)).

Due to the evidence of migrants' positive selectivity, a second conclusion current in literature is that geographic displacement rewards individuals positively, particularly as for the obtainment of a higher income and a better occupation. But this approach generally treats migrants as single people, with no relation to any other individual in the origin location. Decision to migrate, insert into destination location or yet return are based on the proper individual earning, sub intending that migrants do not take into account dependants' and/or relatives' welfare. Thus, individual migrant is not distinguished from the one who made such decision in familial scope. Studies therefore do not focus on the migration impact on spouse's and children's welfare.

The subject of family context in economic literature referring to migration determinants started to be treated in the mid-seventies, with works by Sandell (1975), Da Vanzo (1976) and Mincer (1978), focusing on internal migration in the United States. These studies approach the family migration decision, considering two adults (couple), but not however extending the model to include children explicitly.

The main difference in factors determining family and individual migration is that in the second case not all the members need to increase their welfare so that displacement occurs. In family case, migration imposes that members need to negotiate intra-household losses and gains. Thus, due to implicit cost of bargain process, the result is that family migration return tends to increase less proportionally than the respective costs, which are various and depend on the evaluation of many other factors[7]. For this reason migration literature is unanimous in stating that family is an obstacle to the displacement.

Once considering children's existence, the computation of costs and benefits due to migration becomes more complex. It is possible to state that family migration introduces the intertemporal matter into the trajectory of child's life cycle, referring to a decision made by parents. For a better understanding of parental migration effects on the probability of child work, it is necessary to separate impacts into two groups: short term and long term, depending on how long migrant parents have been in destination location.

In the short term parents should adapt to labor market while child inserts into school life and becomes used to it. If parents are not successful in inserting into local labor market or such insert occurs in a precarious manner – which implicates low earning – the use of children

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[7] Spouse's situation and position in origin location labor market, family size, existence and age of children, etc.

labor becomes an alternative to increase familial income[8]. On the other hand, in the long term, due to migrants' positive selectivity, children of parents living longer in the State of São Paulo may also have inferior work probability to that of non-migrants' children. Paralelly to child labor matter, depending on the family origin and destination location, displacement may also permit that children have a broader access to school, and/or a better quality one. That is to say, successful migration may contribute to interrupt poverty intergenerational transmission.

Due to a number of variables and situations differing migrant from non-migrant family, it is imagined that their probabilities of child labor are also distinct, mainly if we distinguish migratory process between shorter and longer terms.

4. Migrant Concept, Sample and Methodological Procedures

Economic studies in Brazil analyzing differential earnings between migrants and non-migrants generally approach inter-state displacements; therefore they utilize as a concept of migrant the individual who was born in a Federal Unit (FU) different from the one he/she lives in. This definition does not consider how long migrant has lived in destination location, leading both newly-arrived individuals - less than 3 years of residence in destination location - and those who have lived in State for over 5, 10,15 or 20 years to be inserted into the same group.

The fact that this work focuses on child labor in age band from10 to 14 makes the "*old*" migrants' group transfer lower migration costs to children than "*recent*" migrants. Because they did not cope with adaptation costs or have family head positively selected, non-migrant parents' children will constitute the comparison basis of our analysis. Thus, the decision school/work of children whose parents migrated will be made *vis-à-vis* to the same choice of non-migrant parents' children[9]. That is to say, we verify the migration impact on child in terms of school attendance and work supply.

The analysis is not restricted only to migrants born in another state, but also to individuals who are from the state of São Paulo but lived in another Federal Unit and returned to their original state, requiring also adaptation cost. In order to separate short and long term impacts from parents' displacement, we created 4 categories of migrants, according to the period of residence in destination location:

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[8] In the case of idle child, this possibility becomes even more attractive.
[9] Data from Demographic Census do not permit to assume whether children members of migrant families attended schools in origin location, or corresponding school year. Therefore one can not verify whether the child

- Short term migrant (ST): Born in another Federal Unit who has lived for less than 10 years in the state of São Paulo.
- Long term migrant (LT): Born in another Federal Unit who has lived for at least 10 years in the state of São Paulo.
- São Paulo-born returned: has been living again in the state of São Paulo for less than 10 years.
- Non-migrant: all the others, since they have Brazilian nationality.

In the case of children among 10 and 14 years-old, any migration occurred at least 10 years ago incorporates at most the ocurrence of children arrived in the state of São Paulo in an age band inferior to the literacy phase[10]. Nevertheless, we analized such migrant category through the possible long-term impacts, when migrant parents from another State have already gone through adaptation process and remain in the state of São Paulo.

In introducing temporal matter into the impact evaluation of parent's migratory process on children, it is given path to verify whether the problem of adults' adaptation to local labor market is capable of interfering with children's welfare. If we followed specialized economic literature which does not distinguish migrants according to residence period in destination location and yet evidences migrants' positive selectivity, the problematic of children's welfare wouls not be relevant.

However, in verifying rates of child labor and school attendance of children according to his/her guardian's migration condition (Table 1) it is noticed that there are differences, which can not be captured when applying the concept of migrant with no distinction of residence period and origin.

Table 1: Child Labor and School Attendance according to Migration condition of family head – in %

Migration condition of Individual responsible for family	Boys		Girls	
	Child Labor	School Attendance	Child Labor	School Attendance
Non-migrant	2.84	97.57	1.95	97.91
Short-term migrant	3.41	95.35	2.29	95.58
São Paulo-born returned	2.88	96.84	2.37	97.82
Long-term migrant	2.90	96.99	1.86	97.35
Total	**2.89**	**97.22**	**1.95**	**97.57**
São Paulo-born	2.84	97.56	1.96	97.91
Born out of São Paulo	2.98	96.72	1.93	97.06

From: Demographic Census, proper elaboration.

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is in a better situation as for his/her school insert after migratory displacement.
[10] Minimum age for enrollment in Elementary school is 7 years old.

As it may be observed, the migration condition classification of family head permits to view that there is a distinction among children of migrants from another state themselves, and also non-migrants born in the state of São Paulo and the returned, particulalry in the case of girls. In addition, it is concluded that the difference in school attendance among migrants' children – independently of category – and non-migrants' children is greater than the discrepancy verified in relation to insert into labor market[11].

Parallel to the vulnerability potential of short term migrants' children, we made it evident that child labor incidence for boys whose family head has lived in the state of São Paulo for at least 10 years is next to São Paulo-born non-migrants' children, and in the case of girls is smaller. This fact reinforces the hypothesis that the best socioeconomic condition of migrants, after adaptation period, makes their children less exposed to the necessity of supply labor. Nonetheless, this positive selectivity of long term migrant family head does not seem to be sufficient to make school insert of their children with non-migrants' children compatible.

With recent migrants' children, the situation is much more exacerbated, therefore this group is systematically in a condition inferior to the others, particularly in relation to children of non-migrant guardians. Initial data indicate that there is some type of differentiation among groups, not being possible to state whether it is originated: from observable factors (for example, low familial income), or from unobservable factors (such as migrant adaptation and selection process). However, both evidences presented above are indications of the existence of poverty intergenerational mechanisms among migrants.

To distinguish whether the difference of time allocation between children's scholl/work is due to observable factors or migratory process it is necessary to analyze parent's characteristics. In Batista (2006) can be found the difference earning decomposition between migrants and non-migrants parents with children among 10 and 14 years living in the urban area of the state of São Paulo[12]. The author results show that after the application of observable variables control, short term migrant and returned fathers are in a worse off than non-migrants. In contrast, mothers of those same migrant categories are better off than non-migrant mothers. In relation to non-migrant parents long-term migrants, both fathers and mothers, are positively selected.

As far as children are concerned, microdata from Demographic Census indicate the existance of 287,812 children among 10 and 14 years living in the urban area of the state of

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[11] Daughters of São Paulo-born returned parents are an exception.
[12] The author applied Oaxaca method for mincerian income equation of fathers and mothers. In total, eight income equations were estimated (four for fathers and four for mothers) through Heckman's procedure for the

São Paulo and occupy the familial position of child[13]. Distribution between boys and girls is practically equivalent - 50.9% and 49.1% respectively. Most families with children among 10 and 14 anos living in the state of São Paulo are constituted of father and mother. In 17.5% of families the family head has no spouse. In most monoparental families, women are responsible for home maintenance and administration (91.5%)[14].

The observation that migration occurs in a family context may be confirmed in Table 2, which shows residence period of short-term migrant fathers and mothers. Even though it is not possible to investigate whether throughout all residence period in the state, unions between migrants were stable we assume that the fact of over 80% of couples with children aged 10 to 14 years old arrive in the state in the same year is a strong indication that there is a family migration.

Table 2: Combination of arrival time of family head and their spouse in the State of São Paulo

Spouse	Family Head	
	Father	**Mother**
Arrived before	3.9	10.1
- 1 year before	1.7	4.1
- 2 or more years before	2.1	6.0
Arrived in the same year	**82.7**	**81.4**
Arrived later	13.4	8.5
- 1 year later	7.1	2.6
- 2 or more years later	6.4	5.9

From: Idem Table 1.

Nevertheless, although the largest part of migration is of familial type, not always the couple is in the same migrant category. This distinction is relevant for the several possibilities of combination of father's and mother's migration condition interfereer with the impact of familial adaptation on destination location in terms of access to relevant information on local labor market and/or school system. For this reason the sample was disagregated according to different combination possibilities of father's and mother's migration condition, as showed in Table 3.

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correction of sample selectivity problem.

[13] This total refers to sample data and do not consider children living in urban area and working in agriculture, silviculture or fishing.

[14] In total, 15.8% of children are insert in monoparental families which the family head is mother. The portion of approximately 1.7% of children among 10 and 14 years old who were in monoparental families leaded by fathers was excluded from the sample.

Table 3: Combination of fathers' and mothers' migration condition (in %)

Father	Mother				
	non-migrant	ST migrant	returned	LT migrant	Sample
non-migrant	**80.6**	6.9	16.2	32.0	**142.870**
ST migrant	0.9	**73.9**	24.9	1.9	**16.099**
Returned	0.3	4.8	**53.2**	0.2	**2.974**
LT migrant	18.2	14.5	5.7	**65.9**	80.233
Sample	**144.231**	**17.047**	**2.938**	**77.960**	**242.176**

From: Idem Table 1

Data indicate that 75% of couples with children among 10 and 14 years old have the same migration condition, being that this similarity occurs with higher frequency among non-migrants and short-term migrants. The group with larger dispersion is that of São Paulo-born returned which, though it has little more than half of spouses in the same migration condition, shows about one quarter of the group married with short-term migrant parents, and 16.2% married with São Paulo-born non-migrant parents[15].

Besides families constituted by couples, we considered children raised in monoparental homes, which add up to 45,636. In this case there is not the problematics of situational distinction of adaptation or not of one of the spouses, for if the family reference person is short-term migrant or returned, it arises the opportunity for the child to cope with the cost of adaptation to new residence location[16].

Before larger occurance, we established this study sample distinguishing children of two family types:

1. Couple with same migration condition; and
2. Monoparental under mother's responsibility.

This classification will be utilized in the division of children to estimate study/work probability aiming at precising the effects parents migration causes on their children's welfare in the short and long term.

5. Analysis of Children's Probability of Choice Between School and Labor

There are several manners to econometrically modelate child labor supply, which depends particularly on the hypothesis of family decision-making concerning a smaller time allocation[17]. In this work we estimated the child's study/work probability through bivariate probit technique.

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[15] However, the importance of this returned group is limited, for it represents only 1.3% of total family sample.
[16] The situation of lack of spouse also opens the possibility of the couple separation have occurred after family migrated.
[17] Specialized literature on child labor presents several studies to capture child's economic contribution; many of these works are based on Rosenzweig and & Evenson (1977).

This choice is due to its main characteristic of not imposing any specific format on decision making – simultaneous, sequential etc. decision, but assuming that both options are related among themselves in some way. The possibility of any type of relation between study/work decisions derives from the fact that this method is constituted of two univariate probits, estimated in groups, permitting thus that residuals from each regression may be correlated[18]. The form of bivariate probit estimated is given by:

$$Y^*_{1i} = X_{1i} \beta_i + \mu_{1i}$$
$$Y_{1i} = 1 \text{ if } Y^*_{1i} > 0 \qquad (1.1a)$$
$$Y_{1i} = 0 \text{ contrary case}$$

$$Y^*_{2i} = X_{2i} \beta_i + \mu_{2i}$$
$$Y_{2i} = 1 \text{ if } Y^*_{2i} > 0 \qquad (1.1b)$$
$$Y_{2i} = 0 \text{ contrary case}$$

The first binary variable indicates whether the child was enrolled in the school or not, at the moment of Census questionnaire application. The second informs whether the child was working – remunerated or non-remunerated – in the interview week. Empirical analysis permits the simultaneous choice of these two options implicates four different and excluding results: only studies ($Y_{1i} = 1$ and $Y_{2i} = 0$), studies and works ($Y_{1i} = 1$ and $Y_{2i} = 1$), only works ($Y_{1i} = 0$ and $Y_{2i} = 1$) or none of the two ($Y_{1i} = 0$ and $Y_{2i} = 0$)[19].

If both decisions are correlated, we have that both models residual are not interdependent ($\rho = Cov(\mu_{1i}, \mu_{2i}) \neq 0$) and the probability of an option depends on the other probability, being determined jointly. On the other hand, if choices between study and work have no interrelation, probits do not need to be estimated jointly.

Besides coefficients β_1 and β_2, bivariate probit also provides estimation of probability predicted of the four possible combinations indicated previously. Based on these estimates obtained separately for both family types, we calculated the probability differential of work and study of migrants' and non-migrants' children. This procedure utilized a modification of Oaxaca decomposition method applied to bivariate probit estimate[20].

The difference between study/work probabilities of migrants' and non-migrants' children is obtained directly from ($E^*_{m \succ 1} - E^*_{m=1}$) in the case of school attendance and from ($T^*_{m \succ 1} - T^*_{m=1}$) to labor supply for each migrant category in relation to non-migrants[21].

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[18] In addition, bivariate probit does not require validity of proposition known as hypothesis of independence of irrelevant alternatives – Madalla (1983) – as is the case of multinomial logit. This hypothesis affirms that the model probability reason continues the same, independently of the number of choices.

[19] The likelihood function of estimated bivariate probit and the joint density residuals normally distributed are found in Appendix A.

[20] The complete exhibit of the technique may be obtained from Oaxaca (1973).

[21] m index concerns parental migration condition where $m=1$ refers to non-migrants and $m > 1$ indicates the three

In order to decompose the differential of predicted study/work probabilities it is necessary to distinguish the variation portion that occurs due to the alterations of observed characteristics – explicative variables –in relation to that verified thanks to changes in the vector of estimated parameters – unexplained portion. Therefore, the differential of study/work probabilities of migrant and non-migrant parents' children will be calculated as follows:

$$E^*_{m \succ 1} - E^*_{m=1} = \sum_{j=0}^{1} \left[\Pr(Y_1 = 1, Y_2 = j / X_{m \succ 1}, \theta^*_{m \succ 1}) - \Pr(Y_1 = 1, Y_2 = j / X_{m=1}, \theta^*_{m \succ 1}) \right] +$$

$$\sum_{j=0}^{1} \left[\Pr(Y_1 = 1, Y_2 = j / X_{m=1}, \theta^*_{m \succ 1}) - \Pr(Y_1 = 1, Y_2 = j / X_{m=1}, \theta^*_{m=1}) \right] \qquad (2.1)$$

$$T^*_{m \succ 1} - T^*_{m=1} = \sum_{j=0}^{1} \left[\Pr(Y_2 = 1, Y_1 = j / X_{m \succ 1}, \theta^*_{m \succ 1}) - \Pr(Y_2 = 1, Y_1 = j / X_{m=1}, \theta^*_{m \succ 1}) \right] +$$

$$\sum_{j=0}^{1} \left[\Pr(Y_2 = 1, Y_1 = j / X_{m=1}, \theta^*_{m \succ 1}) - \Pr(Y_2 = 1, Y_1 = j / X_{m=1}, \theta^*_{m=1}) \right] \qquad (2.2)$$

where we have: $j = 0.1$ and $2 \leq m \leq 4$

Differential = explained variation + unexplained variation

In equations (2.1) and (2.2), the first sum corresponds to the variation portion that can be explained, and the second concerns the total variation portion that cannot be explained[22]. It is observed that in the explainable portion, parameters estimated for the migrants' children sample $(\theta^*_{m \succ 1})$ remain constant, while observed characteristics are alternated between migrants and non-migrants ($X_{m \succ 1}, X_{m=1}$). It means that the first sum refers to the difference between study/work probability due uniquely and exclusively to the discrepancy between the characteristics of migrants' and non-migrants children[23].

The second sum term in equations (2.1) and (2.2), on the other hand, maintains the observable characteristics of constant non-migrant children ($X_{m=1}$), but permits that estimated

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migrant categories: short-term ($m = 2$), returned ($m = 3$) or yet the long-term ones ($m = 4$).

[22] This decomposition of the differential of study/work probabilities of migrants and non-migrants was obtained by sum and subtraction of terms $\Pr(Y_1 = 1, Y_2 = j / X_{m=1}, \theta^*_{m \succ 1})$ and $\Pr(Y_2 = 1, Y_1 = j / X_{m=1}, \theta^*_{m \succ 1})$ in equations (2.1) and (2.2) respectively. Nevertheless, it is important to indicate that there is another manner of obtaining the decomposition of estimated probabilities differential, where the terms to be summed and subtracted correspond to to $\Pr(Y_1 = 1, Y_2 = j / X_{m \succ 1}, \theta^*_{m=1})$ and $\Pr(Y_2 = 1, Y_1 = j / X_{m \succ 1}, \theta^*_{m=1})$ in equations (2.1) and (2.2). However, the result should not be the same because actually each one of the possibilities is comparing distinct situations.

[23] That is to say, the following questioning is made: "*If migrant parents' children had the same personal, familial and location characteristics than non-migrant parents, what would be the predicted study/work probability of them?*"

parameters $(\theta^*_{m\succ1}, \theta^*_{m=1})$ vary. Thus we aimed at observing in what dimension the *onus of the effect of being a migrant parents' child contributes with the difference of study/work probabilities in relation to the non-migrant parents' child.* This second portion is conventionally known as *discrimination component*, for children with the same attributes have distinct study/work probabilities due to the onus attributed in all characteristics according to parental migration condition. It is useful to recall that such discrimination refers both to the difference of estimated coefficients of explicative variables of both groups, and the intercept difference.

The distribution of the final sample of the study according to gender, along with school attendance and child labor rate for each family type is presented in the following Table 4[24]:

Table 4: Distribution of children, school attendance and child labor according to family type– *in%*

Type of familial arrangement/couple	Total	Boys		Girls	
		Study	Work	Study	Work
Same migration condition	*80.4*	*97.61*	*2.86*	*97.92*	*1.80*
- Non-migrant[*]	51.5	97.95	2.89	98.24	1.87
- Short term migrant	5.6	95.74	3.13	95.91	2.24
- São Paulo-born returned	0.7	97.18	3.23	98.67	1.07
- Long term migrant	22.5	97.30	2.71	97.66	1.58
Mother without spouse	*19.6*	*95.56*	*3.64*	*96.45*	*2.88*
- Non-migrant[*]	11.7	95.93	3.55	96.89	2.78
- Short term migrant	1.2	92.74	3.78	94.02	3.17
- São Paulo-born returned	0.3	95.61	3.80	97.32	4.76
- Long term migrant	6.5	95.42	3.76	96.16	2.92
Total sample	**225.378**	**97.29**	**2.98**	**97.62**	**2.00**

Obs: [*] category to be utilized as comparison basis inside family type.
From: idem Table 1

Data from rates of child labor per family type are high among children whose family head is returned due to mothers without spouse. In the case of couple children, in which both spouses are São Paulo-born returned, it is observed a large discrepancy of boys' and girls' situation of labor supply, once among the first 3.23% of them work, against only a 1.07% of girls.

The explicative variables utilized in estimate were selected based on the bibliographic revision of literature, particularly the most recent studies of Brazilian case, such as Kassouf (1999), Muniz (2001), among others[25].

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[24] To reach the decomposition of the differential of predicted study/work probabilities of the sample children, according to their parents' migration condition, firstly it was estimated boys' and girls' bivariate probit for both family types (total of 16 equations), thus obtaining the predicted study/work probabilities for each bivariate probit. These predicted probabilities were utilized in the differential calculation in explained and unexplained portion after calculation of a new bivariate probit for migrants' children (three categories) utilizing the

Results of bivariate probit for each family type and corresponding predicted probabilities can be found in Tables 5.1 and 5.2.

Table 5.1: Bivariate Probit according to gender - Parents with same migration condition

Bivariate Probit	Non-migrant		ST Migrant		São Paulo-born returned		LT Migrant	
	Boy	Girl	Boy	Girl	Boy	Girl	Boy	Girl
Study								
Age	-0.1199**	-0.1493**	-0.0963**	-0.1011**	-0.2051**	0.1223	-0.0794**	-0.1535**
Color	-0.0375	-0.0609*	-0.0899	-0.0350	-0.1402	0.1307	0.0040	-0.0240
0-9 years siblings	-0.1577**	-0.1085**	-0.0618	-0.1274*	1.1958**	6.1150**	-0.1001**	-0.1176**
15-17 years siblings	-0.0798**	-0.0109	-0.1097**	-0.0383	-0.1629	-0.5347**	-0.0324	-0.0353
Schooling years – father	0.0425**	0.0440**	0.0409**	0.0271**	0.0366	0.0288	0.0289**	0.0301**
Schooling years – mother	0.0528**	0.0476**	0.0372**	0.0256**	0.0984**	-0.0125	0.0339**	0.0324**
RPC – NT*	0.0117	0.0130	-0.0012	0.1270	0.7261**	0.1352	0.0283	0.0455
RMSP	0.0404	-0.0596	-0.1833**	-0.1134	0.4881	-0.2429	-0.0024	-0.0365
% agricultural PEA	0.0046**	0.0044**	-0.0032	-0.0028	-0.0171	-0.0080	0.0045	-0.0016
# inhabitants	-1.72E-07**	-1.54E-07**	-3.57E-08	-2.42E-07**	-3.06E-07	-1.30E-06**	-1.09E-**	-1.28E-07**
IDH-M	1.7471**	2.6536**	-0.0246	0.1429	-8.8340*	11.1391*	0.4834	0.6668
Constant	1.5067**	1.2285**	2.8400**	2.8622**	10.8959**	-7.4759	2.2616**	3.1764**
Work								
Age	0.3155**	0.2977**	0.3154**	0.3555**	0.3731**	0.2693**	0.2595**	0.2687**
Color	-0.0013	0.0503	-0.0138	0.0610	0.0153	-0.4544	0.0763**	-0.0435
0-9 years siblings	0.1665**	0.0585	0.0380	0.1767*	-5.9045**	-6.7987**	0.0414	0.1370**
15-17 years siblings	-0.0360	0.0678**	0.0113	0.0614	-0.2996	0.3920*	0.0252	0.0253
Schooling years – father	-0.0189**	-0.0190**	-0.0014	-0.0339**	-0.0275	-0.0442	-0.0120*	-0.0159**
Schooling years – mother	-0.0153**	-0.0198**	-0.0113	-0.0050	-0.0458	-0.0365	-0.0162**	-0.0048
RPC – NT*	-0.0169	-0.0515**	-0.3642**	0.0326	-0.3262	-0.2120	0.0103	-0.0949*
RMSP	-0.1227**	-0.0946**	-0.2713**	-0.2753**	-7.6835	-0.0455	-0.1309**	-0.1815**
% agricultural PEA	0.0091**	0.0052**	-0.0029	0.0109**	0.0135	-0.0052	0.0048*	0.0114**
# inhabitants	-3.7E-08	0.0000	2.2E-07*	0.0000	7.2E-06	5.2E-07	0.0000	0.0000
IDH-M	-0.1332	-0.2081	-1.9479	2.7172*	1.9798	14.0921*	-1.1148	0.7962
Constant	-5.5566**	-5.4382**	-4.0093**	-8.5310**	-7.6498*	-16.8776**	-4.1399**	-6.0257**
/athrho	-0.2664**	-0.2530**	-0.3073**	-0.3424**	-0.2430	-0.5640*	-0.3624**	-0.2644**
Rho	-0.2603	-0.2477	-0.2980	-0.3296	-0.2384	-0.5110	-0.3473	-0.2584
# Obs. =	58.908	56.422	6.416	6.018	777	783	25.779	24.978
Wald chi2 (20) =	1.656	1.176	255	192	1.012	1.390	467	407
Log. Pseud. =	-106.160	-82.583	-17.648	-14.040	-1.382	-659	-57.474	-43.493
Wald test/ rho = 0								
Chi 2 (1) =	96.92	60.66	23.15	22.50	1.53	3.22	10.28	34.20
Prob. > chi2 =	0.0000	0.0000	0.0000	0.0000	0.2154	0.0729	0.0000	0.0000
Predicted probabilities								
Only stud p(10)	95.29	96.45	92.94	94.11	94.62	97.90	94.85	96.15
Work & stud p(11)	2.64	1.71	2.87	1.90	2.68	0.88	2.37	1.48
Only work p(01)	0.25	0.16	0.48	0.37	0.44	0.12	0.35	0.17
No work or stud p(00)	1.82	1.67	3.71	3.62	2.26	1.10	2.43	2.20
STUDIES	97.93	98.17	95.81	96.01	97.30	98.78	97.22	97.63
WORKS	2.89	1.87	3.35	2.26	3.13	1.00	2.72	1.65

* RPC -NT = familial *per capita* income not provenient from work
** significance level of 5% /* significance level of 10%

explicative variables of non-migrants' children
[25] Appendix B presents the definition of variables utilized in estimated bivariate probit model, followed by statistics for the samples of boys and girls according to the family type to which they belong.

Table 5.2: Bivariate probit according to gender
Mothers in monoparental families under their responsibility

Bivariate Probit	Non-migrant		ST migrant		São Paulo-born returned		LT migrant	
	Boy	Girl	Boy	Girl	Boy	Girl	Boy	Girl
Study								
Age	-0.1724[**]	-0.1806[**]	-0.1164[**]	-0.2213[**]	-0.3959[**]	-0.0093	-0.1720[**]	-0.1384[**]
Color	-0.1038[**]	-0.0402	-0.1314	0.0941	0.8045[**]	0.0319	-0.0154	0.0655
0-9 years siblings	-0.0475	-0.0278	0.0085	-0.1367[*]	0.4798	-0.1982	-0.0362	-0.0658
15-17 years siblings	-0.0515	-0.0526	-0.0739	-0.0143	-0.0616	-0.0773	-0.0769[*]	-0.0284
Schooling years – mother	0.0742[**]	0.0656[**]	0.0427[**]	0.0482[**]	0.1804[**]	0.1091[**]	0.0511[**]	0.0575[**]
RPC – NT[*]	0.1528[**]	0.1112[**]	0.2506	0.0313	1.2283	-0.0748	-0.0072	0.0243
RMSP	0.2004[**]	0.1908[**]	0.1848	-0.0024	0.3366	0.2620	-0.0171	-0.1531[*]
% agricultural PEA	0.0044	0.0020	0.0449[**]	0.0058	0.0842[**]	0.0357	-0.0068	-0.0155[**]
# inhabitants	-2.90E-07[**]	-3.78E-07[**]	-3.79E-08	-4.91E-08	-8.20E-07	-7.63E-07	-1.58E-07[*]	-1.14E-07
IDH-M	2.0399[**]	2.3792[**]	1.3699	1.1161	-2.5370	6.2214	0.6721	-0.9707
Constant	1.7655[**]	1.7864[*]	1.4471	3.2416	6.9996	-3.6590	3.2026[**]	4.2344[**]
Work								
Age	0.3089[**]	0.3210[**]	0.2386[**]	0.4089[**]	0.5588[**]	0.3170[**]	0.2852[**]	0.3143[**]
Color	-0.0097	-0.0132	-0.1040	-0.1032	-0.2651	-0.1717	0.0158	0.0012
0-9 years siblings	0.1287[**]	0.0442	-0.0092	-0.0385	-0.1259	-0.2710	0.1478[**]	-0.0443
15-17 years siblings	-0.0433	0.0949[**]	-0.1783	-0.0047	0.1114	-0.0329	-0.0127	0.0091
Schooling years – mother	-0.0191[**]	-0.0334[**]	-0.0078	-0.0053	-0.0586[*]	-0.0234	-0.0270[**]	-0.0272[**]
RPC – NT[*]	-0.1668[**]	-0.0193	-0.0762	0.0115	-0.0443	-0.2546	-0.0591	-0.1598[**]
RMSP	-0.1283	-0.1132	-0.0335	-0.0661	-0.7297	-0.5763	-0.2236[**]	-0.0338
% agricultural PEA	0.0098[**]	0.0099[**]	-0.0034	0.0143	-0.0223	-0.0110	0.0049	0.0086[*]
# inhabitants	1.64E-08	-4.05E-08	-2.68E-07	-3.47E-08	5.70E-07	3.32E-08	6.60E-08	-6.38E-08
IDH-M	1.1473	0.4794	0.2813	5.3422[*]	-6.0094	10.6018[**]	2.3834	0.6884
Constant	-6.4995[**]	-6.2181[**]	-4.6897[**]	-11.3576[**]	-3.4375	-13.7100[**]	-7.1779[**]	-6.2291[**]
/athrho	-0.3034[**]	-0.2761[**]	-0.4679[**]	-0.1819[*]	-0.0123	-0.9249[**]	-0.3492[**]	-0.2880[**]
Rho	-0.2944	-0.2693	-0.4365	-0.1800	-0.0123	-0.7282	-0.3356	-0.2803
# Obs. =	13.368	13.440	1.367	1.627	340	336	7.387	7.432
Wald chi2 (20) =	557	409	65	89	63.27	95	243.76	208
Log. Pseud. =	-35.602	-29.646	-5.103	-5.038	-666	-826	-22.238	-20.044
Wald test/ rho = 0								
Chi 2 (1) =	51.90	31.05	18.41	2.98	0.0020	5.82	41.95	21.94
Prob. > chi2 =	0.0000	0.0000	0.0000	0.0841	0.9645	0.0159	0.0000	0.0000
Predicted probabilities								
Only stud p(10)	92.88	94.46	89.95	91.56	93.39	93.32	92.40	93.54
Work & stud p(11)	3.05	2.41	2.82	2.67	2.72	3.95	2.97	2.61
Only work p(01)	0.58	0.37	1.12	0.49	0.41	0.91	0.69	0.43
No work or stud p(00)	3.49	2.76	6.10	5.28	3.48	1.81	3.94	3.42
STUDIES	95.94	96.87	92.77	94.23	96.11	97.27	95.37	96.15
WORKS	3.63	2.78	3.94	3.16	3.13	4.87	3.66	3.05

[*] RPC -NT = familial *per capita* income not prevenient from work
[**] significance level of 5%/ [*] significance level of 10%

We realize that estimated rho ($\hat{\rho}$) appears significantly different from zero in practically all bivariate probits, indicating that the unexplained component of child's decision to attend school is related to the unexplained component of the labor supply decision[26].

This result validates the choice of econometric method and reaffirms that both decisions have some degree of association; therefore they should be estimated jointly. However, such non-excluding link between both choices – school and work – does not allow us to establish any causal relation.

Basic results referring to work probability reaffirms specialized literature: chances of working increase according to age, are higher among boys, decrease as parental schooling increases, are influenced by the amount of younger siblings and are especially elevated in monoparental families under women responsibility[27].

Predicted study/work probabilities of boys and girls are not much discrepant of those presented in Table 4. On the other hand, work probability of short-term migrant mothers, with or without spouse, increases. Thus, we can affirm that bivariate probit corrects study/work probabilities for all samples, before we apply the group of explicative variables of non-migrants' children to the estimation of children from the three migrant categories.

Table 6 shows the result referent to the differential of study/work probabilities of boys and girls according to familial typology utilized.

Table 6: Differential of study/work probabilities per family type - *in %*

Family type	ST migrant mother		Returned mother		LT migrant mother	
	Boy	Girl	Boy	Girl	Boy	Girl
Study Probability						
Couple – equal migration condition	-2.12	-2.15	-0.63	0.61	-0.71	-0.54
Mother without spouse	-3.16	-2.64	0.18	0.40	-0.57	-0.72
Work Probability						
Couple – equal migration condition	0.45	0.39	0.23	-0.87	-0.18	-0.22
Mother without spouse	0.31	0.38	-0.50	2.09	0.03	0.27

[*]Positive value indicates that migrants' children probability is higher than non-migrants, and negative contrary value.
From: Tables 5.1 and 5.2.

Results indicate that the largest majority of migrant mother children's (short-term, long-term or returned), independently of family type, have study probability inferior to the children of non-migrant São Paulo-born mothers. While for work probability, two tendencies are observed:

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[26] Exception is the group of returned mothers' children (independent of family type).
[27] Reference to Barros and Mendonça (1990b); Cervini and Burger (1991); Kassouf (1999); Azêvedo, Menezes and Fernandes (2000); Barros and Mendonça (1990a); Muniz (2001).

1) Children of short-term migrant couple possess larger chances to supplylabor.

2) Migrant mothers with monoparental family under their responsibility, independently of residence period in the state of São Paulo, despite the advantage presented in income equation, insert their children into labor market in a larger proportion than non-migrant São Paulo-born mothers.

In order to respond to the matters raised to this extent, the analysis of differential decomposition will be carried out according to the family type into which the child is inserted.

5.1 Parents with same migration condition

The largest part of sample concentrates on this family type 80.4% of children. It is known that both displacements of short-term and returned migrants can be considered of familial order (Table 2), situation which does not apply to long-term migrants. In the case of long term migrant couples, only 28.7% of children among 10 ad 14 years old came from another Federation Unit, the largest majority - 71.3% - was born in the destination location of parental displacement.

This situation results in different probabilities of children work. Table 6.1 shows that long-term migrants' children have less work probability than non-migrants' children. Although the unexplained component, in this situation, is preponderant only in the case of boys, this result is related to positive selectivity of long-term migrant fathers and mothers in destination location.

Table 6.1: Decomposition of Bivariate probit differential
Parents with same migration condition – *in %*

Difference in relation to non-migrants' children	ST migrant		Returned		LT migrant	
	Boy	Girl	Boy	Girl	Boy	Girl
Study Probability	**-2.12**	**-2.15**	**-0.63**	**0.61**	**-0.71**	**-0.54**
Explained	-1.97	-1.62	0.16	0.12	-1.09	-0.89
Unexplained	-0.15	-0.54	-0.78	0.50	0.38	0.35
Work Probability	**0.45**	**0.39**	**0.23**	**-0.87**	**-0.18**	**-0.22**
Explained	0.04	0.10	-0.14	-0.20	0.17	-0.21
Unexplained	0.42	0.29	0.37	-0.67	-0.35	-0.01

Obs. [*]Positive value indicates that migrants' children probability is higher than non-migrants',
and negative contrary value.
From: Table 5.1.

This result reflects the fact that long-term migrants' children do not need to cope with the cost of adaptation to parents' destination location. For this reason, the decision of time allocation of these children between school and work does not suffer any interference so accentuated in the income management risk (Grootaert and Kanbur, 1995) related to

parents' insecurity of finding work or not, or yet of its instability situation, relevant in short term migrants.

Thus, long-term migrants' children ends up benefiting indirectly from choices made by parents, confirming the hypothesis of positive selectivity render higher earnings than the proper São Paulo-born non-migrants (Batista, 2006). Due to its economically superior situation, this family type does not need to supply their children's work in the same extension as São Paulo-born families.

On the other hand, short-term migrants' children show a position of disadvantage before non-migrants' children. Such difference is explained by unobserved component which refers to migration condition, compared in this work with problems of parental adaptation to local labor market.

The results obtained by Batista (2006) referring to income difference of the three categories of migrants and non-migrants indicate that in the case of short-term migrant parents, the advantage of unobserved personal characteristics cannot compensate for the below-average valoration made by market of their respective attributes. For this reason their incomes are inferior in relation to non-migrant parents, and consequently their children have larger probabilities of being early inserted into labor market, when compared to children of non-migrant São Paulo-born parents.

When it comes to children from returned parents, it is observed that the low rate of child labor presented (Table 4) reflects particularly the situation of girls, who have smaller work chances than daughters of non-migrant parents. In this case, parents are also negatively selected in relation to non-migrants, but contrarily to short-term migrants' family, this category seems to discriminate children according to gender, in choosing to direct boys to work and girls to school, once the child labor rate of boys and girls is 3.23% and 1.07% respectively. In both decisions, the unexplained component, the migration condition, weighs more than independent variables.

This choice for school attendance in detriment of work possibility in the case of returned parents' daughters attracts attention, for it is the only case, in this family type, where the difference of study probability in relation to non-migrants' sons is positive. Returned parents' daughters, when compared to non-migrants' ones, show smaller work probabilities and attend school more often, which for its turn does not happen to sons and daughters of long-term migrant parents.

This difference indicates that not always when children are prevented from carrying out economic activities they are directed to school. Positive selectivity of long-term

migrants in location destination prevents to an extent their children from working, but it is not sufficient so that school attendance is higher in relation to non-migrants' children. Besides we noticed that in the case of short and long-term migrant families, the largest part of the study probability difference in relation to non-migrants' children occurs due to observable characteristics of parents and children.

In relation to decomposition, we also observed that the sign of the unexplained component is inverted when we compare children of short and long-term migrants. This distinction reflects the impact on destination location of positive selectivity in the case of long-term migrants and the adaptation matter in the short term ones. Nevertheless, even though long-term migrants surviving to adaptation period are hard-working, skillful and talented, they bear characteristics which do not contribute with school insert or continuity of children's studies, mainly those with low schooling level.

5.2 Mothers in monoparental families under their responsibility

In the state of São Paulo aproximately 16% of children among 10 and 14 anos live in homes without father. Under these circumstances, in general, mothers turn out to be the family main provider, and their earning provenient from work is fundamental to prevent their children from being precociously inserted into work. Due to the lack of a partner with whom share family management responsibility, the proportion of mothers participating in labor market is 22.5% higher than those with a spouse. In total, they make 66% of working mothers, being that the highest participation rate occurs in the category of short-term migrant mothers (68%).

Although the work by Batista (2006) has showed migrant mothers are positively selected in relation to non-migrant São-Paulo born ones, Table 6.2 indicated that this earning difference in favor of the first group does not imply lower probability of their children work in relation to children in the second group[28]. The highest probability of children labor supply whose mothers are migrant cannot be attributed to their difficulty of insert into labor market, but to the occupation position of those migrant mothers.

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[28] Author attributes this result to the fact that a large number of migrant women are domestic servants, whose income cannot be appropriately captured by *schooling years* variable.

Table 6.2: Decomposition of Bivariate probit differential
Mothers without spouse– *in %*

Difference in relation to non-migrants[*]	ST migrant mother		Returned mother		LT migrant mother	
	Boy	Girl	Boy	Girl	Boy	Girl
Study Probability	**-3.16**	**-2.64**	**0.18**	**0.40**	**-0.57**	**-0.72**
Explained	-2.75	-1.37	0.93	0.60	-0.99	-0.83
Unexplained	-0.41	-1.27	-0.75	-0.19	0.43	0.11
Work Probability	**0.31**	**0.38**	**-0.50**	**2.09**	**0.03**	**0.27**
Explained	-0.02	-0.52	-0.21	0.12	0.22	0.25
Unexplained	0.33	0.90	-0.29	1.97	-0.19	0.02

Obs. [*] Positive value indicates that migrants' children probability is higher than non-migrants',
and negative contrary value.
From: Table 5.2.

While the positive difference between work probabilities of children of short-term migrant and non-migrant mothers is maintained by migration condition, in the case of long-term migrant mothers the discrepancy is due to explicative variables. Besides, data show that daughters of long-term migrant mothers do not benefit as much as boys from the fact that they do not need to cope with part of the cost of familial adaptation to destination location. This result is associated to occupational distribution among migrant women. Among short-term migrant mothers, aproximately 40% of those who work do domestic services, against 32% of long-term migrant mothers and yet only 21% of non-migrant ones. As long-term migrant mothers have once been short-term migrants, it is observed that domestic servants' daughters in general end perpetuating their mothers' occupation in a more or less automatic manner.

The type of activity performed by mothers in labor work features important information as for the easiness of their children's early insert; for instance, the type of qualification parents should estimulate in children since early age and yet the possibilities of available employment. In the case of mothers who are domestic servants and have no spouse, knowledge of labor market is easilt applied to their daughters.

When it comes to returned mothers, estimates show that, once more, diferentiate treatment given to their sons in relation to their daughters. This time girls are not prevented from work as boys are. In all categories, the positive differential of girls' work probability is higher in relation to boys', but in the case of returned mothers the discrepancy extension attracts attention.

As for study probability, it is repeated in this case what occurs to most families: except for returned mothers' children, all the others children have lower study chances when compared to non-migrant mothers' children, due mainly to observed characteristics, among

which parental schooling degree should be the most preponderant. However, as in the case of couples with same migration condition, the sign of unobserved portion alternates from negative to positive when one shifts from short to long-term situation. This fact shows that migrant mothers withou spouse also have an income improment, as residence period in destination location increases, so that the disadvantage of their children's study chances is lower, but it does not overcome the negative onus of their low schooling.

Final Considerations

The present work measures short and long-term impacts which parental migration decision causes on the probability of children study/work in relation to non-migrated families. Results showed that in combining the classic variables of child labor determination and the part referring to parental migration decision such as familial context of geographic displacement associated to residence period in destination location, it is not observed such an accentuated discrepancy among the probabilities of migrants' children work in relation to those observed among non-migrants' children.

On the other hand, the decomposition of probability difference of study/work in accordance with the residence period in fathers'/mothers' destination location and yet between the explainable and unexplainable permits a better comprehension of choices between school and work in the context of family geographic displacement. For this reason, this work deepens evidences found in literature of child labor supply by analyzing the costs originated from family migration, particularly as far as children situation is concerned.

In general terms, results indicate that the situation of the family, especially of children, is not indifferent in relation to perspectives of migrant's labor insert into destination location. Thus, depending on the life cycle period where the child is in, the impact of family displacement on his/her study/work trajectory may be positive or negative.

Parallel to the matter of child labor supply, the calculation of the difference of study probability leads to a result unreported by specialized literature: all children of migrant mothers originated from another State, in a monoparental family or not, have lower study chances than those children of mothers from the State of São Paulo. According to this difference decomposition, discrepancy is based on parental observable characteristics, where schooling level is probably the most important one.

The positive sign of the unexplained part of the probability of long-term migrants' children study, including monoparental families, indicates that there is an improvement in relation to short-term migrants' situation, but it is incapable to reversal the disadvantageous

position. It is noted that the positive selectivity of long-term migrants may be capable to contribute with a higher "controlled' earning, which diminished the chances of their children work. Nevertheless, as those children have a lower study probability when compared to the children of parents from the State of São Paulo, it may be said that the improvement in living conditions provided by migration process of fathers/mothers is not integrally transferred to children.

This result meets specialized literature on migration, which indicates that migrants succeed in improving their income and occupational conditions throughout residence period, however we observed that this enhancement is not capable to equalize them to non-migrants. That is to say: income convergence does not occur, for since childhood migrants' children have a lower probability of attending school in comparison with non-migrants' children. In the long term, those children's insert into labor market should occur in a precarious manner, in low-qualified occupations which will hardly mean enhancement in relation to their parents' situation, contributing thus to the maintenance of poverty intergenerational cycle.

The fact that this differential is explained by observable characteristics impedes the conclusion that children of migrants from another State attend school less, due only and exclusively to the fact that they have their school trajectory damaged by migration process. This factor interferes in the short term, when child is also involved in migration, but its dimension is much lower when compared to the onus of main explicative variables, age, color, number of younger and elder siblings, parents' schooling, *per capita* income of non-work and residence location.

The school attendance disadvantage of children of long-term migrant couples, which do not have adaptation costs, reaffirms the importance of parents' human capital, indicating that the latter has a dimension going beyond income generation capacity. Many times, parental schooling interferes in parents' capacity to contribute, so that school-life adversities are easily overcome by children. This result is fundamental so that the strategy of child labor combat is reflected in terms of its short and long term advances, contrasting the problem of income insufficiency in child's present and future capacity to obtain a job as an adult, blocking thus the disadvantage transmission to their children.

Thus, the result reached for long-term migrants clearly indicates that, despite a positive shock in family income, in this case characterized by parental migration, children are not necessarily sent to school or remain there. That is to say, even if children attend school and do not work, which assures their school-life constancy and effective success is beyond family financial problem.

In the present study three matters remain open. It is particularly emphasized the divergence of welfare situation of long-term migrants' children, who have higher chances to be saved from labor supply, but show lower study probability. Although results have showed that this situation is due to observable characteristics, it seems to be important to explore to what extent parental occupational position may influence the school/work choice. We believe that the inclusion of parental occupational position into the discussion referring to children's labor supply and school attendance should contribute substantially with a better comprehension of poverty intergenerational cycle.

The second subject deserving more attention in the future refers to unexplainable factors which contribute to prevent that a higher controlled income of single migrant mothers is not sufficient to reduce the early labor supply of their children. In this work we raised the hypothesis of relevance of mothers' occupational distribution. However this assumption deserves to be analyzed in a more detailed manner.

Finally, this work indirectly emphasizes the importance of using school as a reversal mechanism of poverty intergenerational cycle. In this sense, the school role in the eradication of child labor involves two simultaneous actions: increasing the permanence time of children in school, preventing their insert into labor market in the short term; and effectuating programs of income transference to families, conditioned to children's performance and permanence in school.

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APPENDIX A : Likelihood function and joint density of bivariate probit

The likelihood function of estimated bivariate probit is given by:

$$\ell(\beta_1,\beta_2) = \sum_{i=1}^{N} \{\ln \Phi_2(-\beta_1 x_{1i}, \beta_2 x_{2i}, -\rho) + \ln \Phi_2(\beta_1 x_{1i}, \beta_2 x_{2i}, \rho\rho + \ln \Phi_2(\beta_1 x_{1i}, -\beta_2 x_{2i}, -\rho) + \ln \Phi_2(-\beta_1 x_{1i}, -\beta_2 x_{2i}, \rho\rho\}$$

$$\qquad\qquad\quad \text{I} \qquad\qquad\qquad\qquad \text{II} \qquad\qquad\qquad\qquad \text{III} \qquad\qquad\qquad\qquad \text{I}$$

Being: I. Only studies   II. Studies and works
III. Only works   IV. Does not study or work

The jointlydensity of normally distributed residuals is given by:

$$\phi(\mu_1, \mu_2) = \frac{1}{2\pi\sigma_{\mu 1}\sigma_{\mu 2}\sqrt{1-\rho^2}} \exp\left[-\frac{1}{2}\left(\frac{\mu_1^2 + \mu_2^2 - 2\rho\mu_1\mu_2}{1-\rho^2}\right)\right]$$

APPENDIX B : Description of variables present in bivariate probit

Variables utilized in the bivariate probit estimate of boys and girls are described below:

1) Dependant variables:
-   Study: *dummy* variable indicating whether child (boy/girl) is regularly enrolled in school. Has value 1 when child is inserted into school and zero in contrary case.
-   Work: *dummy* variable indicating whether child (boy/girl) wored remunarated or not in the reference week of application of Demographic Census questionare. Has value 1 when child works and zero in contrary case.

2) Explicative variables:
-   Age: continuous variable indicating child's age, which is period [10,14].
-   Skin color: dummy variable indicating child's skin color.
Skin color = 0 (white and yellow children)
Skin color = 1 (black, mullato and indian children)
-   Father's/mother's schooling: continuous variable indicating father's/mother's schooling level through the number of educational years belonging to period [0,17][29].
-   0-9 years siblings: sum of the number of children among 0 and 9 years present in the child's family.
-   15-17 years siblings: sum of the number of children among 15 and 17 years present in the child's family.

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[29] Aggregation for the group of individuals who attended "*adult literacy*" classes corresponds to the same utilized in parental income equation.

- *Per capita* family income of non work (RPC – NT): total of family income originated from different sources of their members' salaries, divdided by the total of people in the family.
- RMSP: *dummy* indicating child's residence location, has value 1 for metropolitan region of São Paulo and zero for state countryside.
- *% agricultural PEA*: proportion of economically active population working in agricultural activities or cattle-raising in the municipality.
- # of inhabitants: total of inhabitants in the municipality.
- IDH – M: Municipal human development rate.

Boys – sample of same migration condition family

Variables	Non-migrant			Short-term migrant			São Paulo-born			Long-term migrant		
	N	Average	SD	N	Average	SD	N	Average	SD	N	Average	SD
Dummy studies	59.42	0.98	0.14	6.490	0.96	0.20	780	0.97	0.17	26.081	0.97	0.16
Dummy works	59.42	0.03	0.17	6.490	0.03	0.18	780	0.03	0.18	26.081	0.03	0.16
Age	59.42	12.00	1.41	6.490	11.90	1.40	780	11.95	1.42	26.081	12.04	1.41
Cor	59.33	0.19	0.39	6.488	0.48	0.50	780	0.21	0.40	26.048	0.44	0.50
0-9 years siblings	59.42	0.06	0.27	6.490	0.14	0.40	780	0.06	0.26	26.081	0.09	0.34
15-17 years siblings	59.42	0.30	0.52	6.490	0.39	0.62	780	0.30	0.52	26.081	0.39	0.59
Schooling years - father	59.20	7.95	4.30	6.452	4.47	3.76	778	8.16	4.62	25.936	4.90	3.44
Schooling years - mother	59.17	7.71	4.18	6.451	4.80	3.65	779	7.76	4.34	25.936	4.95	3.33
RPC – NT[*]	59.42	36.48	163.4	6.490	10.69	53.65	780	38.68	113.47	26.081	21.19	69.35
RMSP	59.42	0.32	0.47	6.490	0.54	0.50	780	0.27	0.44	26.081	0.69	0.46
% agricultural PEA	59.42	8.21	11.32	6.490	3.80	8.17	780	7.88	10.48	26.081	2.45	6.57
# inhabitants	59.42	2.16E+05	4.02E	6.490	2.66E+05	4.27E+	780	1.52E+0	3.42E	26.081	3.68E+05	4.74
IDH - M	59.42	0.81	0.03	6.490	0.81	0.03	780	0.81	0.03	26.081	0.82	0.03
Valid	58.90			6.416			777			25.779		

N = # of observations / SD = standard deviation / [*]RPC – NT = Familial *per capita* income of "non work".

Girls - sample of same migration condition family

Variables	Non-migrant			Short-term migrant			São Paulo-born			Long-term migrant		
	N	Average	SD	N	Average	SD	N	Average	SD	N	Average	SD
Dummy studies	56.868	0.98	0.13	6.108	0.96	0.20	784	0.99	0.11	25.294	0.98	0.15
Dummy works	56.868	0.02	0.14	6.108	0.02	0.15	784	0.01	0.11	25.294	0.02	0.13
Age	56.868	12.02	1.41	6.108	11.96	1.40	784	11.91	1.39	25.294	12.08	1.41
Color	56.800	0.19	0.39	6.103	0.47	0.50	784	0.20	0.40	25.264	0.42	0.49
0-9 years siblings	56.868	0.06	0.27	6.108	0.14	0.40	784	0.05	0.22	25.294	0.09	0.33
15-17 years siblings	56.868	0.31	0.53	6.108	0.38	0.61	784	0.31	0.54	25.294	0.40	0.60
Schooling years - father	56.690	7.91	4.30	6.058	4.30	3.67	783	7.97	4.58	25.160	4.85	3.38
Schooling years - mother	56.648	7.65	4.19	6.064	4.49	3.48	784	7.73	4.21	25.126	4.90	3.31
RPC – NT[*]	56.868	35.54	146.9	6.108	10.82	59.41	784	28.83	106.53	25.294	22.60	80.74
RMSP	56.868	0.32	0.47	6.108	0.55	0.50	784	0.28	0.45	25.294	0.69	0.46
% agricultural PEA	56.868	8.32	11.44	6.108	3.90	8.21	784	7.80	10.79	25.294	2.46	6.62
# inhabitants	56.868	2.15E+05	4.01E	6.108	2.78E+05	4.35E+	784	1.53E+0	3.41E	25.294	3.60E+05	4.71
IDH - M	56.868	0.81	0.03	6.108	0.81	0.03	784	0.81	0.03	25.294	0.82	0.03
Valid	56.422			6.018			783			24.978		

N = # of observations / SD = standard deviation / [*]RPC – NT = Familial *per capita* income of "non work".

Boys - sample of mother without spouse

Variables	Non-migrant			Short-term migrant			São Paulo-born			Long-term migrant		
	N	Average	SD	N	Average	SD	N	Average	SD	N	Average	SD
Dummy studies	13.4	0.96	0.20	1.377	0.93	0.26	342	0.96	0.21	7.449	0.95	0.21
Dummy works	13.4	0.04	0.19	1.377	0.04	0.19	342	0.04	0.19	7.449	0.04	0.19
Age	13.4	12.08	1.41	1.377	12.11	1.41	342	11.97	1.42	7.449	12.15	1.41
Cor	13.4	0.31	0.46	1.375	0.49	0.50	342	0.28	0.45	7.444	0.46	0.50
0-9 years siblings	13.4	0.40	0.61	1.377	0.57	0.73	342	0.38	0.58	7.449	0.44	0.64
15-17 years siblings	13.4	0.32	0.54	1.377	0.41	0.61	342	0.30	0.59	7.449	0.38	0.59
Schooling years – mother	13.3	7.21	4.17	1.369	4.83	3.78	340	7.22	4.26	7.392	5.02	3.62
RPC – NT[*]	13.4	78.22	190.7	1.377	32.64	120.18	342	93.64	214.5	7.449	47.00	119.
RMSP	13.4	0.41	0.49	1.377	0.57	0.49	342	0.28	0.45	7.449	0.66	0.47
% agricultural PEA	13.4	6.48	10.22	1.377	3.62	7.90	342	8.20	11.41	7.449	3.07	7.58
# inhabitants	13.4	2.74E+05	4.39	1.377	3.10E+05	4.52E+	342	1.45E+0	3.37E	7.449	3.85E+05	4.82
IDH - M	13.4	0.81	0.03	1.377	0.81	0.03	342	0.81	0.04	7.449	0.82	0.03
Valid	13.3			1.367			340			7.387		

N = # of observations / SD = standard deviation / [*]RPC – NT = Familial *per capita* income of "non work".

Girls – sample of mother without spouse

Variables	Non-migrant			Short-term migrant			São Paulo-born			Long-term migrant		
	N	Average	SD	N	Average	SD	N	Average	SD	N	Average	SD
Dummy studies	13.534	0.97	0.17	1.640	0.94	0.24	336	0.97	0.16	7.494	0.96	0.19
Dummy works	13.534	0.03	0.16	1.640	0.03	0.18	336	0.05	0.21	7.494	0.03	0.17
Age	13.534	12.10	1.41	1.640	12.07	1.41	336	12.15	1.38	7.494	12.18	1.40
Cor	13.522	0.29	0.45	1.636	0.46	0.50	336	0.28	0.45	7.488	0.43	0.50
0-9 years siblings	13.534	0.39	0.60	1.640	0.55	0.72	336	0.38	0.53	7.494	0.44	0.63
15-17 years siblings	13.534	0.31	0.53	1.640	0.38	0.59	336	0.32	0.55	7.494	0.37	0.58
Schooling years - mother	13.452	7.26	4.19	1.631	4.89	3.78	336	7.64	4.39	7.438	5.10	3.69
RPC – NT[*]	13.534	79.93	193.4	1.640	30.70	129.12	336	71.07	127.42	7.494	49.39	140.5
RMSP	13.534	0.40	0.49	1.640	0.61	0.49	336	0.30	0.46	7.494	0.66	0.47
% agricultural PEA	13.534	6.56	10.24	1.640	3.41	8.02	336	7.11	10.09	7.494	2.87	7.21
#.inhabitants	13.534	2.71E+05	4.38E	1.640	3.49E+05	4.68E+	336	1.56E+0	3.45E	7.494	3.88E+05	4.82
IDH - M	13.534	0.81	0.03	1.640	0.82	0.03	336	0.81	0.03	7.494	0.82	0.03
Valid	13.440			1.627			336			7.432		

N = # of observations / SD = standard deviation / [*]RPC – NT = Familial *per capita* income of "non work".