THE IMPACT OF CONDITIONAL CASH TRANSFER PROGRAMS ON HOUSEHOLD WORK DECISIONS IN BRAZIL[1]

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Abstract

Conditional Cash Transfer (CCT) programs have become widespread in developing and underdeveloped countries as a way to alleviate current poverty and provide investments in human capital that could lead families to better life conditions in the long-term. The first goal is accomplished when poor families receive money from governments on a monthly basis, as a complementary income source. The second goal is reached by conditioning the cash transfers on certain behaviors, such as visiting enrolling children in school. However, these programs may also have impact on time use decisions within beneficiaries, particularly with respect to time spent working. In this paper, we aim to measure the impact of Brazilian conditional cash transfer programs on children and parents' labor status using the econometric framework of policy evaluation. The usual *probit* and *Heckman* econometric models show that CCT reduces the probability of work for children but not their time spent on labor market, and that the program is more efficient for girls than for boys. On the other hand, parent's labor participation is not affected but their working hours change due to the program. An alternative approach, the propensity score matching, will be performed in order to avoid the biases that might arise from some remaining heterogeneity problems.

1. Introduction

Conditional Cash Transfer (CCT) programs have become widespread in developing and underdeveloped countries as a way to alleviate current poverty and provide investments in human capital that could lead families to better life conditions in the long-term. The first goal is accomplished when poor families receive money from governments on a monthly basis, as a complementary income source. The second goal is reached by conditioning the cash transfers on certain behaviors, such as visiting health facilities,

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immunizing children, and enrolling children in school. However, these programs may also have a huge impact on time use decisions within recipient families, particularly with respect to time spent working. In this paper, we aim to measure the impact of conditional cash transfer programs on children and parents' labor status in Brazil.

Policy makers want social programs to alleviate poverty without causing dependency of beneficiaries to the program. The problem with cash transfers is that when the flow stops, families return to poverty; that is, giving money is a temporary solution. One solution is to stimulate that families use the money that they receive from social programs to invest in family members' human capital, in order to have better opportunities in the future when the transfers stop. It is well known that education is highly correlated with earnings. Thus, conditioning a cash transfer program on some behaviors that represent investment in human capital would be equivalent to a long term policy.

The current conditional cash transfer program in Brazil works as follows: a family is eligible for the program if it is poor and/or if it lives in a poor area; it must also include family members who are children of school age or younger. The government pays a monthly grant to the family, but in order to receive or continue receiving the benefits families have to accomplish some conditionality: their school-age children have to be enrolled and have to prove their school attendance; children have to visit health care facilities to check for nutritional and developmental status; parents need to attend workshops regarding health and healthy behavior, and so forth.

Although those programs are concerned with family long-term investments, CCT programs may influence current family decisions as well, namely how a family allocates activities and resources among its members. In other words, if a child used to work to help provide family income and now he/she has to spend a certain amount of time in school, someone else in the family may have to produce more income. Alternatively, child leisure time may be reduced to allow school attendance, without changing a child's work hours. In theory, CCT programs may affect time allocation decisions for all members of the family, since parents now receive more money to purchase goods and services for the family.

Another aspect of work decisions and cash transfer programs is that when the economic status of the family improves, for any reason, it may find itself ineligible to continue receiving the CCT benefits. In particular, if family members work more, they may earn enough income to affect their program eligibility. In the face of this possibility, parents may choose to work less in order to continue receiving the transfers.

Economically speaking, because benefits are linked to children's school attendance, the relative value (or shadow price) of school increases and the relative values of all other activities performed by children, including work, tend to decrease.

The total effect of the transfers can be decomposed in two effects: an income effect and a substitution effect. The income effect implies that an increase in household resources (due to grants) tends to increase the consumption of all normal goods (such as leisure and education). The substitution effect implies a decrease in the demand for substitutes for schooling and an increase in demand for complementary goods related to school. In general, we would expect to see an increased consumption of notebooks and pencils and – if work and school are substitutes – a decrease in the time that children spend working. However, work and school may not be substitutes, which would lead to ambiguous results of the grant's effect on child labor (Ravallion and Wodon, 2000).

Adult labor supply may also be affected. Considering adult labor supply in a simple static model in which individual utility depends on consumption and leisure, the income effect would lead to reduced time spent on work, because in the presence of cash transfers individuals can afford more of all goods. Nevertheless, in a family labor supply model, time allocation of every member will depend on the value of time of all members. The question now is what happens to other family members regarding work if work and school are substitutes for children.

One possible answer, considering a household acting as a unit, is that when children stop or reduce their work activities, there will be less family labor supply. This would imply that the relative price of work would be higher for the whole family. This would, in turn, lead to an increase in the hours worked by other (non-child) family members. Still, some ambiguity in the final result can rise given the own-income effect of grants in adult labor

supply (Parker and Skoufias, 2000). The final outcome is an empirical matter; it may, in fact, vary from family to family.

2. Evidence from studies of conditional cash transfer programs

One of the first programs with conditional transfers was the Food for Education (FFE) program, implemented in 1994 in Bangladesh. The government provided food such as grains and wheat to poor rural families in a monthly basis. In order to receive the benefits, families had to send their children to school. Families could freely trade the food received through the program for other goods. Evaluating the impact of FFE on child labor and schooling, Ravallion and Wodon (2000) found a positive effect on school attendance and a negative effect on child labor. However, they noted that the decrease in labor time corresponded to a small share of the increase of schooling time, indicating that time dedicated to school was mainly subtracted from leisure and not from work time.[4]

The most famous CCT program is the Mexican PROGRESA (*Programa de Educación, Salud y Alimentación* – Education, Health and Nutrition Program) that began in 1997 and continues under the name of *Oportunidades*. Poor families receive cash transfers on a monthly basis and are required to have their children enrolled and attending school, and they must also visit health facilities to improve the general health status of children and treat or prevent illness.

The transfers are variable and proportional to the number of children, with an upper limit on the value of transfers to avoid increases in fertility rates. Also, transfers related to girls are higher than those related to boys because girls are more likely to drop out of school in Mexico. Transfers increase with the age of the child because as they become older there are more labor market opportunities to tempt them away from school; the transfer increases to keep pace with a youth's increased earning ability. Other components of the total amount of transfers were related to pregnant and nursing women attending medical appointments.

[4] "Child labor" and "child work" will be used interchangeably in this paper; we will not use child labor to mean harmful or dangerous activities or child work to mean not-harmful activities.

For purposes of evaluation, PROGRESA was implemented with an experimental design, which means that treatment and control groups were randomly chosen. Thus, it was possible to accurately evaluate the impacts of the PROGRESA program, and it became the most important reference for program evaluation research of this kind. The Mexican CCT program achieved its goals, increasing school enrollment and attendance and reducing child labor (Schultz, 2001). Regarding parents' labor status, mothers' and fathers' work decisions were not affected by the transfers, it seems, mainly because their program eligibility was determined only once for the following three years and was not regularly re-evaluated (Parker and Skoufias, 2000).

The Brazilian experience with CCT programs started with *Renda Mínima* (Minimum Income) in the city of Campinas and *Bolsa Escola* (School Grant) in Brasília, both in 1995. The programs consisted of cash transfers to guarantee a minimum income level for poor families, conditional on child school attendance. Between 1995 and 1999 other cities adopted the same model of social programming, based on the positive experiences of their predecessors.

In addition, in 1996 the federal government launched, in selected states, a CCT program focused on children living in rural areas and engaged on dangerous work. This program was named the *Programa de Erradicação do Trabalho Infantil – PETI* (the Child Labor Eradication Program). Since it was a program focusing on combating the worst forms of child labor, poor families were required to enroll children in school and pull them out of work to receive the benefits. Also, PETI was combined with *Jornada Ampliada*, a complementary program with activities for children when they were not in school, as a way to prevent labor activities restricting their available time. We need to keep in mind that the Brazilian school day has four to six hours, varying by State and grades, classes being held in the morning or in the afternoon. Consequently, even though children are attending a full school day, they would have time for other activities such as leisure, home chores and work in the labor force.

In April 2001 the Brazilian federal government launched *Bolsa Escola* as a national conditional cash transfer program focused on education[5]. In order to be eligible to receive a transfer, a family had to have a per capita income below one-half of a Brazilian minimum salary (i.e., below the usual Brazilian poverty line) and had to include individuals aged 6 to 15. It was paid 15 Reals (approximately US$ 6) for each child attending at least 85% of school days, with a maximum number of payments for three children per family to avoid incentives for fertility increases.

National *Bolsa Escola* was not supposed to replace the previous programs but be a complementary source of funding. However, for the majority of more than 5,500 cities in Brazil, it was the only program with cash transfer features. Also, its target was different than PETI's target. It was focused only on school attendance, not on requiring that children stop working. While we expect that if children have more school activities they will have less time to work, they may, in fact, have less leisure time while maintaining their work hours[6]. In this case the cash transfer conditional on school attendance will be ineffective in reducing child labor – as indeed was the main result of preceding research.

Both PETI and *Bolsa Escola* were evaluated regarding their effectiveness in achieving their goals. PETI was considered a good program for limiting child labor but, since the main work activities for children are household tasks or work producing goods for their own family's consumption, the program was less effective in reducing the probability of working less than 10 hours a week. Also, although the impact on labor for the beneficiary children was as expected, results for non-beneficiary children were ambiguous, leading to the conclusion that some specialization may have occurred between control and treatment groups (Yap, Sedlacek and Orazem 2001). PETI also may have led to perverse outcomes, leading children to take up hazardous work to make them eligible for program benefits.

Regarding *Bolsa Escola*, ex-ante and ex-post evaluations of its impacts on school attendance and child labor are available (Bourguignon, Ferreira and Leite, 2002; Cardoso and Souza, 2003; Ferro and Kassouf, 2005). The conclusions are all the same: the

[5] In January 2004, the Brazilian government merged four cash transfer programs, including *Bolsa Escola*, in the same administrative / management set, implementing the *Bolsa Família* (Family Grant) program.
[6] Combining work and school is a possibility in Brazil, where a full school day have in general four hours.

program has a big impact on increasing school enrollment – although it is not possible to assess the quality of education received – but it has no influence on child labor. However, the ex-post evaluations used data from 2000 (Demographic Census) and 2001 (PNAD, or National Household Sample Survey), but the program became widespread nationally in the same year, 2001. Also, the National Household Survey (PNAD-2001) asked if individuals were "signed-up for or a beneficiary of" a cash transfer program conditioning on education. Thus, the analysis using PNAD-2001 may have considered as "treated" someone who was not actually receiving the benefits.

It is worth underlining that government publicity about the positive aspects of school - and negative aspects of child work – has increased since then and may help in the declining of children labor market participation rates. Governmental promotion of the program and publicity about its benefits is one example. Non-governmental organizations and foundations that support child labor eradication have also been promoting their activities highlighting the negative aspects and consequences of child labor.

It is also noticeable that, although PROGRESA evaluations were concerned about the response of parental work choices to cash transfers, none of the Brazilian evaluation mentioned this issue. Unlike in Mexico, in Brazil families are evaluated up with respect to their eligibility more regularly, and parents may decide to work fewer hours to avoid being pulled out of the program. They may also choose to reduce their work effort if they consider the transfer as a substitute to their work income.

3. Data and descriptive statistics

The main issue in program evaluation is finding a "good" comparison group. If we have programs with experimental designs in which treatment and control groups are randomly assigned, we can assume that difference between the participants (treatment group) and non-participants (control group) is only their participation in the program. Thus, the differences between their outcomes after treatment (find a new job, school enrollment, children stop working etc) are due to the treatment. However, social programs usually do

not have experimental designs, so we need to find a substitute for the random control group – a "good" comparison group.

Finding a comparison group depends in part on how the program works. CCT programs in Brazil are mostly funded by federal resources, but municipalities are in charge of parts of the bureaucratic process. First, the family has to meet the eligibility criteria: have children in school age (6 to 15 year-old) and monthly per capita income lower than half of a national minimum salary. The eligible family can sign-up for the program, and if their request is approved, they will receive monthly transfers if their children attend at least 85% of school days.

Schools have to inform the Ministry of Education about the attendance of beneficiary students. The Ministry of Education consolidates the information of all Brazilian schools and sends it to the Ministry of Social Development, which orders the payments. The payment is made directly to the beneficiaries through magnetic cards – it works as if the beneficiary had a special bank account for the transfer. Beneficiary can cash their money from Federal Bank tellers, ATMs, Mail Offices and Authorized Retail Stores, so the magnetic cards would work even in the poorest and technological delayed region[7].

The "irregular" part of the process is the selection of the beneficiary families. The selection process is decentralized in the city level. Since families meet the eligibility criteria, cities can vary the processes of publicity, application, selection and approval. In general the Social Development Office is in charge of these duties. The Social Development Office may either send their social workers to poor areas to visit families and offer the program or use another publicity media (like distributing brochures, giving interviews in community radio stations, circulating with "speaker-cars" in targeted neighborhoods) and wait for interested families. If it is the case that municipalities want to reach the program' target population with the lowest cost, the second approach is more likely to be used.

[7] This structure of direct payments is supposed to avoid corruption and deception, as beneficiaries do not necessarily need a third part to "intermediate" the money transfer.

Non-governmental organizations dealing with poverty-relief and educational issues also are engaged providing program information and helping eligible families through the process. Moreover, some people go to their representatives to ask for help to find a job (or meet family consumption needs such as food and money for electricity and water bills), and the city representatives send them to the Social Development Office to check for eligibility and apply for the CCT program.

In spite of differences in the publicity and selection systems within municipalities, the overall strategy relies on the willingness of families in participate. The mother or the father has to apply for and accept the conditions of the program. In this case, the comparison between beneficiary and eligible individuals may omit unobservable characteristics that lead some families to the program but not others, which is known as the "self-selection" problem – that is, some families want to participate while other families choose to not apply.

One way to deal with the self-selection problem that arises from the comparison between beneficiary and eligible groups is limit the analysis to the comparison between individuals who are in the program and individuals who, besides being eligible, applied or signed-up for the program but are not receiving benefits yet, that is, they are waiting for bureaucratic processes. In other words, those who want to be participants, but are not actually receiving the money, can be considered a good comparison group, since they are likely to have some similarities in their unobservable characteristics as those already accepted into the program.

Some issues still arise in using the signed-up as a comparison group. As the program approval is in a first-come-first-served basis – given that the family meet the eligibility criteria – one may claim that persons who are already receiving the benefits "wants to participate more" than people who signed-up later, and the self-selection problem still exists within the treatment and comparison groups. However, after three years of program, all the publicity including TV commercials with beneficiary families telling their stories and how their life is better now that they receive the transfers, a presidential and representatives' elections with politicians explaining how they improved the life of the poorest persons through the CCT program, we can argue that CCT was very well

diffused in Brazil in 2003[8][9]. Actually, there was already some program saturation, since by late 2003 *Bolsa Escola* was paying monthly stipends to over 8.6 children from 5 million families. As a comparison, Schwartzman (2005) asserts that 12 million 5-17 year-old persons were living with less than one dollar per day in Brazil in 2004. Thus, we consider that eligible signed-up families are a good comparison group for beneficiary persons.

The 2003 Brazilian annual household survey, *Pesquisa Nacional por Amostra de Domicílios* or PNAD-2003 included two questions regarding conditional cash transfers. One of the questions asked whether the person was signed-up for a cash transfer program conditional on education, and the other asked whether the person was actually receiving benefits in the form of cash transfers of such a program. The PNAD-2003, unlike previous PNAD surveys, allows us to separate those who want to be a beneficiary but are not yet, that is, those who are waiting for an approval to start receiving benefits, from those who actually are beneficiaries and receive their transfers monthly. These two questions allow us to measure the impact of Brazilian conditional cash transfers on both child and parent work decisions through the analysis of treatment (eligible persons who are receiving benefits) and comparison (eligible persons who are signed-up for the program and still waiting for approval) groups.

The PNAD is a nationally representative sample survey. We focus this analysis on individuals between 6 and 15 years of age who belong to families with per capita income levels below half of one Brazilian minimum wage (or below 120 Reals in September 2003).[10] Furthermore, we limit our sample to those who declared themselves signed-up for (comparison group) or a beneficiary of (treatment group) the CCT program and have complete information (that is, children that have their mothers and fathers' information). This leaves us with a sample of 14,434 individuals (children and adults combined).

In this section we will describe children's activities such as work, school enrollment and home chores. Descriptive information about parents' labor characteristics and household

[8] In Brazil, even in poor areas, the majority of households have a TV.
[9] During election times, some politicians want to have the votes of poor people claiming that they are responsible for some social programs (or for the access to existing social programs), even if they are not.
[10] This corresponds to approximately US$ 41 at the September 2003 exchange rate (R$ / US$ = 2.92).

will also be presented. While descriptive statistics provide an important guide for further analysis, their main limitation is the inability to control for aspects that may influence the analyzed variable – for instance, differences in labor force participation rates between treatment and control groups are influenced by family background, which may not be adequately controlled in a specific analysis.

3.1 Descriptive information about eligible children

Brazilian educational CCT programs targets families with children from 6 to 15 years old, and each family is able to receive grants for up to three children. In the PNAD-2003 dataset it is possible to distinguish for which children the benefit is received. We can see, from Table 1, that 57.9% of girls and 56.7% of boys ages 6 to 10 living in urban areas whose families want to participate in a CCT program are receiving the transfers[11]. For the same age group, the percentages of beneficiaries in rural areas are higher: 69.3% of girls and 66% of boys.

We observe a similar pattern in urban and rural areas for the 11 to 15 age group; however, they have higher proportions of beneficiaries than their younger counterparts. In urban areas, 77.6% of girls and 78.2% of boys are participating in those programs, while in rural areas they are 85.3% and 87.2%, respectively.

Table 2 shows the percentages of children ages 6-15 in the sample who are working in the labor force. In addition to the total, the table shows separate percentages of children working for those who are beneficiaries of the program and for the comparison group.[12] We can see that beneficiaries are more likely to work than non-beneficiary. This is also true for the 2001 sample, when 14.2% of beneficiary and 11.1% of non-beneficiary children were working. Since the decline in child labor force participation rates observed from 2001 to 2003 occurred for all working children in Brazil, we cannot attribute it to participation in CCT programs.

[11] All the descriptive data in this section are weighted, unless otherwise noted. Nevertheless, the sample is restricted to eligible families that are receiving the benefits or signed-up to participate in the program.
[12] Individuals were considered to be working in the labor force if they dedicated at least one hour per week to working activities, as defined by the PNAD.

Children are more likely to work if they are older and live in rural areas. This can be seen in Tables 3 and 4 for both beneficiary and non-beneficiary groups. It is worth noting that, for those aged 11 to 15, Table 4 shows that 49.1% of rural boys receiving cash transfers and 52.9% of non-beneficiary rural boys are working. In the same age group, 12.1% of the beneficiary and 18.8% of the non-beneficiary boys living in urban areas are working. Table 4 also shows that girls in general work in the labor force less than boys[13]. For children aged 11 to 15, 20.9% of rural beneficiary girls and 6.9% of urban beneficiary girls are working, compared to 32.6% and 8.1% of non-beneficiaries from rural and urban areas, respectively.

Regarding the younger group – ages 6 to 10 – we can see from Table 3 that the differences between beneficiaries and non-beneficiaries and the proportions of working children are smaller than for the older ones. Younger rural children are more likely to work than those in urban areas. While approximately 15% of the boys and 7.5% of the girls from rural areas were working in 2003, only around 1% of girls and 3% of girls in urban areas were working in the labor force.

Younger children are not only less likely to work than the older ones, but those who do work also spend less time working on average. As shown by Table 4, children with ages from 11 to 15 work on average 20 hours per week, which is compatible with part-time jobs and school attendance. Rural girls in this age group spend about 18 hours per week with work activities, 2 hours less than other children with the same age. However, cases in which children are clearly out of school, working 50, sometimes 60 hours per week do exist. While these cases do not constitute the norm, diGiovani (2002) found children working on the streets in Campinas city who report spending from 9 to 10 hours per day, six to seven days a week in their activities, and not attending school.

Working beneficiary and non-beneficiary children ages 6 to 10 living in rural areas also tend to have similar averages of weekly working hours – approximately 15 hours per week, as shown in Table 3. Those in urban areas, however, have different patterns:

[13] This can be a consequence of the higher proportion of girls who assume home chores compared to boys. They are not working as much in the labor force, but still have their time used for work purposes. However, the time spent on home chores is not counted as labor force work.

beneficiary boys work on average 12 hours per week while non-beneficiary boys work 10 hours; beneficiary and non-beneficiary girls work 16 and 12 hours per week, respectively.

The discussion about children earnings clearly leads to an analysis of unpaid workers. Table 3 shows that beneficiary and non-beneficiary rural girls and non-beneficiary rural boys aged 6-10 working in the labor force are unpaid. Also, 97.9% of the rural beneficiary boys working in the labor force in this age group are not receiving payments. In urban areas, around 65% of beneficiary and non-beneficiary boys and beneficiary girls and 86.6% of non-beneficiary girls do not receive money for their work.

One may claim that in this age group children mostly help their parents or other adults from the family, thus accounting for why many of them are unpaid. However, even in the 11-15 age group we observe, in Table 4, that 84% to 95% of those living in rural areas are unpaid. In urban areas more children receive payments for their work, but the percentages of unpaid workers are still high: 58.7% of beneficiary boys, 49.7% of non-beneficiary boys, 54.7% of beneficiary girls and 65.3% of non-beneficiary girls are unpaid workers.

Considering such high proportions of unpaid workers among children in the labor force, the measurement of their earnings is subject to some biases. As we are interested in the monetary value of their work, excluding those who are unpaid would provide better understanding of children's opportunity costs since it is not likely that some work activity would have a zero monetary value (even though it is not actually paid for). In this case, the measurement bias arises from very small sample sizes in which average earnings are based – no more than a couple of paid child workers in the 6-10 age group and some small samples in the 11-15 age group[14]. The alternative average earning measurement is take into account both paid and unpaid children. As the majority of working children are unpaid, this would lead to a large downward bias in the value of children's labor force work, misrepresenting the average earnings that they can get in the labor market.

Roughly speaking, if we take into account only children who are paid for their work, that is, excluding zero Reals payments, the amount received by urban children in the 11 to 15

[14] It is worth noting that the frequency of children working in the labor force in the 6-10 group is also small.

age group doubles to approximately 52 to 58 Reals (Table 4) comparing to the average earnings of all (paid and unpaid) working children. In rural areas, average earnings of working children of the same age group raise from less than 6 Reals to as much as 40 or even 70 Reals due only to the exclusion of unpaid workers.

The increases in average earnings of those with 6 to 10 years would also be large when dropping unpaid workers (Table 3). In urban areas, for instance, average earnings of beneficiary boys are 11 Reals when unpaid are included and 31 Reals when unpaid are excluded. For non-beneficiary urban boys, the average earnings including and excluding unpaid workers are 4 and 13 Reals, respectively.

Analyzing children's weekly work hours we find that the majority of child workers have work days compatible with part-time jobs and school activities[15]. Indeed, among non-beneficiaries the school enrollment is from 93% for rural boys to around 99% for urban girls, among children aged 6-10 (Table 3) and 11-15 (Table 4).

However, school enrollment is not necessarily equal to school attendance. According to Tables 3 and 4 not all beneficiaries report being enrolled in the formal school system, even though the main conditionality of receiving monthly grants is to attend at least 85% of the school days. This may represent a lack of government inspection, allowing families to receive the grants without actually sending their children to school. This oversight seems worse if we take into account that if those children are not even enrolled in the school system, let alone attending classes.

Finally, Table 5 provides information on children's involvement in household chores for 10-15 year-old[16]. It is important to keep in mind that these activities are not counted as being "work" but may consume a large share of a child's time, especially older girls who may be in charge of taking care of younger siblings and the house while their parents work in the labor market.

Being responsible for some tasks such as setting the table for meals or tidying up their bedrooms may be considered good for children, encouraging the development of some

[15] School system is part-day in Brazil.
[16] The information about home chores is available in PNAD-2003 for individuals aged 10 or more year-old.

skills that will be useful later in their lives. Some children, however, face a very strict routine of household tasks in which they are responsible for preparing meals, cleaning the house and doing the laundry – in general without adult supervision. This routine can be as harmful as "working" but they are not paid for their efforts and it is not considered a form of work.

In some countries, including Brazil, girls are expected to learn how to take care of a house and family as soon as possible. In this context these tasks are not considered to be work, however, they limit the time girls are able to dedicate to school or leisure. On the other hand, boys are encouraged to have a job or learn a profession that would enable them to provide money for their future family. These patterns can be found in our sample. We already described that boys are in general more likely to work in the labor force than girls although the average weekly work hours for 11 to 15-year old boys and girls is very similar, conditional on working (Tables 3 and 4).

Considering girls from 10 to 15 years, Table 5 shows that 76% of non-beneficiaries and 80% of beneficiaries are responsible for some household chores in urban areas; in rural areas the numbers are even higher: 91% of non-beneficiaries and 87% of beneficiaries[17]. The percentages of boys aged 10-15 performing home chores are roughly the half of those observed for girls: from 37% of those who receive the benefits and live in urban areas to 42% of rural non-beneficiaries.

Table 5 also provides the average time spent on household chores (in weekly hours) for children aged 10-15 who declared that they are responsible for some tasks in their homes. As we would expect, the main differences are between boys and girls. Boys spend on average 8.3 hours on chores in rural areas and 8.7 when they live in urban areas. Girls, on the other hand, spend around 14 weekly hours on average on chores in rural areas. The difference between beneficiaries and non-beneficiaries are slightly larger for urban girls than in other groups – those who receive benefits spend 13.5 hours per week on household tasks compared to 14.3 for those who are not in the program.

[17] The question about whether or not an individual performs home chores is asked for those aged 10 or more.

3.2 Descriptive information about fathers and mothers

Regarding parents, Table 6 below shows descriptive information about mothers and Table 7 the information about fathers in the sample, by beneficiary and non-beneficiary groups and by rural and urban areas.

The beneficiary group has higher labor force participation rates than the non-beneficiary. Also, work activities in rural areas are higher than in urban areas. Nevertheless, employment rate differences between beneficiary and non-beneficiary groups for fathers living in rural areas are not very large, as for mothers living in urban areas.

Table 6 shows that 43% of beneficiary urban mothers and 41% of non-beneficiary rural mothers are working in the labor force, while more than 70% of rural mothers are in the labor force. More than 95% of rural fathers and approximately 80% of urban fathers are working in the labor force (Table 7). Only mothers from urban areas show statistically significant differences – at 10% the level –between beneficiary and non-beneficiary groups regarding labor force participation. Indeed, it seems that conditional cash transfers may not impact parents' work decisions.

Despite a higher proportion of working mothers in rural areas, approximately 70% of them are unpaid workers, while 20% of urban working mothers are unpaid (Table 6). As for children, including unpaid workers in the average earnings in this case introduces a downward bias in measurement, although for mothers we do not have the same sample size problem when excluding unpaid workers.

Urban working mothers earn, on average, 160 Reals per month if they are beneficiaries compared to 149 Reals if they are non-beneficiaries. If they live in rural areas, their average monthly earning is 121 and 132 Reals, respectively. When including unpaid workers, urban mothers have average incomes nearly three times that of rural mothers.

Only a small fraction of working fathers is unpaid: 3% to 4% in urban areas and 5% to 7% in rural areas (Table7). Indeed, the difference between average earning excluding and including unpaid workers is much lower than in the mothers' sample. Dropping the unpaid workers, urban working fathers earn on average 275 Reals per month if they are

beneficiaries and 293 Reals if they are non-beneficiaries. In rural areas, beneficiary working fathers earn on average 206 Reals per month while non-beneficiary earn 230 Reals.

Comparing mothers' and fathers' average monthly earnings, in all cases fathers' earnings are higher than mothers. However, fathers have longer work days/weeks. Fathers work 46 to 48 weekly hours (Table 7), regardless if living in urban or rural areas and whether they are in the beneficiary or non-beneficiary group. Rural beneficiary and non-beneficiary mothers spend 25 to 26 weekly hours working in the labor force, respectively, and urban mothers spend about 30 hours per week in the labor force.

Although parents' labor status and income are important indicators of family well being, other characteristics may reveal complementary aspects of family background – for instance, parents' age of first work and educational levels may indicate how they evaluate work and school activities.

We distinguish mothers and fathers according to the age group in which they had their first work experience. Wahba (2006) argues that the age of parents' first work can represent the family's moral concept of work, besides poverty trap or poverty cycle theories. The moral concept of work is related to how parents evaluate work experiences in childhood. Parents who worked at an early age may value this experience in a different way than those who worked later, considering work as a normal activity and good for children's development.

Regarding the poverty trap/cycle theories, Portela and Emerson (2000) describe it as the mechanism by which "poor families generate poor families": poor children have to work to increase family income thus having less investment in education (human capital) than children that did not have to work. As children's future earnings and labor market opportunities are correlated to their final educational attainment, working children will face low wages when they become adults. As a consequence, working children will need, in the future, to send their children to work, perpetuating a poverty cycle over generations.

To investigate the parents' first work experience we separated them into three categories: those who started working in the labor force before they were 14, those who started with 15 year-old or more, and those who never worked before. Although the first two categories are straightforward, the group that never worked deserves additional comments. In both mothers and fathers groups it can be the case for disabled persons, due to a lack of accessibility and discrimination issues. In this case the effect on child labor is ambiguous: children may either work more to compensate parents' wage loss or work less in the labor force to look after their father/mother. It can also be the case of very young parents who are facing motherhood/fatherhood in adolescence, still looking for their first job.

We also expect to find mothers who never worked because they "choose to be housewives" – be in charge of children, home and husband and not work in the labor market. This is an outcome compatible with Brazilian society – some fathers associate their success with their ability to keep a family only with his earnings – and children would be also less likely to work if their mothers never worked.

However, it is hard to find further reasons to explain fathers who never worked before, and the possible effects on child labor. It can be the case of fathers who think that work is degrading – only poor/fool people work; rich/wise people enjoy the life. The effect is also ambiguous in this case: their children may either work less because fathers want them to be "wise" or work more because fathers want their children's earnings. We cannot discard misreporting (parents that always had irregular work activities and say that never worked before) and the cases of parents involved with substance abuse, violence and even with criminal activities.

Comparing Tables 6 and 7 we can see that mothers and fathers have different experiences related to the age of their first work, and differences between beneficiaries and non-beneficiaries are in general very small. In urban areas around 37% of mothers first began working at age 14 or less, 15% started working after they were 15, and the majority, 47%, of urban mothers never worked in the labor market (Table 6). Urban fathers who had their first job before 15 were 71.8% and 68.1% of beneficiary and non-beneficiary, respectively, while 20.5% of beneficiary fathers and 24.3% of non-beneficiary had their

first job before 15 (Table 7). The proportion of urban fathers who never worked is about 8%.

Parents from rural areas reported that they started working earlier. Among beneficiary families the proportions of mothers (fathers) that started working at age 14 or less, at 15 or more, and never worked were 71.1% (90.3%), 7.6% (7.5%) and 21.3% (2.3%), respectively. Within non-beneficiaries, 67.4% of mothers and 88.2% of fathers had their first job at ages 14 or earlier, 8.9% of mothers and 9.5% of fathers had their first job when they were 15 or older and 23.7% of mothers and 2.2% of fathers never worked.

Tables 6 and 7 also show mothers' and fathers' educational levels measured by their complete years of schooling. Mothers are in general more educated than fathers; however, most have not continued beyond 5th grade. According to Table 6, urban mothers from beneficiary families have on average 4.4 completed years of schooling, while non-beneficiaries urban mothers have completed 3.9 years. In rural areas educational attainment is even lower: 2.4 years for beneficiary and 2.8 years for non-beneficiary mothers.

Fathers from urban areas have completed, on average, 3.5 years of schooling if their families are in the beneficiary group and the fourth grade if they are not in a beneficiary family (Table 7). As we observed for mothers, father's educational attainment in rural areas is much lower than in urban areas—treatment groups for fathers in rural areas have completed an average of second grade and control groups have completed an average of 1.7 years.

With these results in mind, one can argue that the program may help overcome some inequalities – at least among the poor people, as the sample is restricted to eligible families. Although fathers and mothers educational levels are low in general, those who receive benefits are those who have lower educational levels and as a result may face fewer opportunities to improve their wellbeing.

Other topic to be analyzed in this section is related to the head of the family. The head is the person (mother or father) who contributes the largest share of family income or who is viewed as the head by the other members. As a predominantly male-oriented society,

most Brazilian families are father headed. Less than 2% of the rural families and 5% to 6% of urban families are mother-headed (Table 6).

Finally, we analyze the age difference between fathers and mothers. As suggested by Assaad, Levison and Zibani (2006), the hypothesis is that as the difference between fathers' age and mothers' age increases, fathers would increasingly dominate the relationship – as the household and family choices. Table 6 shows that urban mothers are in general 4 years younger than their spouses, while rural mothers are approximately 5 years younger. Parents' average ages are shown in Tables 6 and 7 for comparison. Mothers' age ranges from 35 to 38 while average fathers' age ranges from 39 to 43 years. Although the average age differences do not seem to be very large, it may have influence in the family decisions, making father's opinions more prevalent.

In order to increase mothers' role as decision makers within their families, CCT benefits are generally paid to children's mothers. There is evidence that mothers spend a higher proportion of their money on children's education and health (Thomas and Strauss, 1992, Thomas, 1994). Also, when they have some money that does not come from their husbands or other family members they may have increased self-esteem which would help them to express their opinions in the household.

3.3 Descriptive information about family

Along with parents' labor and educational characteristics, some family information helps complete the household background, which is important in understanding why some children are working while other children are not. The main questions that arise when trying to explore family background are related to the family size and income levels.

Table 8 shows *per capita* monthly income of beneficiary and non-beneficiary families from urban and rural areas, according to children's age group. The income does not include children's earnings and CCT benefits, but includes all other sources of family income. In the younger group, urban beneficiary families have a monthly *per capita* income of 59 Reals while non-beneficiary families' average *per capita* income is 62 Reals. The overall averages are lower in rural areas, where beneficiary *per capita* income is 45 Reals per month compared to 51 Reals for non-beneficiary families.

Children aged 11 to 15 belong to families whose income is slightly higher. In urban areas, beneficiary families' average income is 61 Reals per month per person, while non-beneficiary families receive 66 Reals per month per person on average. Beneficiary and non-beneficiary families receive on average 48 and 57 Reals *per capita* per month, respectively, if they live in rural areas.

Non-beneficiary families seem to be better off than beneficiary families, since they have slightly higher income levels. This may be indicative that the program is being well-focused on its target. It is important to highlight that this sample contains only eligible families – that Brazilian government consider being under the poverty line – thus the program would be good on focusing on the poorest within the poor[18].

Size is another important family background component. In Table 9 we can see that urban families are in general smaller than rural families. Urban girls and boys aged 10-15 have on average 2.6 siblings if they are beneficiaries and 2.3 siblings if they are non-beneficiaries. In rural areas, beneficiary girls and boys have 3 siblings while non-beneficiary girls have 2.9 and non-beneficiary boys 2.7. Bigger families in a poor environment may face more difficulties to meet their needs, depending more on governmental assistance.

4. Empirical Models

The main goal of this paper is evaluate the impact of Brazilian educational conditional cash transfers on the work decisions of children, mothers and fathers. We will assume that the family maximizes one utility function to all of its members, thus using a unitary model of time allocation. Although we recognize the evidence indicating the failure of unitary models to capture intrahousehold bargaining, we do not have adequate data to implement a collective model.

[18] This income level difference, however, can be an indicative that the non-beneficiary group is not as good as we need from a comparison group. In further step of this research we will use matching estimators to check the consistency of overall results.

We estimate the effect of treatment in two outcomes, for both children and parents[19]. First, we look at the impact of the benefits on the decision to work, estimating separated equations in which dependent variables are the work status of children, mothers and fathers – that is, whether they performed some labor force work activity or not. Second, we investigate the effect of cash transfers on the number of labor force hours that children and parent supply, estimating equations with hours of work as dependent variables for children, mothers and fathers. The explanatory variables for both equations are individual and household characteristics, as well whether or not they are receiving the grant. We estimate the labor force participation conditional on grants using a probit model. For the hours' equations, a Heckman selection model is the most appropriate.

In the next step of this research, we will use semiparametric approach of program evaluation, as recommended by Cameron and Trivedi (2005), such as the Propensity Score Matching (PSM). Intuitively, PSM allow us to build a counterfactual based on the probability of being a beneficiary (conditional on individual and household characteristics). It means that we can reach valid results without relying on strong assumptions about variables and parameters. This approach will also be useful to check sample and results consistency – that is, if eligible families that are signed-up for the program but are not actually receiving transfers are a good comparison group.

4.1. Labor Participation

The empirical equation for labor force participation will be:

$$W_i = \alpha_0 + \sum_{j=1}^{J} \alpha_j X_{ji} + \delta T_i + \varepsilon_i$$

Where W_i is an indicator variable that assumes the value 1 if the individual is working in the labor force and 0 if not, X_{ji} represents J individual, family and regional characteristics (or control variables) and T_i is a binary variable that indicates whether or not the person belongs to the treatment group – its value is 1 if the child receives the grants and zero otherwise.

[19] We use unweighted data on econometric analysis. For a discussion about the use weights in regression analysis, see duMochel and Duncan (1983), Korn and Graubard (1995), Lohr and Liu (1994).

In both children' and parents' equations we used as individual characteristics their age and skin color (1 if they report themselves as white and zero otherwise). To represent the household composition we used variables for the number of children according to age group (0-5, 6-10, 11-15 and 16 and more) and gender (males and females) [20]. Geographic differences were captured using dummy variables for each region (North, Northeast, South, Southeast and Midwest).

Parents' equations also have a dummy variable which value is 1 if they are the head of the family and zero otherwise. Also, parents' characteristics are included in children's equations representing family background. These variables are father's age, the difference between father's and mother's age and father' and mother's education (in completed years of schooling), imputed wages and a set of dummies to indicate the age of their first work (after 14 or never worked, reference is before 15).

4.2. Weekly Work Hours

Working hours are one example of incidental truncation. We observe the amount of hours worked by individuals who decided to participate in the labor force – we can say that the decision of hours offered depends on the former decision of whether or not to work, and Ordinary Least Squares estimators using only the "working" sample would produce biased results.

To estimate the determinants of weekly work hours for children and parents we estimated a two-step Heckman selection model[21]. The empirical equation for weekly work hours is thus given by:

$$H_i = \alpha_0 + \gamma T_i + \sum_{j=1}^{J} \beta_j X_{ji} + \sigma\lambda_i + \varepsilon_i$$

[20] In children's equations these variables represent the number of siblings (without count with themselves) while in parents' equation they are the total number of children in the family.

[21] Although the use of Maximum Likelihood Estimator approach is considered more efficient, it requires stronger assumptions about the error terms in the model and in some cases convergence is an issue (see Wooldridge, 2002 for further references). Two-step estimators are more robust, requires weaker assumptions and are computational-friendly.

where H_i is the weekly hours spent on work activities by the individual *i*, T_i is a binary variable that indicates whether or not the person belongs to the treatment group and X_{ji} represents a set of control variables. λ_i is the selection correction derived from the participation equations described above.

For children's equations, we assume that program participation, age, skin color and the number of siblings would affect both labor participation and hours supplied, while regional and parental characteristics would affect labor participation but not the amount of time worked. In the case of parents we assume that the geographic region affects their ability to be employed but not the time that they spend on work.

5. Results

In this section we discuss the estimated outcomes of children and their parents, with attention to what occurs when they are exposed to a program that provides them an extra monthly income source but requires that children attend school.

It is important to remember that data used refers mostly to the *Bolsa Escola* program, which joined other social programs in the broader *Bolsa Família* in 2004. Until 2003, however, the condition for receiving the monthly grants was children's school attendance. As a consequence, measuring the effects of the Brazilian CCT program on child work and on their parents' labor using PNAD-2003 is essentially investigating a spillover effect of a program aimed at increasing education.

Also, the PNAD-2003 asked two different questions regarding the program – whether or not the person was receiving a transfer and whether or not the person had signed-up for a transfer but was not receiving it. The survey carried out in 2001 asked if the person was receiving or had signed-up for a conditional cash transfer program in the same question, aggregating both treated and "waiting for treatment" in one group. We expect that the change in the question – and consequently in the treatment and comparison groups – and the time span since the implementation in 2001 will lead to results different than those

found in former research regarding child labor (Cardoso and Souza, 2003; Ferro and Kassouf, 2005). Parents' labor decision under this program has not been studied before.

5.1. Children's outcomes

We performed separated estimations for children by age group (6-10 and 11-15), by urban and rural areas and also by gender. This gives us eight sets of results for the probability of work (Table 10) and another eight for hours supply (Table 11). In Table 10 we report marginal effects of probit estimations.

Three years after being adopted nationally, the CCT program seems to have the expected depressing effect on child labor. This result was obtained for four groups: 6-10 years girls from both urban and rural areas, 11-15 urban boys and 11-15 rural girls. For the 6-10 age group, CCT programs reduce the probability of work for urban girls by 0.6 percentage points and by 4.0 percentage points for rural girls. Although the effect is not significant for boys in this age group, similar estimates suggest that maybe we should aggregate younger boys and girls, keeping different regressions for urban and urban areas. However, specification tests performed suggested different equations for them.

For 11-15 year-old rural girls, we find larger effects of the CCT program – a decrease of 12.9 percentage points in the probability of working, which is explaining almost all the difference between beneficiary and non-beneficiary groups. In urban areas, an additional benefit may reduce the proportion of working boys aged 11 to 15 by 4.8 percentage points.

These findings are different from previous ex-post evaluations, in which the program showed no effect in reducing child labor (Cardoso and Souza, 2003) or had an unexpected positive effect (Ferro and Kassouf, 2005). That may be evidence that the question asked makes difference in assessing impacts and, in addition, time is needed for people to assimilate a social program such *Bolsa Escola* when it is implemented nationally in a country with Brazilian dimensions and large regional differences[22].

[22] Even estimating equations with the same specifications from Ferro and Kassouf (2005) we find that the CCT program reduces child labor (boys and girls from 6-15 years) by 2.12 percentage points in urban and

Regarding other children's characteristics that affect their work status, they are more likely to work as they become older, and this effect is larger for boys than for girls. Girls in the 6-10 age groups have work probability 0.3 percentage points more as they get older when they live in urban areas. If they live in rural areas, one more year represents an increase of 3.1 percentage points in their probability of work. For boys those numbers are 0.8 and 5.7, respectively.

Urban girls (boys) from 11-15 age groups have a probability to work 1.8 (3.0) percentage points higher as they get older. In rural areas, one additional year on girls' age represents probability of work 3.9 percentage points larger, while for boys the increase would be of 7.4 percentage points. Although white children would have lower probabilities of work compared to non-white, this effect is not statistically different from zero[23].

To analyze family background effects we included mothers' and fathers' variables in children's work equations. In virtually all groups we did not find statistically significant impact of fathers' age, education and imputed wages on child labor and this was also the case for mothers.

For the 6-10 year-old group, however, an additional year on fathers' age is associated with a 0.2 percentage point increase in urban boys' probability of work. The positive effect on child labor may signal that older fathers are more likely to consider work in the labor force an activity to be started early, or think that "it is better to work than be useless"[24]. We use the age differential of parents instead of mothers' age, as suggested by Assaad, Levison and Zibani (2006), in order to capture power differentials between parents. However, it was statistically insignificant for all groups, suggesting the average difference in our sample may not be big enough to capture the intended effect.

5.31 percentage points in rural areas. It has no effects on hours supply. Those are exactly opposite results, due only to the use of the later dataset.

[23] In Brazil race is self-reported mainly as the skin color. The non-white group in this sample is formed by brown (mixed black and white), yellow (Asian, Japanese, Chinese and so on) and indigenous (which are less than 10% of Brazilian population, mostly living isolated in protected areas). Less than 1% of our sample, which is restricted to eligible beneficiaries and signed-up individuals, reported yellow as their skin color.

[24] These results do not meet the interpretation that older parents can afford better conditions through the wealth accumulation, even controlling for their labor income (remembering that our sample is limited to poor families).

For one additional year of school that mothers complete there is a 1.4 percentage point decrease in the probability of work for urban girls aged 6-10. For other groups the effect of mothers' education was not statistically different from zero. Education, measured by completed years of schooling, is supposed to increase knowledge about the consequences of working in early ages. Nevertheless, our sample has mostly mothers with a low level of education no matter if beneficiary or not, and we also know that completing a grade is not necessarily the same as learning / understanding the topics.

In the 6-10 age group, when mothers experience 1% increase in their monthly wages, the probability of work of urban girls increase in approximately 0.12 percentage point[25]. This effect implies that when mothers' opportunities are better they may increase their social network, thus finding work for their children is easier. Some mothers can also bring their children to work with them. Mothers' earnings have no effect in child work probabilities for other groups.

One can argue that imputed wages are highly correlated to education introducing biases to estimation. Although aware of this problem, we also consider that imputed (or reservation) wages are estimated based not only in education, but also in geographic and family characteristics, besides age and race. Moreover, specifications excluding wages or schooling did not show relevant differences from the presented on Table 10.

Unlike other parents' characteristics, the variables indicating the age group with which fathers and mothers had their first work have influence on child labor. Parents who had their first job later (or who never worked) would tend to consider it harmful in early ages (or value it less) than parents who start working before they were 15. Indeed, if the fathers' first work was at ages 15 or more, boys with ages 6-10 from urban (rural) areas would have a probability to work 1.1 (7.4) percentage points lower compared to the case in which fathers start to work at 14 or less. For urban girls aged 6-10 the effect of the age group with which fathers had their first is not statistically significant and for rural 6-10 year-old girls the variables was automatically dropped due to collinearity problems (as almost all fathers started work before 15 in this group).

[25] The approximated value of the marginal effect of variables with log-transformation in a discrete response model is presented in Wooldridge (2002, p. 459).

Rural girls (boys) with ages 11-15 whose fathers had their first labor market experience after the age 14 have a probability to work 1.7 (14.9) percentage points smaller than children from the same group whose fathers start working at 14 or earlier. Also, 11-15 year-old boys whose fathers never worked face 6.4 and 24.4 percentage points decrease in their probabilities of work in urban and rural areas when compared to have fathers that start working before 15. As discussed before, the reasons why fathers would never have a work in the labor force is unclear, thus we cannot explain the large effect of such behavior in 11-15 rural boys work probability.

Moreover, in the 11-15 age group if the mothers' first work was at 15 or more the probability of working is lower for rural girls and for both urban and rural boys. Their probability to work would be 11.4, 3.7 and 10.5 percentage points smaller, respectively, than if their mothers started to work earlier.

Although is not common to have fathers who never worked, this category is relevant for mothers. It may reflect the societal values in which men are supposed to bring home money enough for the family expenses and women are supposed to take care of household, children and husband. Those are concepts that have been slowly changing over the years, but in poor – and less educated – portions of the population remain more prevalent. As a consequence, if the mother never worked children would have fewer chances to be working, compared with mothers that start to work early and the effect should also be bigger than in the case of mothers who start working after 15. The variable representing mother who never worked is capturing, in fact, the traditional values related to family members' roles – or fathers that consider that the responsibility of meet the family budget is a "fathers' (or males') duty".

For children aged 6 – 10, mothers who never worked account for a decrease of 0.7 (2.8) percentage points in the probability of work for urban girls (boys), compared to mothers that had their first work before they were 15. In rural areas, the difference would be of 8.1 (11.1) percentage points.

In the 11-15 age group, urban girls (boys) whose mothers never worked face a probability of work 6.8 (13.0) percentage points smaller than those whose mothers start working in

early ages. Rural girls have 19.9 and rural boys 36.1 percentage points decreases in their probability to work due to belong to families in which mothers never worked, compared to families in which mothers first work was before 15.

Finally, for children aged 11-15, when the mother had her first work in the labor market after she was 14, urban boys have 3.7 percentage points less chances to be a child worker, compared to when mothers start working earlier. For rural girls the decrease in the chances of working is of 11.4 percentage points and for rural boys it is 10.5. As we expected, the effects are smaller than the case of mother who never worked.

We can conclude towards both the poverty trap and moral concept of work explanations for these results, which hold even controlling for parents' income, education and age. However, the impact of fathers and mothers who never worked seems to be more related to parents' moral concept of work while the impact of having the first work in the labor market after 14 year-old seems to be more related to the poverty trap hypothesis. Another consequence of these findings is that if conditional cash transfers are able to delay entrance in labor market (not only pull children out of it), the effects of transfers would be reinforced by another long-term effect – children who postponed their first work would later become parents who would postpone their children's first work.

As a measure of household composition we included a set of variables representing children's number of siblings, males and females and in different age groups. For urban girls in the 6-10 age group, the higher the number of brothers with the same age the more they are likely to work – an increase in 0.3 percentage point for an additional brother. One additional sister in the 11-15 age group may increase the probability of work of 6-10 rural girls by 0.2 percentage point. Also, one additional brother in the 11-15 age group may increase by 0.7 percentage points the probability of work for 6-10 urban boys. These findings may indicate that in these cases older siblings are finding work for the younger ones.

On the other hand, one additional 6-10 year-old sister may reduce 6-10 rural boys' probability to work in 3.5 percentage points, indicating that they share work, while one additional 6-10 year-old (11-15 year-old) brother is associated to an increase of 2.7 (2.4)

percentage points in the probability of work in the labor force for 6-10 rural boys, resuming the hypothesis of "network effect" in the case of brothers from rural, both older or with the same age: 6-15 year-old brothers are finding work for 6-10 year-old boys.

Urban girls in the 11-15 age group also share work with their older brothers, as indicated by a decrease of 1.2 percentage points in the probability of work due to an additional brother 16 or older in the family. Increasing the number of brothers in the same age group and of 6-10 year-old sisters would increase the 11-15 urban boys' probability of work in 2.3 and 1.9 percentage points. We can say that instead of sharing work with same age brothers they act more as a network effect, finding jobs for each other.

Finally, in rural areas one additional sister aged 6-10 (11-15) is responsible for increase the probability of work of 11-15 year-old girls by 3.6 (3.1) percentage points – once more, the network effect appears. Family composition has no significant effects on the probability of work for rural boys with ages 11-15.

Regarding regional differences and their effects on child labor, rural boys aged 6-10 and urban boys aged 11-15 would be less likely to work if they live in the Middle-West when compared to those who live in Southeast region – maybe facing fewer opportunities since large food industries and factories are migrating to that region, looking for skilled workers. In the 11-15 age group, rural girls and boys are more likely to work if they live in the South region – in which familiar agriculture is predominant – and rural boys are more likely to work in North region than in Southeast.

Concerning the amount of hours supplied, Table 11 shows the results of the Heckman two-step estimation of working hours. We expect that conditional cash transfers may reduce the hours supplied conditional on the work decision, since children have to go to school thus having less time available to work. Although we estimated negative values for the parameter associated with CCT for all groups, virtually none is statistically different from zero. This means that once the work decision is affected, the hours supply will not be influenced by the program. Urban boys aged 11-15, however, experience a decrease of 2.36 hours in their weekly time spent on work when they are CCT beneficiaries.

Again, children tend to work more as they get older in almost all groups. The exception is the group of 6-10 urban girls, for which increases in age has no significant effect on their hours of work. While one additional year accounts for an increase of 1 hour in the weekly work time for 11-15 rural girls, it can increase 2.5 hours in the weekly work time of 6-10 urban boys.

The skin color (white compared to non-white) has no influence in the probability of work, but it does affect hours supply for rural girls. Unexpectedly, white rural girls work 3.6 (2.9) hours more than non-white in the 6-10 (11-15) age group. In general non-white are more likely to work than white children. However, we are dealing with a restricted sample – CCT' eligible (poor) families which are signed-up for or receiving benefits – and this may have affected the results.

Family composition also affects hours supply, and in some cases variables that do not affect the work decision may affect hours, and *vice-versa*. Additional siblings in the 0-5 age group would increase by 4.1 (2.0) hours the weekly time spend on work for urban girls (boys) aged 11-15.

In urban areas, the number of brothers with ages 11-15 may increase by 3.3 hours the time spend on work for 6-10 boys and decrease by 2.3 hours for 11-15 boys, suggesting again that brothers with the same age share work while older brothers can sometimes find work for the younger or bring younger siblings to workplaces.

Within 6-10 rural girls, having additional siblings with the same age represent increasing number of working hours: 2.2 weekly hours more due to one additional brother and 2.6 weekly hours more due to one additional sister. Moreover, 6-10 rural girls with an additional brother with more than 16 years spend 2.6 hours more in work activities.

Finally, 11-15 urban (rural) girls have their weekly work time increased by 5.5 (2.0) hours for one additional sister aged 16 or more and 11-15 urban girls work 4.8 hours more for one additional sister aged 6-10, while 11-15 year-old boys from urban areas share work with their same age brothers (2.3 less hours).

5.2. Parents' outcomes

What is the effect of an increase in household income due to governmental transfers on the labor supply of adults – say, mothers and fathers? Assuming that children would offer less work, as we can infer from section 5.1 above, family labor supply would be reduced. This would lead to increase in the labor supply of other family members – parents – as the relative price of work would be higher for the whole family. However, taking into account the income effect of transfers in adult labor, parents could choose to work less. As presented before, the final outcome is an empirical matter.

Besides cash transfers, we take into account the role of individual characteristics, such as education and age, family composition and geographic region to explain parents' work decision. We performed separated estimations for mothers and fathers and for those living in urban and rural areas, ending up with four equations estimating parents' work decision (Table 12) and another four estimating weekly hours spent on work (Table 13).

Regarding work decision, we can conclude from Brazilian experience that the transfers would have any effect on mothers or fathers. Parker and Skoufias (2000) found similar results for the Mexican PROGRESA-*Oportunidades*.

In respect to education, one additional grade completed would increase mothers' labor force participation in 0.6 and 0.8 percentage points in urban and rural areas, respectively. However, it would decrease in 0.3 percentage points the probability of work for urban fathers, which is an unexpected result. We do expect that, as in mothers' equations, higher educational attainment would result in higher ability to be employed – at least because it works as a signal of skills for employers.

As urban (rural) mothers get older they increase in 2.3 (3.0) percentage points their odds of being employed. Fathers also see their chances of work being increased by 1.6 and 0.5 percentage points in urban and rural areas, respectively, for one additional year in their ages. We included squared ages of parents in order to control for the effect of life-cycle – chances of employment and wages tend to increase until a certain age, and then would tend to decrease as individuals are getting "too old".

White mothers are 4.8 (3.9) percentage points less likely to be employed than non-whites mothers in urban (rural) areas. Skin color does not affect fathers' probability of work in urban areas, but decreases it by 1.5 percentage points if they live in rural areas.

The last individual characteristic analyzed is if the person is the head of the family. As expected, being the head of the family increases the probability of work by 10.4 percentage points for urban mothers and urban fathers and by 14.4 percentage points for rural fathers. The effect of being head of the family on the work decision of rural mothers is not statistically significant, probably because they are less than 1% of family heads in this case.

Regarding family composition, the number of children affects more mothers than fathers, which is an expected outcome since, at least in Brazil, mothers are more likely to take care of children while fathers are working in the labor market. For urban (rural) mothers, as the number of children aged 0-5 increases, their chances to work in the labor force will decrease by 6.0 (2.9) percentage points. Urban (rural) father, on the other hand, have their probability of work increased by 1.6 (1.3) percentage points due to one additional son or daughter aged 0-5. Babies and very young children, in general, demands much more attention, care – and monetary resources – from their parents.

Although urban mothers face a probability of work 2.2 percentage points smaller for one additional son aged 16 or more, increases in the number of daughters in all age groups are related to increases in mothers' probability of work from 2.4 to 3.8 percentage points. Also, one more 11-15 son would increase urban mothers' chances of work in the labor market by 3.1 percentage points. It seems that children are substituting mothers in home chores, releasing mothers to labor market activities. Rural mothers follow similar patterns, but the presence of additional sons and daughters aged 16 or more is not statistically significant.

Considering fathers, the overall effect of the presence of additional children on their probability of work in the labor market is either positive or not statistically significant. However, one more son aged 6-10 is responsible for a 0.7 percentage point decrease of rural fathers' work probability. We actually do not expect that fathers would share work

with their younger sons, unless fathers consider important to teach them farm activities in the very early ages – in this case, they would be included in "work for own/family consumption" which is not considered as chores.

Finally, urban (rural) mothers' work probability is 6.5 (6.2) percentage points larger if they live in the South region and 5.3 (13.3) smaller if they live in the Middle-West region compared to live in the Southeast. Urban fathers' work probability is larger in North and Northeast regions and rural fathers' chances of working are also larger in South region, comparing to Southeast fathers.

Regarding parents' working hours supply, the parameters estimated by two-step Heckman procedures are shown in Table 13. The CCT program does not affect parents' work decision, but changes the amount of hours supplied by working parents. Urban beneficiary mothers work 1.5 hours more in a week than non-beneficiary mothers. In rural areas, on the other hand, beneficiary mothers (fathers) have weekly work length 1.8 (0.6) hours shorter than non-beneficiary. The effect of transfers on the time spent on labor market is not statistically significant for rural fathers.

The reasoning behind a negative effect of transfers on parents' work time was discussed before by Parker and Skoufias (2001). To accomplish the requirements to receive the benefits, parents would spend more time with child care – at least, taking their children to school. Despite governmental efforts to offer more free school transportation in Brazil, it is not available everywhere. Even in rural areas, where school buses are more common – as a compensation for larger distances – parents have to bring their children to a bus stop that sometimes is not right in the corner.

Another possibility for a negative effect of transfers in the time that parents spend working in the labor force is that if children are spending more time in school under the CCT they will reduce their time spend on other activities, such as work in the labor force, as our findings indicate, and home chores. Thus, someone else – say, parents – will have to be in charge of the (remaining) chores, affecting their time allocation, that is, if parents have to assume some extra chores they will need to spend less time with leisure or working in the labor force. Indeed, although school enrollment is very high in both

beneficiary and non-beneficiary groups, beneficiary rural girls are less engaged in home chores than non-beneficiary and we observe the same pattern for urban boys.

Finally, we cannot forget the adults' income effect. With a higher income, due to transfers, beneficiary families are able to increase their consumption of all normal goods, including leisure. Thus, parents "adjust" their labor supply to the new constraints.

On the other hand, if beneficiary children are less likely to work in the labor force, they will have more time to spend in other activities besides school. More children may spend part of their time in school, part in leisure and part doing chores under a CCT program. This can be the case for urban girls, as 80% of beneficiary and 76% of non-beneficiary in the 10-15 year-old group perform home chores. As an indirect consequence, beneficiary urban mothers are able to spend more time in the labor force.

The question is why the effects are different for urban and rural mothers? The effect of CCT on child labor is negative for both urban and rural areas, so we would expect that if fewer children are working under CCT, they would stay at home and divide their time between school, leisure and chores, also for both urban and rural areas. One possible answer is that schools are closer to home in urban areas, requiring less time in the school-home way, compared to rural areas where sometimes children spend hours in their school-home way. However, in this case we should expect a positive coefficient for urban fathers too. The reason why urban mothers and urban fathers respond differently to the transfer is an open question.

Another possible explanation for a positive effect of CCT on mothers' time in the labor force, provided by Parker and Skoufias (2001), is that as transfers payments are in a monthly basis, mothers can go to grocery stores fewer times or buy enough for a month at once, reducing the time spent with shopping.

The effects of education and age on the time spent on work are not large, but mostly statistically significant. In urban areas, one more year on mothers' (fathers) educational level represent weekly slightly longer work lengths, increased by 0.36 (0.12) hours. On the other hand, one more year in urban mothers' age corresponds to decreasing in the

weekly time spend on work by 0.20 hours, and one more year in urban (rural) fathers' age leads to 0.04 (0.07) less hours spend in the labor market per week.

Although white parents have lower probability of work than non-white (Table 12), white rural mothers spend more time in work activities in a week than non-white rural mothers, 2.23 hours. Also, white urban (rural) fathers spend 0.63 (1.40) more hours in the labor market in a week than non-white.

Being household head does not affect the time that fathers spend on the labor force, but have positive statistically significant impact on mothers' working hours. Urban mothers that are head of the family spend 3.61 hours more in the labor market than non-head mothers. In rural areas the effect is larger – if the mothers that head the household spend 11.88 more weekly hours in the labor force than non-heads. However, the proportion of mother-headed families in rural areas is very small, less than 2%.

When statistically significant, the presence of additional children in the family is related to a decline in the number of weekly work hours for rural fathers and rural mothers. For urban mothers, however, one additional child aged 0-5 reduces the weekly time spend on work by 1.41 hours and one additional 11-15 son (daughter) increases the weekly working time in the labor force by 1.16 (1.66) hours, thus reinforcing the effect observed on the probability of work.

6. Conclusions

In this paper we want to measure the impact of Brazilian conditional cash transfer programs on household work decisions. The empirical strategy was estimating separately the probability of work for children, mothers and fathers, conditional on beneficiary status using a probit model. We also estimate hours supply for children, mothers and fathers separately using a two-step Heckman procedure.

We divided children in groups according to their age (6-10 and 11-15), gender and urban area status, ending up with eight sets of results for labor force participation and another eight for hours supply. For parents, we divided mothers and fathers from urban and rural

areas, estimating four sets of results for labor force participation and another four related to hours supply. To estimate labor force participation the dependent variable of a probit model was whether or not the child was working in the labor force. The explanatory variables include individual, regional and household characteristics, besides whether or not the child is beneficiary of the CCT program. We also included mothers' and fathers' characteristics as explanatory variables for child work estimates. The dependent variable of hours supply equations is the number of weekly hours that an individual spends working in the labor force.

We use data from PNAD-2003, the Brazilian national household survey. We restrict our sample to eligible families, that is, families with children aged 6-15 and monthly per capita income below half of a national minimum salary (120 Reals). The observational unit is the child and we keep only records with complete information, ending up with 14,434 observations. Finally, our treatment group is formed by children/parents receiving the benefit and our comparison group is formed by children/parents that signed up for the program but are not actually receiving benefits.

We conclude that the Brazilian CCT program is more effective in reducing child labor for girls than for boys. The program reduces the probability of work for girls aged 6-10 from both urban and rural areas and for urban boys and rural girls aged 11-15. Moreover, urban boys aged 11-15 decrease their time spent on the labor market if they are beneficiaries. These findings are contrary to preceding research. We believe that the change in the question about the CCT and the time span are the reason for the difference. Unlike PNAD-2001, in 2003 there were one question asking if the person was a beneficiary, actually receiving benefits, and another question asking if the person was signed up for the benefit, but still waiting for an approval. Regarding time span, CCT programs become a national program (*Bolsa Escola*) in early 2001 and we believe that after three years the target population is more conscious about the program and its benefits, which allow a better understanding/answer in the survey.

Parents' work decisions under CCT were not investigated before in Brazil. We find that the program do not change mothers and fathers' probability of participation in the labor force, but implies in some changes in the time that parents spend on labor market. Rural

mothers and urban fathers reduce their working time, either because they need to spend more time with child care under the program or because they can afford more leisure time due to an extra income source. Urban mothers, however, have a longer work week when receiving the transfers.

The weakness of this paper is related to the treatment and comparison groups. One may claim that some self-selection problem still remain, since the program is approved in a first come-first served basis – once the family meet the eligibility criteria. By this point of view, families who are already receiving benefits may "want more" to participate than families that took a longer time to sign up and some heterogeneity may remain between the two groups. To check the robustness of our findings, in the next step of this research we will perform semiparametric methods such as propensity score matching, as an approach to control for heterogeneity among beneficiary and non-beneficiary groups.

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Table 1 - Percent of children who are receiving benefits, by gender, age and urban/rural group status.

	Ages 6 - 10		Ages 11 – 15	
	Urban	**Rural**	**Urban**	**Rural**
Girls	57.9	69.3	77.6	85.3
Boys	56.7	66.0	78.2	87.2

Table 2. Percent of children ages 6-15 who are working in the labor force, by gender and beneficiary / non-beneficiary groups.

	Beneficiary		Non-beneficiary	Total
Boys and girls	18.4	*	12.1	12.3
Boys	16.9	*	11.4	16.5
Girls	8.1	**	6.9	7.7

* differences are statiscally significant at 1%
** differences are statiscally significant at 5%

Table 3 – Labor force participation, hours of work, earnings and school enrollment for CCT program eligible children ages 6-10, by urban/rural, gender and beneficiary/non-beneficiary group status.

	Urban				Rural			
	Girls		Boys		Girls		Boys	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Labor force participation								
% Working	1.01	1.49	3.47	2.75	7.53	7.84	15.92	14.16
Frequency (unweighted)	*11*	*14*	*44*	*27*	*52*	*25*	*98*	*45*
Frequency (weighted)	*5,496*	*5,888*	*19,369*	*11,717*	*25,609*	*11,794*	*51,288*	*23,522*
If working:								
Weekly hours	16.21	12.91	11.92	9.52	14.32	11.90	16.01	15.83
Standard deviation	*7.08*	*8.01*	*6.89*	*6.37*	*7.53*	*5.92*	*8.62*	*6.53*
% Unpaid	65.96	86.62	65.55	65.07	100.00	100.00	97.91	100.00
Monthly earnings, unpaid excluded	20.41	49.29	31.09	12.69			73.73	
Standard deviation	*12.34*	*25.05*	*15.76*	*10.70*			*70.51*	
Frequency (unweighted)	*3*	*2*	*15*	*10*	-	-	*2*	-
Frequency (weighted)	*1,871*	*788*	*6,673*	*4,093*			*1,072*	
Monthly earnings, unpaid included	6.95	6.60	10.71	4.43	0.00	0.00	1.54	0.00
Standard deviation	*11.87*	*18.67*	*17.47*	*8.68*	*0.00*	*0.00*	*12.84*	*0.00*
School enrollment								
% Enrolled	99.33	97.99	98.63	96.87	99.48	96.50	98.54	93.32
Sample size	1,327	982	1,316	1,051	677	307	652	336
Weighted	541,934	393,955	557,666	426,104	339,932	150,524	322,184	166,082

Table 4 - Labor force participation, hours of work, earnings and school enrollment for CCT program eligible children ages 11-15, by urban/rural, gender and beneficiary/non-beneficiary group status.

	Urban				Rural			
	Girls		Boys		Girls		Boys	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Labor force participation								
% Working	6.96	8.11	12.08	18.84	20.99	32.61	49.15	52.96
Frequency (unweighted)	*126*	*44*	*240*	*101*	*211*	*60*	*581*	*90*
Frequency (weighted)	*55,097*	*18,505*	*103,753*	*45,204*	*108,052*	*28,832*	*294,015*	*46,358*
If working:								
Weekly hours	20.53	20.83	19.56	22.32	17.40	18.43	20.50	21.15
Standard deviation	*13.70*	*13.28*	*11.56*	*13.48*	*9.33*	*9.20*	*8.88*	*9.13*
% Unpaid	54.74	65.31	58.66	49.72	90.14	83.70	95.27	92.14
Monthly earnings, unpaid excluded	53.45	54.89	52.39	58.61	40.05	35.27	58.07	72.51
Standard deviation	*46.55*	*41.09*	*43.97*	*44.98*	*37.97*	*32.33*	*52.43*	*35.25*
Frequency (unweighted)	*62*	*17*	*104*	*51*	*22*	*10*	*29*	*8*
Frequency (weighted)	*24,938*	*6,420*	*42,895*	*22,727*	*10,655*	*4,699*	*13,906*	*3,644*
Monthly earnings, unpaid included	24.19	19.04	21.66	29.46	3.95	5.75	2.75	5.70
Standard deviation	*41.06*	*35.53*	*38.26*	*43.29*	*16.72*	*9.20*	*16.67*	*21.71*
School enrollment								
% Enrolled	99.04	95.19	98.87	95.87	98.37	96.37	98.51	93.45
Sample size	1,916	588	2,055	608	1,042	182	1,219	176
Weighted	791,141	228,097	858,990	239,926	514,811	88,426	598,222	87,533

Table 5 – Percentage of children aged 10-15 performing home chores and weekly hours spent on home chores by gender, urban/rural and beneficiary/no-beneficiary group status.

	Girls		Boys	
	Beneficiary	**Non-beneficiary**	**Beneficiary**	**Non-beneficiary**
	Urban			
% Doing home chores	80.31	76.04	37.28	39.87
If doing chores:				
Weekly hours	13.47	14.29	8.69	8.74
Standard deviation	*8.70*	*9.41*	*6.52*	*5.85*
Sample size	2,389	727	2,559	765
Weighted	982,963	281,425	1,072,137	300,417
	Rural			
% Doing home chores	86.83	91.06	41.80	38.75
If doing chores:				
Weekly hours	14.70	14.86	8.18	8.26
Standard deviation	*8.45*	*8.51*	*5.07*	*4.99*
Sample size	1,292	228	1,463	240
Weighted	64,179	111,016	717,931	119,801

Table 6 – Characteristics of mothers by urban/rural and beneficiary/non-beneficiary group status.

	Urban		Rural	
	Beneficiary	**Non-beneficiary**	**Beneficiary**	**Non-beneficiary**
Labor force participation				
% Working	43.10	41.05	73.38	71.08
Frequency (unweighted)	*2,790*	*1,300*	*2,610*	*707*
Frequency (weighted)	*1,185,010*	*528,783*	*1,302,624*	*350,107*
If working:				
Weekly hours	31.14	29.67	24.80	26.55
Standard deviation	*17.59*	*17.56*	*14.79*	*14.68*
% Unpaid	21.70	18.62	71.25	69.00
Monthly earnings, unpaid excluded	159.97	148.95	121.94	132.50
Standard deviation	*105.33*	*103.86*	*96.59*	*103.33*
Frequency (unweighted)	*2,263*	*1,086*	*756*	*225*
Frequency (weighted)	*927,810*	*430,322*	*374,514*	*108,538*
Monthly earnings, unpaid included	125.25	121.21	35.06	41.08
Standard deviation	*114.18*	*110.19*	*75.68*	*84.03*
Age of the first work				
% before 15	37.96	36.86	71.06	67.44
% after 14	14.92	15.36	7.61	8.85
% never worked	47.12	47.78	21.33	23.71
Education				
Years of schooling	3.87	4.42	2.43	2.77
Standard deviation	*3.10*	*3.18*	*2.38*	*2.57*
% Head of the family	5.02	6.23	1.58	1.49
Age difference (husband-wife)	4.25	3.97	4.66	5.29
Standard deviation	*7.47*	*7.37*	*7.07*	*7.02*
Age	36.61	34.63	38.50	36.45
Standard deviation	*7.07*	*7.09*	*7.85*	*7.93*
Sample size	6,614	3,229	3,590	1,001
Weighted	2,749,710	1,288,109	1,775,137	492,545

Table 7 - Characteristics of fathers by urban/rural and beneficiary/non-beneficiary group status.

	Urban		Rural	
	Beneficiary	**Non-beneficiary**	**Beneficiary**	**Non-beneficiary**
Labor force participation				
% Working	82.49	80.80	95.71	96.02
Frequency (unweighted)	*5,437*	*2,630*	*3,427*	*962*
Frequency (weighted)	*2,268,355*	*1,040,770*	*1,698,879*	*472,987*
If working:				
Weekly hours	46.10	46.87	46.80	47.82
Standard deviation	*12.38*	*13.11*	*12.21*	*12.04*
% Unpaid	4.09	2.70	6.94	5.19
Monthly earnings, unpaid excluded	274.74	293.06	206.45	230.13
Standard deviation	*131.85*	*133.85*	*118.81*	*120.50*
Frequency (unweighted)	*5,217*	*2,565*	*3,191*	*907*
Frequency (weighted)	*2,175,546*	*1,012,697*	*1,581,056*	*448,460*
Monthly earnings, unpaid included	263.50	285.16	192.13	218.20
Standard deviation	*140.13*	*140.31*	*126.05*	*127.95*
Age of the first work				
% before 15	71.81	68.12	90.28	88.30
% after 14	20.48	24.26	7.46	9.47
% never worked	7.71	7.62	2.26	2.23
Education				
Years of schooling	3.46	4.01	1.72	2.03
Standard deviation	*3.05*	*3.15*	*2.18*	*2.37*
% Head of the family	94.98	93.77	98.42	98.51
Age	40.86	38.60	43.16	41.74
Standard deviation	*9.29*	*9.32*	*9.46*	*9.59*
Sample size	6,614	3,229	3,590	1,001
Weighted	2,749,704	1,288,061	1,775,102	492,599

Table 8 – Average *per capita* monthly family income, excluding children's earnings and CCT payments, by urban/rural, beneficiary/non-beneficiary and age group status.

	Urban		Rural	
	Beneficiary	**Non-beneficiary**	**Beneficiary**	**Non-beneficiary**
		Ages 6-10		
Average monthly income	59.20	61.84	44.61	50.54
Standard deviation	*32.65*	*32.68*	*29.90*	*30.03*
Sample size	2,643	2,033	1,329	643
Weighted	1,099,600	820,059	662,116	316,606
		Ages 11-15		
Average monthly income	60.79	66.20	47.92	56.55
Standard deviation	*32.19*	*32.05*	*30.47*	*30.34*
Sample size	3,971	1,196	2,261	358
Weighted	1,650,131	468,023	1,113,033	175,959

Table 9 – Average number of siblings by gender, urban/rural and treatment/control group status.

	Girls		Boys	
	Beneficiary	**Non-beneficiary**	**Beneficiary**	**Non-beneficiary**
		Urban		
Number of siblings	2.59	2.29	2.62	2.31
Standard deviation	*1.61*	*1.40*	*1.67*	*1.51*
		Rural		
Number of siblings	3.04	2.86	3.05	2.70
S\tandard deviation	*1.84*	*1.89*	*1.86*	*1.86*

Table 10 – Estimated probit marginal effects for children's work equation, separately by age, urban/rural and gender groups (t-statistics in parenthesis).

	Ages 6-10				Ages 11-15			
	Urban		Rural		Urban		Rural	
Work decision	**Girls**	**Boys**	**Girls**	**Boys**	**Girls**	**Boys**	**Girls**	**Boys**
Child								
CCT Beneficiary	**-0.006**	-0.003	**-0.040**	-0.032	-0.016	**-0.048**	**-0.129**	-0.060
	(-2.9)*	(-0.46)	(-2.02)**	(-1.48)	(-1.58)	(-3.32)*	(-3.7)*	(-1.37)
Age	**0.003**	**0.008**	**0.031**	**0.057**	**0.018**	**0.030**	**0.039**	**0.074**
	(3.46)*	(3.66)*	(4.04)*	(6.43)*	(5.76)*	(7)*	(4.56)*	(7.05)*
White (1)	-0.0004	0.001	0.003	0.013	-0.011	-0.023	-0.010	0.010
	(-0.21)	(0.13)	(0.14)	(0.48)	(-1.1)	(-1.52)	(-0.31)	(0.24)
Fathers								
Age	-0.001	**0.002**	-0.007	0.002	0.001	-0.001	-0.002	-0.001
	(-1.39)	(1.91)***	(-1.4)	(0.39)	(0.58)	(-0.41)	(-0.36)	(-0.27)
Schooling	0.0004	0.0003	-0.005	-0.016	-0.004	-0.009	0.004	-0.028
	(0.37)	(0.09)	(-0.49)	(-1.25)	(-0.74)	(-1.31)	(0.27)	(-1.4)
Imputed wages (ln)	-0.007	-0.020	0.128	0.266	0.008	0.163	-0.216	0.186
	(-0.26)	(-0.25)	(0.47)	(0.85)	(0.06)	(0.9)	(-0.57)	(0.38)
First work after 15 (2)	0.000	**-0.011**		**-0.074**	**-0.017**	**-0.030**	**-0.135**	**-0.149**
	(-0.11)	(-1.85)***		(-2.26)**	(-1.65)***	(-2.04)**	(-2.6)*	(-2.59)*
Never worked	-0.002	-0.014		-0.080	-0.018	**-0.064**	-0.002	**-0.244**
	(-0.78)	(-1.55)		(-1.55)	(-1.33)	(-3.56)*	(-0.02)	(-2.79)*
Mothers								
Age difference	0.002	-0.001	0.007	-0.003	-0.002	0.002	0.001	-0.0005
	(1.52)	(-1.36)	(1.45)	(-0.64)	(-1.12)	(0.89)	(0.26)	(-0.09)
Schooling	**-0.014**	0.007	-0.055	0.029	0.005	-0.018	-0.026	-0.030
	(-1.68)***	(0.96)	(-1.24)	(0.7)	(0.25)	(-0.73)	(-0.47)	(-0.49)
Imputed wages (ln)	**0.122**	-0.078	0.522	-0.223	-0.064	0.111	0.240	0.245
	(1.66)***	(-1.24)	(1.32)	(-0.6)	(-0.38)	(0.51)	(0.5)	(0.45)
First work after 15	-0.002	-0.003	0.020	-0.014	-0.005	**-0.037**	**-0.114**	**-0.105**
	(-0.94)	(-0.43)	(0.66)	(-0.44)	(-0.47)	(-2.48)**	(-2.83)*	(-2.07)**
Never worked	**-0.007**	**-0.028**	**-0.081**	**-0.111**	**-0.068**	**-0.130**	**-0.199**	**-0.361**
	(-3.11)*	(-4.53)*	(-3.5)*	(-4.91)*	(-6.88)*	(-9.85)*	(-6.89)*	(-9.94)*
Number of siblings								
ages 0-5	0.001	0.006	0.011	0.001	0.011	0.017	0.012	-0.023
	(1.28)	(2.11)**	(1.23)	(0.08)	(1.79)***	(2.07)**	(0.73)	(-1.13)

Table 10 – continued.

	Ages 6-10				Ages 11-15			
	Urban		Rural		Urban		Rural	
Work decision	**Girls**	**Boys**	**Girls**	**Boys**	**Girls**	**Boys**	**Girls**	**Boys**
ages 6-10, males	**0.003**	0.002	0.000	**0.027**	-0.002	0.012	-0.002	0.017
	(2.82)*	(0.34)	(0.02)	(1.71)***	(-0.34)	(1.32)	(-0.11)	(0.72)
ages 11-15, males	-0.0001	**0.007**	0.005	**0.024**	0.007	**0.029**	0.027	0.038
	(-0.04)	(1.81)***	(0.39)	(1.72)***	(1)	(2.83)*	(1.44)	(1.62)
ages 16+, males	-0.003	-0.004	0.011	0.011	**-0.012**	0.010	0.006	-0.005
	(-1.24)	(-0.86)	(0.93)	(0.75)	(-1.85)***	(1.19)	(0.42)	(-0.3)
ages 6-10, females	0.001	-0.002	-0.004	**-0.035**	-0.003	0.014	**0.031**	0.015
	(0.5)	(-0.48)	(-0.25)	(-2.02)**	(-0.46)	(1.46)	(1.77)***	(0.65)
ages 11-15, females	**0.002**	0.001	0.005	-0.002	-0.006	0.016	**0.036**	0.030
	(1.99)**	(0.23)	(0.39)	(-0.12)	(-0.82)	(1.51)	(1.72)***	(1.17)
ages 16+, females	0.0003	-0.001	0.017	0.015	0.007	-0.009	0.030	0.018
	(0.11)	(-0.27)	(1.01)	(0.76)	(0.91)	(-0.9)	(1.52)	(0.81)
Geographic region (3)								
North		-0.013	0.149	0.032	-0.010	-0.041	0.062	**0.183**
		(-1.37)	(1.28)	(0.43)	(-0.42)	(-1.35)	(0.59)	(1.68)***
Northeast	0.220	-0.031	0.164	-0.003	-0.013	0.086	0.130	0.247
	(1.64)	(-1.18)	(1.53)	(-0.03)	(-0.2)	(1.05)	(0.81)	(1.2)
South	0.012	-0.006	0.067	0.036	0.040	-0.022	**0.405**	**0.265**
	(1.17)	(-0.46)	(1.02)	(0.53)	(1.25)	(-0.66)	(3.85)*	(2.76)*
Mid-west		-0.011	-0.013	**-0.094**	-0.018	**-0.085**	0.035	-0.057
		(-0.64)	(-0.18)	(-1.73)***	(-0.57)	(-2.4)**	(0.29)	(-0.4)
Number of obs.	1876	2313	863	982	2454	2625	1219	1383
Wald chi2	54.41	78.18	57.42	136.92	134.30	270.00	168.11	254.92
(df)	(22)	(24)	(22)	(24)	(24)	(24)	(24)	(24)
Pseudo-R2	0.2049	0.1232	0.1106	0.1695	0.1101	0.1332	0.1304	0.1331
obs. P	0.1333	0.0307	0.0892	0.1436	0.0681	0.1299	0.2215	0.4787
pred. P (at x-bar)	0.2873	0.0180	0.0603	0.0921	0.0477	0.0973	0.1820	0.4661

* Statistically significant at the 1% level; ** Statistically significant at the 5% level; *** Statistically significant at the 10% level.

(1) Non-white includes black, brown, yellow and indigenous.

(2) First work before 15 is the reference.

(3) Southeast region is the reference.

Table 11. Estimated determinants of children's work hours, separately by age, urban/rural and gender groups (t-statistics in parenthesis).

	Ages 6-10				Ages 11-15			
	Urban		Rural		Urban		Rural	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Weekly work hours								
Child								
CCT Beneficiary	-0.582	0.222	-1.001	-1.304	-1.834	**-2.359**	-0.691	-0.432
	(-0.2)	(0.13)	(-0.54)	(-0.79)	(-0.8)	(-1.65)***	(-0.47)	(-0.43)
Age	-1.797	1.210	**2.513**	**2.340**	**3.366**	**1.957**	**0.974**	**1.954**
	(-1.01)	(1.28)	(2.8)*	(2.34)**	(4.01)*	(3.89)*	(2.14)**	(7.02)*
White (1)	-1.570	-2.930	**3.322**	1.203	0.717	-1.246	**2.794**	-0.757
	(-0.52)	(-1.6)	(2.01)**	(0.75)	(0.3)	(-0.84)	(2.16)**	(-1)
Number of siblings								
ages 0-5	0.143	1.237	1.174	0.418	**4.105**	**1.974**	-0.858	0.059
	(0.1)	(1.36)	(1.47)	(0.46)	(2.67)*	(2.33)**	(-1.1)	(0.11)
ages 6-10, males	-2.289	**-2.650**	**2.163**	0.860	0.077	-1.024	-0.114	0.048
	(-0.73)	(-1.65)***	(1.74)***	(0.74)	(0.05)	(-1.09)	(-0.13)	(0.09)
ages 11-15, males	-1.052	**3.294**	-0.419	-0.583	-0.058	**-2.298**	0.145	-0.254
	(-0.33)	(2.53)**	(-0.36)	(-0.56)	(-0.03)	(-2)**	(0.16)	(-0.48)
ages 16+, males	-7.618	-1.615	0.993	1.273	-0.808	0.040	-0.695	0.263
	(-1.54)	(-0.89)	(1.12)	(1.23)	(-0.53)	(0.05)	(-1.16)	(0.74)
ages 6-10, females	4.839	0.967	**2.558**	-2.342	**3.752**	0.079	1.239	-0.013
	(1.6)	(0.59)	(1.99)**	(-1.64)	(2.04)**	(0.07)	(1.53)	(-0.03)
ages 11-15, females	-0.640	2.369	-0.202	-1.310	-0.156	-1.651	-0.347	-0.464
	(-0.24)	(1.6)	(-0.18)	(-1.18)	(-0.07)	(-1.48)	(-0.35)	(-0.78)
ages 16+, females	-4.109	-1.025	**2.636**	1.704	**5.465**	-0.359	**2.015**	0.618
	(-0.99)	(-0.63)	(1.85)***	(1.22)	(3.09)*	(-0.34)	(2.21)**	(1.33)
Constant	23.932	-9.641	-17.854	-11.667	**-41.318**	0.761	4.187	-6.594
	(0.83)	(-0.72)	(-1.45)	(-0.98)	(-2.69)*	(0.09)	(0.57)	(-1.49)
Work decision								
Child								
CCT Beneficiary	**-0.585**	-0.057	**-0.308**	-0.186	-0.153	**-0.256**	**-0.431**	-0.150
	(-2.9)*	(-0.46)	(-2.02)**	(-1.48)	(-1.58)	(-3.32)*	(-3.7)*	(-1.37)
Age	**0.339**	**0.189**	**0.256**	**0.346**	**0.177**	**0.173**	**0.149**	**0.186**
	(3.46)*	(3.66)*	(4.04)*	(6.43)*	(5.76)*	(7)*	(4.56)*	(7.05)*

Table 11 – continued.

	Ages 6-10				Ages 11-15			
	Urban		Rural		Urban		Rural	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
White (1)	-0.052	0.019	0.026	0.075	-0.119	-0.139	-0.037	0.024
	(-0.21)	(0.13)	(0.14)	(0.48)	(-1.1)	(-1.52)	(-0.31)	(0.24)
Fathers								
Age	-0.164	**0.036**	-0.059	0.010	0.010	-0.006	-0.007	-0.004
	(-1.39)	(1.91)***	(-1.4)	(0.39)	(0.58)	(-0.41)	(-0.36)	(-0.27)
Schooling	0.042	0.007	-0.045	-0.095	-0.037	-0.054	0.016	-0.070
	(0.37)	(0.09)	(-0.49)	(-1.25)	(-0.74)	(-1.31)	(0.27)	(-1.4)
Imputed wages (ln)	-0.786	-0.451	1.068	1.610	0.083	0.946	-0.816	0.467
	(-0.26)	(-0.25)	(0.47)	(0.85)	(0.06)	(0.9)	(-0.57)	(0.38)
First work after 15 (2)	-0.026	**-0.291**		**-0.633**	**-0.192**	**-0.185**	**-0.707**	**-0.386**
	(-0.11)	(-1.85)***		(-2.26)**	(-1.65)***	(-2.04)**	(-2.6)*	(-2.59)*
Never worked (2)	-0.358	-0.460		-0.843	-0.214	**-0.487**	-0.006	**-0.675**
	(-0.78)	(-1.55)		(-1.55)	(-1.33)	(-3.56)*	(-0.02)	(-2.79)*
Mothers								
Age difference	0.178	-0.024	0.062	-0.018	-0.020	0.012	0.005	-0.001
	(1.52)	(-1.36)	(1.45)	(-0.64)	(-1.12)	(0.89)	(0.26)	(-0.09)
Schooling	**-1.550**	0.156	-0.457	0.174	0.048	-0.104	-0.097	-0.075
	(-1.68)***	(0.96)	(-1.24)	(0.7)	(0.25)	(-0.73)	(-0.47)	(-0.49)
Imputed wages (ln)	**13.845**	-1.774	4.363	-1.349	-0.643	0.646	0.910	0.616
	(1.66)***	(-1.24)	(1.32)	(-0.6)	(-0.38)	(0.51)	(0.5)	(0.45)
First work after 15	-0.242	-0.068	0.149	-0.092	-0.055	**-0.236**	-0.543	**-0.268**
	(-0.94)	(-0.43)	(0.66)	(-0.44)	(-0.47)	(-2.48)**	(-2.83)*	(-2.07)**
Never worked	**-0.716**	**-0.600**	**-1.012**	**-0.853**	**-0.687**	**-0.759**	**-1.026**	**-1.009**
	(-3.11)*	(-4.53)*	(-3.5)*	(-4.91)*	(-6.88)*	(-9.85)*	(-6.89)*	(-9.94)*
Number of siblings								
ages 0-5	0.133	**0.139**	0.094	0.005	**0.115**	**0.099**	0.046	-0.058
	(1.28)	(2.11)**	(1.23)	(0.08)	(1.79)***	(2.07)**	(0.73)	(-1.13)
ages 6-10, males	**0.379**	0.034	0.003	**0.166**	-0.024	0.071	-0.008	0.042
	(2.82)*	(0.34)	(0.02)	(1.71)***	(-0.34)	(1.32)	(-0.11)	(0.72)
ages 11-15, males	-0.006	**0.156**	0.042	**0.147**	0.071	**0.166**	0.103	0.096
	(-0.04)	(1.81)***	(0.39)	(1.72)***	(1)	(2.83)*	(1.44)	(1.62)
ages 16+, males	-0.349	-0.100	0.095	0.068	**-0.122**	0.060	0.023	-0.013
	(-1.24)	(-0.86)	(0.93)	(0.75)	(-1.85)***	(1.19)	(0.42)	(-0.3)

Table 11 – continued.

	Ages 6-10				Ages 11-15			
	Urban		Rural		Urban		Rural	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
ages 6-10, females	0.079	-0.052	-0.030	**-0.215**	-0.033	0.082	**0.115**	0.038
	(0.5)	(-0.48)	(-0.25)	(-2.02)**	(-0.46)	(1.46)	(1.77)***	(0.65)
ages 11-15, females	**0.273**	0.024	0.042	-0.011	-0.063	0.090	**0.136**	0.075
	(1.99)**	(0.23)	(0.39)	(-0.12)	(-0.82)	(1.51)	(1.72)***	(1.17)
ages 16+, females	0.030	-0.033	0.138	0.090	0.067	-0.054	0.114	0.045
	(0.11)	(-0.27)	(1.01)	(0.76)	(0.91)	(-0.9)	(1.52)	(0.81)
Geographic region (3)								
North		-0.399	0.754	0.174	-0.107	-0.280	0.215	**0.466**
		(-1.37)	(1.28)	(0.43)	(-0.42)	(-1.35)	(0.59)	(1.68)***
Northeast	4.603	-0.710	1.876	-0.021	-0.128	0.498	0.555	0.645
	(1.64)	(-1.18)	(1.53)	(-0.03)	(-0.2)	(1.05)	(0.81)	(1.2)
South	0.655	-0.163	0.429	0.198	0.320	-0.138	**1.164**	**0.690**
	(1.17)	(-0.46)	(1.02)	(0.53)	(1.25)	(-0.66)	(3.85)*	(2.76)*
Mid-west		-0.332	-0.118	**-1.042**	-0.214	**-0.753**	0.125	-0.145
		(-0.64)	(-0.18)	(-1.73)***	(-0.57)	(-2.4)**	(0.29)	(-0.4)
Constant	-53.433	5.476	-25.617	-7.182	-1.271	-10.294	-2.038	-7.294
	(-1.52)	(0.49)	(-1.42)	(-0.53)	(-0.13)	(-1.36)	(-0.19)	(-0.83)
mills								
lambda	4.553	4.093	2.901	**5.170**	**7.860**	-2.209	-0.032	**2.832**
	(0.75)	(1.4)	(0.89)	(1.9)***	(2.21)**	(-1.12)	(-0.02)	(2.07)**
rho	0.696	0.559	0.456	0.578	0.559	-0.191	-0.004	0.322
sigma	6.540	7.325	6.368	8.938	14.055	11.552	8.916	8.800
lambda	4.553	4.093	2.901	5.170	7.860	-2.209	-0.032	2.832
Number of obs.	2264	2313	977	982	2454	2625	1219	1383
censored	2239	2242	900	841	2287	2284	949	721
uncensored	25	71	77	141	167	341	270	662
Wald chi2 (20)	40.17	41.94	44.49	65.08	80.02	111.79	64.74	114.12

* Statistically significant at the 1% level; ** Statistically significant at the 5% level; *** Statistically significant at the 10% level.

(1) Non-white includes black, brown, yellow and indigenous.

(2) First work before 15 is the reference.

(3) Southeast region is the reference.

Table 12 - Estimated probit marginal effects for mothers and fathers' work equations, by urban/rural groups (t-statistics in parenthesis).

	Mothers		Fathers	
Work decision	**Urban**	**Rural**	**Urban**	**Rural**
CCT Beneficiary	0.007	-0.002	0.006	-0.004
	(0.62)	(-0.13)	(0.73)	(-0.62)
Schooling	**0.006**	**0.008**	**-0.003**	-0.0004
	(3.81)*	(2.7)*	(-2.56)**	(-0.26)
Age	**0.023**	**0.030**	**0.016**	**0.005**
	(4.3)*	(4.44)*	(6.51)*	(2.95)*
Age-squared	**-0.0003**	**-0.0003**	**-0.0002**	**-0.0001**
	(-3.81)*	(-4.1)*	(-8.25)*	(-4.11)*
White (1)	**-0.048**	**-0.039**	0.013	**-0.015**
	(-4.09)*	(-2.41)**	(1.43)	(-2.22)**
Head of the family	**0.104**	-0.014	**0.104**	**0.144**
	(5.04)*	(-0.26)	(6.32)*	(5.14)*
Number of kids				
ages 0-5	**-0.060**	**-0.029**	**0.016**	**0.013**
	(-8.66)*	(-3.47)*	(2.96)*	(3.11)*
ages 6-10, males	0.011	0.004	**0.024**	**-0.007**
	(1.44)	(0.39)	(4.09)*	(-1.78)***
ages 11-15, males	**0.031**	**0.020**	**0.011**	-0.005
	(4.12)*	(2.13)**	(1.94)***	(-1.39)
ages 16+, males	**-0.022**	0.015	0.010	0.001
	(-2.52)**	(1.6)	(1.51)	(0.24)
ages 6-10, females	**0.038**	**0.021**	**0.030**	0.0002
	(4.92)*	(2.19)**	(4.98)*	(0.04)
ages 11-15, females	**0.032**	**0.027**	**0.016**	-0.002
	(4.28)*	(2.67)*	(2.76)*	(-0.53)
ages 16+, females	**0.024**	0.015	-0.002	**0.011**
	(2.28)**	(1.21)	(-0.23)	(2.14)**
Geographic region (2)				
North	-0.032	0.049	**0.071**	0.014
	(-1.55)	(1.1)	(4.72)*	(0.82)
Northeast	0.009	-0.006	**0.018**	-0.002
	(0.75)	(-0.29)	(1.87)***	(-0.21)
South	**0.065**	**0.062**	-0.002	**0.007**
	(3.24)*	(2.16)**	(-0.12)	(0.64)
Mid-west	**-0.053**	**-0.133**	0.010	0.013
	(-2.7)*	(-3.84)*	(0.64)	(1.03)
Number of obs.	9693	4567	9792	4851
Wald chi2 (17)	287.90	142.07	302.90	120.74
obs. P	0.4128	0.7226	0.8193	0.9559
pred. P (at x-bar)	0.4103	0.7275	0.8257	0.9632

* Statistically significant at the 1% level;
** Statistically significant at the 5% level;
*** Statistically significant at the 10% level.

(1) Non-white includes black, brown, yellow and indigenous.

(2) Southeast region is the reference.

Table 13 - Estimated parameters of mothers and fathers' working hours equation, by urban/rural groups (t-statistics in parenthesis).

	Mothers		Fathers	
	Urban	**Rural**	**Urban**	**Rural (3)**
Weekly work hours				
CCT Beneficiary	**1.455**	**-1.842**	**-0.635**	-0.789
	(2.36)**	(-2.6)*	(-2.01)**	(-1.32)
Schooling	**0.360**	-0.147	**0.122**	0.150
	(3.51)*	(-1.07)	(2.52)**	(1.31)
Age	**-0.199**	-0.065	**-0.044**	**-0.067**
	(-3.51)*	(-1.26)	(-1.86)***	(-1.65)***
White (1)	-0.760	**2.233**	**0.629**	**1.398**
	(-1.07)	(3.33)*	(1.98)**	(2.45)**
Head of the family	**3.614**	**11.881**	-0.794	-1.704
	(2.77)*	(5.28)*	(-1.06)	(-0.66)
Number of kids				
ages 0-5	**-1.411**	0.453	0.165	**-0.577**
	(-2.18)**	(1.05)	(0.86)	(-1.78)***
ages 6-10, males	-0.398	-0.049	-0.239	0.006
	(-0.93)	(-0.11)	(-1.05)	(0.02)
ages 11-15, males	**1.163**	**-1.271**	0.332	-0.042
	(2.39)**	(-2.98)*	(1.52)	(-0.13)
ages 16+, males	-0.287	**-0.791**	0.253	0.203
	(-0.54)	(-2)**	(0.99)	(0.62)
ages 6-10, females	0.812	-0.380	-0.349	**-1.369**
	(1.57)	(-0.87)	(-1.43)	(-3.98)*
ages 11-15, females	**1.663**	0.301	-0.085	-0.228
	(3.28)*	(0.64)	(-0.37)	(-0.65)
ages 16+, females	0.433	0.088	-0.280	-0.106
	(0.72)	(0.17)	(-0.91)	(-0.23)
Constant	**29.659**	**36.006**	**49.019**	**54.207**
	(4.78)*	(9.46)*	(34.57)*	(20.42)*
Work decision				
CCT Beneficiary	0.018	-0.006	0.024	-0.054
	(0.62)	(-0.13)	(0.73)	(-0.62)
Schooling	**0.016**	**0.024**	**-0.013**	-0.005
	(3.81)*	(2.7)*	(-2.56)**	(-0.26)
Age	**0.058**	**0.089**	**0.063**	**0.062**
	(4.3)*	(4.44)*	(6.51)*	(2.95)*
Age-squared	**-0.001**	**-0.001**	**-0.001**	**-0.001**
	(-3.81)*	(-4.1)*	(-8.25)*	(-4.11)*
White (1)	**-0.124**	**-0.114**	0.050	**-0.172**
	(-4.09)*	(-2.41)**	(1.43)	(-2.22)**
Head of the family	**0.263**	-0.041	**0.354**	**0.889**
	(5.04)*	(-0.26)	(6.32)*	(5.14)*
Number of kids				
ages 0-5	**-0.155**	**-0.088**	**0.061**	**0.159**
	(-8.66)*	(-3.47)*	(2.96)*	(3.11)*

Table 13 – continued.

	Mothers		Fathers	
	Urban	**Rural**	**Urban**	**Rural (3)**
ages 6-10, males	0.028	0.012	**0.092**	**-0.088**
	(1.44)	(0.39)	(4.09)*	(-1.78)***
ages 11-15, males	**0.080**	**0.060**	**0.044**	-0.064
	(4.12)*	(2.13)**	(1.94)***	(-1.39)
ages 16+, males	**-0.058**	0.047	0.039	0.010
	(-2.52)**	(1.6)	(1.51)	(0.24)
ages 6-10, females	**0.098**	**0.064**	**0.117**	0.002
	(4.92)*	(2.19)**	(4.98)*	(0.04)
ages 11-15, females	**0.083**	**0.081**	**0.063**	-0.026
	(4.28)*	(2.67)*	(2.76)*	(-0.53)
ages 16+, females	**0.062**	0.046	-0.007	**0.143**
	(2.28)**	(1.21)	(-0.23)	(2.14)**
Geographic region (2)				
North	-0.083	0.155	**0.313**	0.207
	(-1.55)	(1.1)	(4.72)*	(0.82)
Northeast	0.024	-0.018	**0.069**	-0.022
	(0.75)	(-0.29)	(1.87)***	(-0.21)
South	**0.165**	**0.196**	-0.007	0.099
	(3.24)*	(2.16)**	(-0.12)	(0.64)
Mid-west	**-0.140**	**-0.371**	0.038	0.194
	(-2.7)*	(-3.84)*	(0.64)	(1.03)
Constant	**-1.604**	**-1.401**	**-0.744**	**-0.053**
	(-6.06)*	(-3.5)*	(-3.35)*	(-0.1)
mills				
lambda	5.281	**-14.001**	-1.132	**-16.267**
	(1.12)	(-3.2)*	(-0.43)	(-2.9)*
rho	0.292	-0.800	-0.089	-1.000
sigma	18.085	17.492	12.769	16.267
lambda	5.281	-14.001	-1.132	-16.267
Number of obs.	9693	4567	9792	4581
censored	5692	1267	1769	202
uncensored	4001	3300	8023	4379
Wald chi2 (24)	288.82	149.63	193.63	104.33

* Statistically significant at the 1% level;
** Statistically significant at the 5% level;
*** Statistically significant at the 10% level.

(1) Non-white includes black, brown, yellow and indigenous.

(2) Southeast region is the reference.

(3) two-step estimate of rho = -1.1864554 is being truncated to -1