Brazil's Bolsa Familia: Can a Conditional Cash Transfer Reduce Teen Fertility[1]

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ABSTRACT

In 2008, Brazil's conditional cash transfer program expanded to cover a wider range of ages. Poor families are now given stipends for their children's school attendance up to age seventeen; prior the maximum age was fifteen. We estimate the impact of this policy on teen fertility with a difference in difference analysis on the outcomes of treated cohorts to non-treated cohorts, limiting our sample to those with family income levels eligible for Bolsa Familia. Using data from Brazil's nationally representative household survey PNAD, we first check for an increase in attendance to confirm the salience of the policy for this demographic. Overall we find a small increase in attendance of four to five percentage points, with rural 17-year-old girls increasing their probability of attendance by thirteen percentage points. We find no corresponding drop in fertility neither for the population as a whole nor for these rural teens.

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INTRODUCTION

Within the last decade, Brazil's teen pregnancy rates have been among the highest in the world. For fifteen to nineteen-year-olds in 2008, the fertility rate was 56 births per 1000 adolescent girls in Brazil, while this figure in the United States, which also has a notoriously high teen birthrate, was 41.5 per 1000 girls (United Nations Population Fund, 2011). While Brazil's teen birth rate is not much different than in previous decades, total fertility for the population as a whole has fallen below replacement (Dinez Alvez, 2007) causing births to adolescents (nineteens and younger) as a percent of total births to rise from 12% in 1986 to over 20% in the last decade (Gupta and da Costa Leite, 1999); (SINASC). Adolescent girls who live in poverty are almost twice as likely to be teen mothers, and only 25% of 16- and 17-year-old girls with children remain in school compared to 80% of the rest of the population (Brazil's household survey PNAD). This is not promising for the future generation: teens seventeen and younger were responsible for conceiving more than 25% of first births in the latter half of the last decade (Brazil's vital statistics SINASC). Even if a child is not a first born, the timing of the first pregnancy has impacts on these later children as well, likely through lower income levels: earlier pregnancies are correlated with lower levels of education.[1] The correlation between reduced fertility and increased education is not found only in Brazil (Gupta and da Costa Leite, 1999), but is well observed throughout Latin America (Flores and Nunez, 2001) and the world (Lam and Duryea, 1999; Cleland, 2002).

[1] Health is a concern as well: in addition to pregnancy resulting from improper contraceptive use, implying that these young women are also be exposed to STIs, birth weights are lower and mortality rates are higher for both children of adolescent mothers and the adolescents themselves (Klein et. al. 2005).

Should this correlation be causal in that more education postpones births, a conditional cash transfer to increase teen education should result in a decrease in adolescent pregnancy as well. Baird et. al. (2010) find this to be the case in Malawi, where an incentive of $10 a month to stay in school reduced sexual behavior by 5.5 percentage points for drop-out girls who returned to school and 2.5 percentage points for non-drop-out girls. Yet Malawi is a very different cultural setting than Brazil, where pregnant girls can continue receiving free education; in Malawi secondary school is not free and pregnancy usually implies being kicked out of school.

Brazil provides the opportunity to test the initial effect of a conditional cash transfer on fertility when the age limit for Bolsa Familia, a nationwide welfare program providing small cash stipends for school attendance, increases from age fifteen to age seventeen in 2008. We exploit the exogeneity of the teen's age at the time of the Bolsa Familia expansion to compare outcomes across income-eligible cohorts before and after the policy change. Using nationally representative household data, we first confirm the salience of the conditional cash transfer, finding a four to five percentage point increase in attendance for 17-year-olds. When looking at heterogeneity in attendance behavior among groups, we find effects to be isolated among the moderately poor (with no effect for the extreme poor) and the rural (likewise with no effect for urban dwellers). In spite of this strong evidence that school attendance increased with the Bolsa Familia expansion, we find no corresponding drop in adolescent fertility. We likewise find no evidence of a teen fertility reduction due to the Bolsa Familia program when looking at municipal level statistics from Brazil's live birth registry. These results suggest that additional policies to directly impact teen pregnancy are needed in Brazil; education is not a short term solution.

BACKGROUND

Brazil is home to the first conditional cash transfer programs, implemented independently by two municipalities in 1995: Bolsa Escola (School Grant in Brasilia) and PGRFM (Guaranteed Minimum Family Income Program in Campinas, Sao Paulo). As the popularity of such programs expanded, by 2001 more than 200,000 families were covered by local or state programs, many of which were enveloped nationally with the federal adoption of Bolsa Escola and Bolsa Alimentação in 2001. These precedents paved the way for Bolsa Familia to be established as a national project in October, 2003, combining these and a few other programs into a more efficient system.

Under Bolsa Familia legislation, poor families (defined by a per capita income limit of US$60 a month in 2008 and earlier and below US$70 post 2008) received a stipend if they have pregnant mothers or children up to age fifteen in the household. Children must complete vaccine schedules, attend school 85% of the time, and pregnant women must complete prenatal appointments in order for families to receive the variable portion of the stipend; this was about US$9 per individual with a maximum of US$27 in 2007. Money is deposited into mothers' accounts and withdrawn from ATMs using Bolsa Familia cards.[2] Extremely poor families (US$30 per month pre 2008, US$35 after) receive an additional monthly stipend regardless of family composition and compliance with conditionalities.

In addition to geographic expansion, over time there have been changes to both eligibility criteria and the value of benefits families receive under Bolsa Familia. Our study focuses on the single largest change in the program, implemented in January 2008. Under the Pro-Jovem law aimed at meeting various educational goals for Brazil's youth, Bolsa Familia's expanded benefits add an additional R$30 (about US$15) per sixteen and seventeen year-old for up to two adolescents. These youth must attend school at least 75%

[2] Only 2.2% of recipients do not use electronic withdrawl (Lindert et. al. 2007).

of the time, but unlike the child benefit, if adolescents fail to meet the attendance requirement, families lose only the variable benefits linked to that particular adolescent. An individual family's non-compliance first results in a government investigation to determine if the family truly has access to health and education or is in need of additional social services. Then a warning postponement of payment is followed by a two-month suspension of benefits and ultimately cancelation.

The federal government allocates funds to each municipality based on official poverty estimates; Figure 1 indicates a successful implementation in that respect. Within the municipality, however, poor families may remain on the waiting list if the municipality is not an efficient allocator. To minimize leakage to the non-poor, the ``Decentralized Management Index" is used to reward municipalities for thorough administration while not passing randomized audits results in punishment for poor municipal compliance. Non-poor families may also be legitimately receiving Bolsa Familia: once enrolled, a family is awarded two years of participation before being re-evaluated. As the poor's income is inherently more volatile, at any point in time some families' income will be above the eligibility threshold. We take this into account in our robustness checks but not as a critique; overall Bolsa Familia is regarded as a well-targeted endeavor (Lindert et. al. 2007).

Though the main question in this paper is the impact of a conditional cash transfer on teen fertility, we also check that the program is effective in its primary goal of education. Most research on conditional cash transfers for education suggests that we will find an increase in attendance. Cardoso and Sousa (2004) use Brazilian census data and propensity score matching to estimate the effect of Bolsa Escola (Bolsa Família's predecessor) on school attendance, among other outcomes. The authors find that school

attendance is significantly and positively related to receipt of Bolsa Escola transfers for children age ten to fifteen. While their analysis was done much before the 2008 expansion to 16 and 17-year olds, we expect to find similar results for adolescents, especially since the larger size of their transfer reflects the greater opportunity cost of their time. This outcome is confirmed by a study soon to be released by John Hoddinott at IFPRI; their press release reports that overall school attendance rises by 4.4 percentage points for Bolsa Familia recipients compared to non-Bolsa Familia recipients, and this rises to 19 percent for a fifteen year old girl. (IFPRI, 2011).

Throughout Latin America, conditional cash transfers have had similar impacts on teen attendance. Mexico's Oportunidades also expanded benefits to include young adults beginning in 2003, providing students with a savings account accessible upon graduation. Using a within-family sibling analysis, Parker et al. (2006) find that the expansion of Oportunidades increased attendance of older children by 9 to 14.4 percentage points.[3] Colombia's conditional cash transfer program, Familias en Accion was introduced in 2001 and targeted adolescents from the very beginning. Using difference-in-difference estimates of the randomized pilot program and using people living areas observably similar to treatment areas as a control group, Attanasio et al. (2005) find that Colombia's conditional cash transfer program increased school attendance among all children, with a much larger effect for teens aged fourteen to seventeen: teen girls' schooling increased a little more than three and four percentage points in urban and rural areas respectively, from baselines of 77% and 63% attendance respectively. Duryea and Morrison (2004) use household propensity score matching in addition to a means comparison and a probit model in an ex-post investigation of Costa Rica's conditional cash transfer program Superemonos. They

[3] Jovenes con Oportunidades offers progressively increasing benefits for further education, augmenting the incentive to stay in school to gain more benefits the following year and paying out much larger amount at the end.

find that children age thirteen to sixteen who participates in Superemonos attended school 2.4 to 5 percentage points more than similar teens whose families did not participate. These findings are not necessarily causal, but the direction of attendance (higher for beneficiaries, lower for non-beneficiaries) is consistent with other studies. To our knowledge, a regression discontinuity by Levy and Ohls (2007) is the only study that finds a positive impact of a CCT program on child school attendance overall but no significant effect on adolescent attendance; however the authors note that estimation power is low due to the small number of observations available for the sub-sample.

The literature on CCTs has moved forward now that it has been confirmed that the conditionalities are being met. The next step is to assess if there is an increase in human capital increases. Behrman, Parker and Todd (2011) do not find an increase in scores in the Mexico, but in Colombia Baez and Camacho do (2011). Other studies look at even more outcomes and find beneficial impacts on peer's schooling (Bobonis and Finan 2009), child labor (De Janvry et. al., 2006), and nutrition (Hoddinott et. al. 2010).

Our inquiry into teen fertility comes from theory that an increase in both education and income are mechanisms that affect fertility. Becker-style models of fertility decisions predict that increases in income can lead women to favor investing more in the ``quality" of their children (1981). If girls are forward-thinking, then those who can benefit from the adolescent conditional cash transfer should expect to attend school longer and reach a higher level of education due to the cash incentive. This could not only improve their capacity to invest in the quality of their children but it could also increase their expected lifetime, assuming that there are at least some returns to education with respect to infant mortality. Thus, knowing that the transfer will keep them in school, which facilitates their ability to create higher quality children in the future, teens postpone fertility.

Schooling may stimulate psychological effects in shifting preferences. In school, there may be more focus on future job opportunities, emphasizing the goal to work and social norms of postponed pregnancy, and longer exposure to these messages should serve to increase teens' absorption of them. Teens may also feel an increased importance in their identity as ``student'' so they feel less the need to establish an identity of ``mother'', which sociologists report as a key reason to have children (Mani and Mullin, 2001, United Nations Population Fund, 2005).

A conditional cash transfer involves a time constraint, in that teens will spend more time in school and have less free time to spend on other activities that increase the likelihood of pregnancy. These activities include not only the sexual act itself, but also alcohol and substance use, which can reduce inhibitions and make protected sex less likely. The adolescent conditional cash transfer should serve to increase the opportunity cost of getting pregnant if getting pregnant makes it more difficult to stay in school. Social stigma, physical discomfort, and lack of child care once the baby is born are all challenges to the continued attendance of a young mother. An increased opportunity cost of pregnancy could affect fertility decisions either directly through the teen herself or through increased pressure from parents.

Yet other factors could negate the ability of an adolescent conditional cash transfer to lower teen pregnancy or even encourage girls to get pregnant earlier. Most directly, attending school may expand girls' social networks and allow them to meet more potential sexual partners. Secondly, adding two years more income to Bolsa Família increases the lifetime cash benefit of having a child. An increase in the lifetime value of a child may actually encourage women to start child bearing earlier and have more children over the course of their lifetime. Similarly, when teens and their families receive additional income from an adolescent conditional cash transfer, they may feel another child is more affordable

as represented on the other side of the traditional Becker-style quantity-quality tradeoff. Though a common critique of welfare programs, this is not necessarily true of conditional cash transfers in Latin America. Stecklov et. al. (2006) take advantage of the random implementation of three conditional cash transfer programs--in Mexico, Honduras, and Nicaragua—and find that women are more likely to have given birth in the past twelve months or be at least three months pregnant only in Honduras, where incentives to have more children or be pregnant were strongest due to the design of the program. Finally, many of the mechanisms involved in postponing pregnancy rely on decisions based on expectations for the future. The extent to which all but the most direct of these mechanisms (i.e. school attendance limiting the time girls can spend on other activities leading to pregnancy and larger social networks that may allow them to meet more boys) will depend on how much teens value the future. Economists have established the existence of time-inconsistent preferences and hyperbolic discount rates, both of which lead individuals to make choices in the short-run that are not necessarily consistent with their long-term preferences (Rabin and O'Donahugh, 2001). Sexual activity, which presents immediate gratification coupled with long-term consequences, is precisely the type of activity likely to be ruled by hyperbolic discounting and time-inconsistent preferences; perhaps none of the long-term decisions discussed in the previous paragraph are playing a major role in teen girls' sexual decisions. Even so, with just a little bit of forethought girls can take preemptive action in Brazil by purchasing birth control or, as an afterthought, can take relatively cheap morning-after pills.

While our study only looks at short term impacts, there could be long term impacts of educational gains. These would result in an increase in returns in the labor market as a result of more education incentivizing teens to postpone pregnancy. Eventually a more educated workforce post-Bolsa Familia expansion could lead to an overall general rise in

wages, especially in the skilled sector, as in the o-ring theory of development (Kremer, 1993). This analysis is beyond the scope of our paper, but we mention them in light of our findings, acknowledging that long term effects are also plausible and should be later studied.

DATA

Pesquisa Nacional por Amostra de Domicilios (PNAD) is Brazil's yearly national household survey of approximately 150,000 households and 390,000 individuals each year. PNAD is representative of households at the state and national level since 2004, with least populated regions left out in earlier years. While the municipalities[4] sampled remain the same each year for our years of interest, the households are different each time, making it a repeated cross section. We use data from 2005-2009.

Since 2001, fertility questions have been included for all girls age 10 and older, including how many babies were born, both live and stillbirth; there are not questions on abortions which are illegal in the Catholic nation of Brazil, with the exception of rape or if the mother's life is in danger. We use income questions to calculate per capita income and determine a family's eligibility for Bolsa Familia; there is no direct question about participation in Bolsa Familia. The income question is posed to all members of the family age 10 and older, considering both formal and informal employment. This is not a perfect measure of Bolsa Familia eligibility as the family may report different income levels to municipal workers and, as mentioned earlier, income may have fluctuated since awarding the stipend. We use family characteristics included in the survey as control variables.

[4] Because the survey is not representative at the municipality level, municipality variables are not provided in the public data set.

EMPIRICAL MODEL

We limit our analysis to teen girls whose families are eligible for Bosla Familia based on their reported income. Our identification hinges on age-eligibility for the program expansion and comparison to non-eligible groups. Applying difference in differences, we will compare the attendance and fertility outcomes of those who were 17 at the time of treatment compared to those who were untreated at age 17 (the 18 year olds in 2008 and the 17 year olds in 2007). A similar comparison could be done between 15 and 16 year olds. The following chart visually represents the strategy of comparing treated cohorts to untreated cohorts.

Universe: Poor Girls	15 Yrs	16 Yrs	17 Yrs	18 Yrs
Before	Add. Control	Control	Control	Add. Control
After	Control ⟷	Treated	Treated	⟷ Control

This analysis, however, is not valid unless the trends of outcome variables align during pre-intervention years. We reject the alignment of schooling and fertility trends pre-2008 for impoverished fifteen- year- olds compared to impoverished 16 year olds, so we limit our analysis to seventeen-year-olds and eighteen-year-olds. Furthermore, fifteen-year-olds are not as pure a control group; they face similar incentives from an expected additional two years of Bolsa Familia stipends. Table 3 contains the trend checks for outcomes of seventeen- and eighteen-year-olds prior to 2008.

Our identifying equation is

$$O_{it} = A_{it}\delta + T_t\theta + (A_{it}T_t)\beta + \gamma_t + c + \mu_{it}$$

O_{it} The binary outcome variable of individual i in period t: school attendance or ever carried a pregnancy to term

A_{it} A dummy variable equal to 1 if individual i is 17 years old in survey year t

T_t A dummy variable equal 1 if the Bolsa Familia expansion was in place. For school attendance this corresponds to the years 2008 & 2009. For fertility we shift this forward a year to 2009 since the birth outcome is only observed 9 months after the event. Since the survey was collected in late September, it aligns very well to account for births in 2009 that were the result of pregnancies in 2008.

β is our coefficient of interest, the effect of the program.

γ_t year fixed effects

c constant

μ_{it} error term

For the education equation our sample includes all girls ages 17 and 18 who are in families with per capita income less than or equal to the Bolsa Familia eligibility threshold in 2007 and 2008. For the fertility result, we use 18 and 19-year-olds in years 2008 and 2009.

Clearly A_{it} is exogenous, as age depends on when one was born; furthermore a single pregnancy decision would not affect the year Bolsa Familia was extended, so T_t is also exogenous. While a family could be manipulating income levels to qualify for Bolsa Familia, they would not have taken into account the additional income for adolescents, so this, too, is independent of the policy change we are analyzing.

RESULTS & CONCLUSION

Using OLS, Table 4 shows our main results for a variety of specifications. Across the board, we find a five percentage point increase in attendance for these poor young women[5] after the Bolsa Familia expansion, a magnitude very much in line with the previous literature. Likewise the signs on the controls are as we'd expect. For fertility, however, there are no significant results although the sign is in the desirable direction. Additional regressions including survey weights and clustering (available upon request) confirm the robustness of these results within less than a percentage point difference in the coefficients (i.e. attendance impacts never dropped below .04), and similar significance. For fertility, likewise point estimates were similar but only one out of eleven specifications gave marginal significance. In Table 5 we include the estimates using a logit model, again to test the robustness of our specification. While we again find a significant increase in school attendance, the logit model also fails to identify any significant impacts of the Bolsa Familia expansion on fertility.

We next consider the possibility that girls who have left home likely have already dropped out of school and will not be incentivized to return with a CCT, as they are likely already undertaking an adult lifestyle. Thus the policy expansion may not have impacted them, so considering them as treated may be biasing our results. Therefore we limit our sample to girls who live with their parent(s) and the parent is considered the head of household. This result is found in columns one and two of Table 6. In columns three and four, we add in the few cases where the girl or her spouse of the head of the household and her mother lives with her. In either of these subsamples, our results align closely with those in our main regression.

[5] The same regressions for boys also find an increase in education.

We perform a placebo test to confirm that this additional attendance increase is unique to the treated group. Applying the same difference in difference analysis, we compare 18-year-olds to 19-year-olds in Table 7; we find no evidence of differential trends between the two age groups in attendance or fertility during the treatment period. Perhaps over time this would alter as peer effects come into play, but in the short term we find is no evidence of this.

As mentioned earlier in the background on Bolsa Familia, the income eligibility cut-off is not as clean as we would like. We take two approaches to deal with this. First we perform a placebo test using the wealthy. If Bolsa Familia leakage is significant, our results may be replicable among those with higher income levels. Table 8 shows the estimation using a sample consisting of the wealthy instead of the poor. Columns one and two apply our analysis to those girls in families with per capita income at twice the Bolsa Familia eligibility threshold and up; columns three and four limit that sample further to families with three times the Bolsa Familia eligibility income and up. We see no impact on attendance and though there is a marginal increase in fertility for the first group, the positive sign hints that Bolsa Familia is not mechanism for reducing teen fertility.

Our next approach in Table 9 also varies the size of the sample. In this case we include the lower portion of the income spectrum, truncating the sample at alternative income thresholds. For the extreme poor we find no attendance impacts, but do find them when including girls in families with up to 1.75 x the Bolsa Familia eligibility threshold. Beyond that, however, the impact fizzles out. This confirms the fuzziness of the threshold, suggesting that families estimate income downward when enrolling in Bolsa Familia or that some families' income levels have risen since enrolling in the program.

The lack of impact on the extreme poor inspires us to look for heterogeneous impacts among the moderately poor and the extreme poor as reported in Table 10. Indeed, we find no significant impact in attendance for the extreme poor (defined as having income below ½ the Bolsa Familia threshold), and the estimate for the moderate poor (½ the threshold to the threshold) is almost a 7% increase. These results are consistent with economic theory in that a little bit of money may incentivize those on the margin, but more will be required for the others; in it seems as that the additional R$30 a month was not a sufficient incentive for the extreme poor to attend school. Yet even with the higher attendance rate among the moderately poor, no corresponding decrease in fertility accrues. Our final table using the PNAD data analyzes impacts for rural and urban girls separately. These are of a similar nature, with increases in attendance accruing to the rural, who had a higher dropout rate and needed to be incentivized more to travel farther to school. In this case the R$30 was sufficient and had a much larger impact – 13%! In spite of this gain in attendance, still no significant impact on fertility is found.

Finally, in hope of finding a silver lining on the Bolsa Familia-teen pregnancy story, we test the subsample of teenage mothers to determine if they have an increase in attendance as a result of the policy expansion. While the magnitudes are positive, as seen in Table 11, again they are not significant. The well-being of the children of teen mothers will not be changing as a result higher earnings accruing to more education.

We have examined the impacts of broadening the coverage of Brazil's conditional cash transfer program Bolsa Familia on teen girl's attendance and fertility. The conditional cash transfer increased school attendance overall by around 5 percent, with the most benefits accruing to rural 17-year-olds who increased attendance by thirteen percentage points. A corresponding impact reducing teen fertility is not found, even among those who

improved most in attendance, and we find no increase in the school attendance of teen mothers either. These findings reject the immediate causal relationship between education and fertility and are an indication that a policy that directly targets teen pregnancy is needed in Brazil. The general belief that improving schooling will decrease teen fertility has not been shown to hold tightly, at least not in the short run. While this may change in the long term, the severity of Brazil's teen pregnancy epidemic requires immediate action in ensure a better future for the next generation.

Bibliography

de Almeida, M. A.S. 2001. “Treze Meninas e Suas Histórias. Um Estudo Sobre Maes Adolescentes.” *Interface (Botucatu)* 5 (9).

Anon. 2008. Planejamento Familiar no Brasil: 50 Anos de Historia. United Nations Population Fund, July.

Anon. Pesquisa Qualitativa da Avaliação do Projeto Agente Jovem — Ministério do Desenvolvimento Social e Combate à Fome. http://www.mds.gov.br/gestaodainformacao/biblioteca/secretaria-de-avaliacao-e-gestao-de-informacao-sagi/cadernos-de-estudos/agente-jovem-pesquisa-qualitativa-da-avaliacao-do-projeto-agente-jovem/pesquisa-qualitativa-da-avaliacao-do-projeto-agente-jovem.

Anon. ProJovem Adolescente – Critérios. Ministério do Desenvolvimento Social e Combate à Fome. http://mds.gov.br/falemds/perguntas-frequentes/assistencia-social/psb-protecao-especial-basica/projovem-adolescente-15-a-17-anos/projovem-adolescente-criterios.

Anon. WHO Adolescent pregnancy. http://www.who.int/making_pregnancy_safer/topics/adolescent_pregnancy/en/index.html

Apfel, N. H, and V. Seitz. 1991. “Four models of adolescent mother-grandmother relationships in Black inner-city families.” *Family Relations* 40 (4): 421–429.

Attanasio, O., E. Battistin, E. Fitzsimons, and M. Vera-Hernandez. 2005. “How effective are conditional cash transfers? Evidence from Colombia.” Working Paper.

Baird, Sarah, Ephraim Chirwa, Craig McIntosh, and Berk Ozler. 2010. “The Short-Term Impacts of a Schooling Conditional Cash Transfer Program on the Sexual Behavior of Young Women.” Unpublished Manuscript.

Becker, Gary S. 1981. *A Treatise on the Family*. Harvard University Press.

Behrman, J.R., S.W. Parker, and P.E. Todd. 2006. *Long-Term Impacts of the Oportunidades Conditional Cash Transfer Program on Rural Youth in Mexico*. Ibero-Amerika Institut für Wirtschaftsforschung (IAI), Georg-August-Universität Göttingen.

Berry, James. 2009. “Child Control in Education Decisions: An Evaluation of Targeted Incentives to Learn in India.” Working Paper.

Bobonis, Gustavo, and Frederico Finan. 2009. “Endogenous Social Interaction Effects in School Participation in Rural Mexico.” *The Review of Economics and Statistics* 91 (4): 695-716.

Braido, L. H.B, P. Olinto, and H. S Perrone. 2005. “Gender Bias in Intrahousehold Allocation: Evidence from an Unintentional Experiment.” Getulio Vargas Foundation, Rio de Janeiro.

Cardoso, Eliana, and Andre Portela Souza. 2004. The Impact of Cash Transfers on Child Labor and School Attendance in Brazil. Vanderbilt University Working Paper (0407).

Cleland, John. 2002. “Education and Future Fertility Trends, With Special Reference to Mid-Transitional Countries.” *United Nations, Economic and Social Affairs*.

Country Support Team for Latin America and the Caribbean. 2005. Salud Sexual y Reproductiva Adolescente en el Comienzo del Siglo XXI en America Latina y el Caribe. United Nations Population Fund, December.

Diniz Alves, Jose Eustaquio, and Suzana Cavenaghi. 2007. Timing of Childbearing in Below Replacement Fertility Regimes: How and Why Brazil is Different. Working Paper? Check this.

Duryea, S., A. Morrison, and Inter-American Development Bank. Research Dept. 2004. The effect of conditional transfers on school performance and child labor: Evidence from an ex-post impact evaluation in Costa Rica. Inter-American Development Bank, Research Dept.

La Ferrara, Eliana, Chong Alberto, and Suzanne Duryea. 2008. Soap Operas and Fertility: Evidence from Brazil. BREAD Working Paper 172, March.

Ferro, Andrea R, and Alexandre Nicollela. 2007. The Impact of Conditional Cash Transfer Programs on Household Work Decisions in Brazil. Working Paper.

Fiszbein, Ariel, and Norbert Schady. 2009. Conditional Cash Transfers: Reducing Present and Future Poverty. The World Bank - A World Bank Policy Research Report.

Florez, Carmen Elisa, and Jairo Nunez. 2001. Teenage Childbearing in Latin American Countries. Centro de Estudios sobre Desarrollo Económico.

Glewwe, P., and A.L. Kassouf. 2008. "The Impact of the Bolsa Escola/Familia Conditional Cash Transfer Program on Enrollment, Grade Promotion and Drop-Out Rates in Brazil." *Encontro Nacional de Economia (ANPEC). Baia*.

Glewwe, Paul, and Ana Lucia Kassouf. 2008. The Impact of the Bolsa Escola/Familia Conditional Cash Transfer Program on Enrollment, Grade Promotion and Drop Out Rates in Brazil. Working Paper.

Gupta, N., and I. da Costa Leite. 1999. "Adolescent Fertility Behavior: Trends and Determinants in Northeastern Brazil." *International Family Planning Perspectives* 25 (3): 125–130.

Hamilton, Brady E., Joyce A. Martin, and Stephanie J. Ventura. 2010. National Vital Statistics Report, vol. 58 no. 16. US Department of Health and Human Services: National Vital Statistics System, April.

Hoddinott, John, Emmanuel Skoufias, and Ryan Washburn. 2000. The Impact of Progresa on Consumption: A Final Report. IFPRI.

Hotz, V. J, S. W McElroy, and S. G Sanders. 2005. "Teenage Childbearing and Its Life Cycle Consequences: Exploiting a Natural Experiment." *Journal of Human Resources* 40 (3): 683.

de Janvry, A., F. Finan, E. Sadoulet, and R. Vakis. 2006. "Can Conditional Cash Transfer Programs Serve as Safety Nets in Keeping Children at School and from Working when Exposed to Shocks?" *Journal of Development Economics* 79 (2): 349–373.

Kaplan, Hillard. 1994. "Evolutionary and Wealth Flows Theories of Fertility: Empirical Tests and New Models." *Population and Development Review* 20 (4): 753-791.

Klawon, E., and J. Tiefenthaler. 2001. "Bargaining Over Family Size: the Determinants of Fertility in Brazil." *Population Research and Policy Review* 20 (5): 423–440.

Klein, Jonathan D., and and the Committee on Adolescence. 2005. "Adolescent Pregnancy: Current Trends and Issues." *Pediatrics* 116 (1) (July 1): 281 -286.

Kremer, M. 1993. "The O-ring theory of economic development." *The Quarterly Journal of Economics* 108 (3): 551-575.

Lam, David, and Suzanne Duryea. 1999. "Effects of Schooling on Fertility, Labor Supply, and Investments in Children, with Evidence from Brazil." *The Journal of Human Resources* 34 (1) (January 1): 160-192.

Levy, D., and J. Ohls. 2007. "Evaluation of Jamaica's PATH program: final report."

Lindert, Kathy, Anja Linder, Jason Hobbs, and Benedicte de la Briere. 2007. The Nuts and Bolts of Brazil's Bolsa Família Program: Implementing Conditional Cash Transfers in a Decentralized Context. The World Bank.

Mani, A., and C. H Mullin. 2001. "Social Approval and Teenage Childbearing." Unpublished Manuscript.

Marques, N. M, and J. Simons. 2001. Motivational Determinants of Teenage Pregnancy in a Deprived Area of Recife, Brazil. IUSSP General Population Conference. Salvador, Bahia, August.

Marteleto, Leticia. "Family Size, Adolescents' Schooling and Demographic Transition: Evidence from Brazil." *Demographic Research* 23.

Maynard, R. A. 1996. "Kids having kids: Economic costs and social consequences of teen pregnancy."

McCallum, C., and A. Reis. 2005. "Childbirth as Ritual in Brazil: Young Mothers' Experiences." *Ethnos* 70 (3): 335–360.

Menezes, G. M.S, E. M.L Aquino, and D. O Silva. 2006. "Induced Abortion During Youth: Social Inequalities in the Outcome of the First Pregnancy." *Cadernos de Saúde Pública* 22: 1431–1446.

Milazzo, Annamaria. 2009. Conditional Cash Transfers: An annotated Bibliography. January.

Ministerio de Desenvolvimento Social. 2009. "Relatorio dos Condicionalidades do Programa Bolsa Familia 2008." Secretaria Nacional de Renda de Cidadania.

———. 2010. "Governo Estende Benefício do Programa Bolsa Família a Adolescentes de 16 e 17 anos.*"* Informe Controle Social - Bolsa Familia, January.

Miranda-Ribeiro, P. 2003. "The Stud, the Virgin, the Queer, and the Slut: a Qualitative Study of Teenage Sexual Identity in Three Brazilian Communities." *Textos para Discussćo Cedeplar-UFMG*.

Morley, Samuel, and David Coady. 2003. From Social Assistance to Social Development: Targeted Education Subsidies in Developing Countries. Center for Global Development and the International Food Policy Research Institute. http://www.ifpri.org/pubs/cp/socialassist/socialassist.pdf.

O'Donoghue, T., and M. Rabin. 2001. *Risky Behavior Among Youths: Some Issues From Behavioral Economics*. University of Chicago Press.

Ozer, Emily J, Lia CH Fernald, Ann Weber, Emily P Flynn, and Tyler J VanderWeele. 2011. "Does Alleviating Poverty Affect Mothers' Depressive Symptoms? A Quasi-Experimental Investigation of Mexico's Oportunidades Programme." *International Journal of Epidemiolgy* 40 (3) (July).

Portal Brasil. Salário Mínimo Brasileiro. http://www.portalbrasil.net/salariominimo.htm#sileiro.

Rawlings, Laura B, and Gloria M Rubio. 2003. Evaluationg the Impact of Conditional Cash Transfer Programs: Lessons from Latin America. World Bank Policy Research Working Paper 3119, August.

Reynolds, Sarah. 2010. "Intergenerational Intrahousehold Allocation: Teen Mothers and Their Mothers in Salvador, Brazil." *Unpublished Manuscript*.

Rocha, Editor, Marcelo. 2010. *Monitoramento SUAS: Censo CRAS 2008*. Brasilia: Ministerio do Desenvolvimento Social e Combate a Fome; SAGI; SNAS.

Rodriguez, Jorge. 2011. High Adolescent Fertility in the Context of Declining Fertility in Latin America. United Nations Expert Group Meeting on Adolescents, Youth and Development, July.

Secretaria de Renda de Cidadania. 2010. *Relatório de Condicionalidades do Programa Bolsa Família Primer semestre de 2010*. Brasilia: Ministerio do Desenvolvimento Social e Combate a Fome; SAGI; SNAS.

Stecklov, Guy, Paul Winters, Jessica Todd, and Ferdinando Regalia. 2007. "Unintended Consequences of Poverty Programs on Childbearing in Developing Countries: Experimental Evidence from Latin America." *Population Studies* 61 (2) (June): 125-140.

Thomas, Duncan. 1990. "Intra-Household Resource Allocation: An Inferential Approach." *The Journal of Human Resources* 25 (4): 635-664.

United Nations Statistics Division. 2000-2008. Demographic Yearbook. *Table 10. Live births by age of mother, sex and urban/rural residence: latest available year*.

Urdinola, Piedad, and Carlos Ospino. 2010. "Long Term Consequences of Adolescent Fertility in Colombia." Unpublished Manuscript.

Vaitsman, Jeni, Gabriela Rieveres Borges de andrade, and Luis Otavio Farias. 2009. "Social Protection in Brazil: What Has Changed in Social Assistance After the 1998 Constitution." *Ciencia e Saude Colectiva* 14 (3): 731-741.

Table 1: Summary Statistics

Age	15	16	17	18
Attends School	84.8%	75.8%	63.1%	44.9%
Gave birth in the past year	5.7%	10.1%	14.6%	19.5%
Has Kids	7.1%	15.1%	25.7%	39.4%
Income per capita (R$)	68.28	65.55	62.34	59.82
% with incomes in BF "extreme poor" range	38.1%	39.9%	42.6%	45.5%
# HH members <5 (excluding girl's own children)	0.34	0.33	0.28	0.26
Total # HH members (excluding girl's own children)	5.75	5.62	5.38	5.12
% of HHs where head has < primary	33.0%	33.1%	31.7%	29.8%
% of HHs where head w/primary incomplete	47.8%	45.5%	46.0%	44.9%
% of HHs where head w/primary complete	10.9%	12.3%	13.1%	13.9%
% of HHs where head w/secondary complete	7.7%	8.5%	8.6%	10.5%
% of HHs where head w/>secondary education	0.6%	0.6%	0.6%	0.9%
% living in urban areas	64.8%	66.0%	66.2%	67.7%
% living with parent(s)	84.2%	80.4%	75.3%	67.3%
% whose moms live in HH with them	86.7%	82.0%	77.2%	67.8%
% living with family members (parents or other relatve)	96.3%	93.1%	89.0%	81.6%
% living on own (head or spouse of head)	2.9%	6.2%	10.1%	17.4%
Sample Size	4,785	4,421	4,277	4,035

Table 2: Trend Check

Outcome:	Currently Attends School			Gave birth to a child (live birth or stillbirth) in the past year		
	(1)	(2)	(3)	(4)	(5)	(6)
	2005 to 2006	2006 to 2007	All years, 2007 excluded	2005 to 2006	2006 to 2007	All years, 2007 excluded
Age 17 * 2005			-0.049			-0.019
			(0.032)			(0.025)
Age 17 * 2006	0.022		-0.029		0.016	
	(0.030)		(0.032)		(0.025)	
Age 17 * 2007		0.029		0.002		-0.016
		(0.032)		(0.024)		(0.025)
Age 17	0.126	0.148	0.177	-0.027	-0.025	-0.009
	(0.021)**	(0.021)**	(0.024)**	(0.017)	(0.016)	(0.019)
# HH members under 5[(1)]	-0.074	-0.065	-0.077	0.036	0.03	0.031
	(0.014)**	(0.015)**	(0.012)**	(0.011)**	(0.012)**	(0.009)**
# HH members[(1)]	0.046	0.041	0.045	-0.031	-0.029	-0.028
	(0.004)**	(0.004)**	(0.003)**	(0.003)**	(0.003)**	(0.002)**
Highest education of HH head: Less than primary	-0.296	-0.185	-0.263	-0.021	-0.037	-0.05
	(0.111)**	(0.104)+	(0.086)**	(0.088)	(0.080)	(0.067)
Highest education of HH head: Primary incomplete	-0.281	-0.165	-0.249	-0.022	-0.031	-0.041
	(0.111)*	(0.104)	(0.086)**	(0.087)	(0.080)	(0.067)
Highest education of HH head: Primary complete	-0.226	-0.12	-0.19	-0.013	0	-0.037
	(0.112)*	(0.105)	(0.087)*	(0.088)	(0.081)	(0.067)
Highest education of HH head: Secondary complete	-0.197	-0.126	-0.175	-0.01	0.003	-0.021
	(0.113)+	(0.106)	(0.088)*	(0.089)	(0.081)	(0.068)
Per Capita Family Income in R$1000	2.188	1.929	2.087	-2.237	-1.901	-2.075
	(0.205)**	(0.202)**	(0.170)**	(0.161)**	(0.155)**	(0.132)**
Constant	0.375	0.296	0.355	0.503	0.47	0.495
	(0.111)**	(0.105)**	(0.086)**	(0.088)**	(0.081)**	(0.067)**
Observations	4100	3674	5688	4100	3674	5688
R-squared	0.09	0.08	0.09	0.07	0.07	0.07

(1) Counts of # HH members exclude girls' own children

(2) Sample includes poor (BF-eligible) girls aged 17 and 18 only

(3) All regressions include urban-state-year fixed effects

(4) Standard errors in parentheses

(5) + significant at 10%; * significant at 5%; ** significant at 1%

Table 3: Main Results

Outcome:	Currently Attends School						Gave birth to a child (live-birth or still-birth) in the past year					
	(1)	(2)	(3)	(4)	(5)	(6)	(9)	(10)	(11)	(12)	(13)	(14)
	No Controls	HH & Urban Controls	HH, Urban & Income Controls	State & Year FEs	State-Year FEs	Urban-State-Year FEs	No Controls	HH & Urban Controls	HH, Urban & Income Controls	State & Year FEs	State-Year FEs	Urban-State-Year FEs
Of treatment age in time for policy impact	0.042	0.050	0.056	0.051	0.054	0.053	-0.005	-0.011	-0.006	-0.011	-0.008	-0.010
	(0.023)+	(0.023)*	(0.022)*	(0.022)*	(0.023)*	(0.023)*	(0.024)	(0.024)	(0.024)	(0.024)	(0.018)	(0.024)
Age eligible	0.164	0.153	0.148	0.150	0.149	0.149	-0.024	-0.020	-0.016	-0.014	-0.013	-0.013
	(0.013)**	(0.013)**	(0.013)**	(0.013)**	(0.014)**	(0.014)**	(0.010)*	(0.010)*	(0.010)+	(0.010)	(0.010)	(0.009)
Post-treatment period[1]	0.009	0.008	(0.010)				(0.015)	(0.015)	(0.002)			
	(0.017)	(0.017)	(0.017)				(0.018)	(0.018)	(0.017)			
# HH members under 5[2]		-0.097	-0.092	-0.087	-0.087	-0.087		0.025	0.022	0.019	0.019	0.017
		(0.010)**	(0.010)**	(0.010)**	(0.009)**	(0.010)**		(0.008)**	(0.008)**	(0.008)*	(0.008)*	(0.008)*
# HH members[2]		0.045	0.046	0.044	0.044	0.044		-0.025	-0.026	-0.027	-0.027	-0.027
		(0.003)**	(0.003)**	(0.003)**	(0.002)**	(0.003)**		(0.002)**	(0.002)**	(0.002)**	(0.002)**	(0.002)**
Highest education of HH head: Less than primary		-0.204	-0.256	-0.270	-0.275	-0.270		-0.016	0.015	0.024	0.015	0.016
		(0.054)**	(0.055)**	(0.054)**	(0.063)**	(0.060)**		(0.049)	(0.050)	(0.050)	(0.050)	(0.051)
Highest education of HH head: Primary incomplete		-0.205	-0.263	-0.268	-0.270	-0.260		0.008	0.042	0.047	0.037	0.039
		(0.054)**	(0.054)**	(0.054)**	(0.062)**	(0.061)**		(0.048)	(0.050)	(0.050)	(0.050)	(0.052)
Highest education of HH head: Primary complete		-0.148	-0.204	-0.204	-0.210	-0.203		-0.006	0.029	0.032	0.023	0.024
		(0.055)**	(0.056)**	(0.055)**	(0.064)**	(0.061)**		(0.049)	(0.051)	(0.050)	(0.051)	(0.052)
Highest education of HH head: Secondary complete		-0.139	-0.186	-0.192	-0.194	-0.183		0.009	0.035	0.042	0.034	0.035
		(0.056)*	(0.056)**	(0.056)**	(0.063)**	(0.062)**		(0.050)	(0.051)	(0.051)	(0.053)	(0.055)
Lives in urban area		0.012	0.011	0.021	0.018			0.008	0.007	0.005	0.003	
		(0.012)	(0.012)	(0.012)+	(0.011)			(0.010)	(0.010)	(0.010)	(0.011)	
Per Capita Family Income in R$1000			1.992	1.962	1.998	1.994			-1.540	-1.506	-1.491	-1.430
			(0.130)**	(0.130)**	(0.126)**	(0.128)**			(0.114)**	(0.115)**	(0.113)**	(0.112)**
Constant	0.448	0.422	0.359	0.326	0.368	0.374	0.220	0.334	0.394	0.375	0.400	0.396
	(0.009)**	(0.056)**	(0.057)**	(0.070)**	(0.062)**	(0.061)**	(0.007)**	(0.050)**	(0.051)**	(0.062)**	(0.054)**	(0.052)**
Observations	8,312	8,312	8,312	8,312	8,312	8,312	7,929	7,929	7,929	7,929	7,929	7,929
R-squared	0.03	0.07	0.1	0.11	0.09	0.09	0.00	0.02	0.05	0.06	0.05	0.05
State FEs	NO	NO	NO	YES	NO	NO	NO	NO	NO	YES	NO	NO
Year FEs	NO	NO	NO	YES	NO	NO	NO	NO	NO	YES	NO	NO
Sate-Year FEs	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	YES	NO
Urban State-Year FEs	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	YES

(1) Post-treatment period is 2008 and later for attendance and 2009 for fertility

(2) Counts of # HH members exclude girls' own children

(3) Robust standard errors in parentheses

(4) + significant at 10%; * significant at 5%; ** significant at 1%

Table 4: Logit

Outcome:	Currently Attends School						Gave birth to a child (live-birth or still-birth) in the past year					
	(1)	(2)	(3)	(4)	(5)	(6)	(9)	(10)	(11)	(12)	(13)	(14)
	No Controls	HH & Urban Controls	HH, Urban & Income Controls	State & Year FEs	State-Year FEs	Urban-State-Year FEs	No Controls	HH & Urban Controls	HH, Urban & Income Controls	State & Year FEs	State-Year FEs	Urban-State-Year FEs
Of treatment age in time for policy impact	0.183	0.221	0.269	0.25	0.265	0.256	-0.044	-0.081	-0.061	-0.094	-0.081	-0.09
	(0.097)+	(0.099)*	(0.101)**	(0.101)*	(0.103)**	(0.103)*	(0.155)	(0.156)	(0.160)	(0.162)	(0.162)	(0.164)
Age eligible	0.663	0.642	0.636	0.658	0.648	0.65	-0.148	-0.118	-0.097	-0.083	-0.08	-0.086
	(0.054)**	(0.055)**	(0.056)**	(0.056)**	(0.056)**	(0.057)**	(0.060)*	(0.061)+	(0.062)	(0.063)	(0.063)	(0.064)
Post-treatment period[1]	0.034	0.034	-0.043				-0.088	-0.085	-0.019			
	(0.069)	(0.071)	(0.073)				(0.108)	(0.109)	(0.112)			
# HH members under 5[2]		-0.427	-0.415	-0.399	-0.395	-0.396		0.165	0.147	0.133	0.135	0.12
		(0.046)**	(0.046)**	(0.047)**	(0.045)**	(0.045)**		(0.061)**	(0.061)*	(0.061)*	(0.061)*	(0.061)*
# HH members[2]		0.201	0.207	0.204	0.201	0.2		-0.177	-0.186	-0.191	-0.193	-0.19
		(0.013)**	(0.013)**	(0.013)**	(0.012)**	(0.012)**		(0.016)**	(0.017)**	(0.017)**	(0.016)**	(0.016)**
Highest education of HH head: Less than primary		-0.913	-1.172	-1.261	-1.276	-1.247		-0.116	0.09	0.128	0.081	0.082
		(0.272)**	(0.284)**	(0.287)**	(0.294)**	(0.294)**		(0.294)	(0.309)	(0.305)	(0.301)	(0.304)
Highest education of HH head: Primary incomplete		-0.91	-1.196	-1.248	-1.252	-1.199		0.038	0.27	0.282	0.231	0.24
		(0.270)**	(0.282)**	(0.285)**	(0.292)**	(0.292)**		(0.291)	(0.306)	(0.302)	(0.297)	(0.300)
Highest education of HH head: Primary complete		-0.667	-0.935	-0.956	-0.98	-0.94		-0.044	0.181	0.185	0.133	0.141
		(0.275)*	(0.287)**	(0.289)**	(0.296)**	(0.297)**		(0.297)	(0.313)	(0.308)	(0.303)	(0.306)
Highest education of HH head: Secondary complete		-0.626	-0.85	-0.896	-0.903	-0.842		0.033	0.207	0.233	0.194	0.199
		(0.277)*	(0.289)**	(0.292)**	(0.298)**	(0.299)**		(0.299)	(0.314)	(0.310)	(0.305)	(0.307)
Lives in urban area		0.053	0.054	0.096	0.082			0.063	0.041	0.032	0.019	
		(0.051)	(0.051)	(0.053)+	(0.054)			(0.064)	(0.065)	(0.067)	(0.068)	
Per Capita Family Income in R$1000			8.759	8.78	8.909	8.834			-9.649	-9.5	-9.405	-9.024
			(0.587)**	(0.599)**	(0.596)**	(0.602)**			(0.717)**	(0.722)**	(0.701)**	(0.708)**
Constant	-0.207	-0.325	-0.603	-0.749			-1.265	-0.511	-0.161	-0.254		
	(0.038)**	(0.279)	(0.291)*	(0.350)*			(0.042)**	(0.301)+	(0.315)	(0.388)		
Observations	8312	8312	8312	8312	8312	8277	7929	7929	7929	7929	7923	7795
State FEs	NO	NO	NO	YES	NO	NO	NO	NO	NO	YES	NO	NO
Year FEs	NO	NO	NO	YES	NO	NO	NO	NO	NO	YES	NO	NO
Sate-Year FEs	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	YES	NO
Urban State-Year FEs	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	YES

Robust standard errors in parentheses

+ significant at 10%; * significant at 5%; ** significant at 1%

Table 5: Limited Sample Robustness Check

	(1)	(2)	(3)	(4)
	GIRLS WHO LIVE WITH PARENTS		**GIRLS WHOSE MOMS LIVE IN HH WITH THEM**	
	Attends School	***Gave birth past year***	***Attends School***	***Gave birth past year***
Of treatment age in time for policy impact	0.057	-0.014	0.057	-0.013
	(0.026)*	(0.028)	(0.025)*	(0.027)
Age eligible	0.14	0.001	0.14	-0.001
	(0.017)**	-0.01	(0.017)**	-0.01
# HH members under 5[(1)]	-0.046	0.005	-0.054	0.005
	(0.011)**	-0.009	(0.011)**	-0.009
# HH members[(1)]	0.006	-0.007	0.008	-0.007
	(0.003)+	(0.002)**	(0.003)*	(0.002)**
Highest education of HH head: Less than primary	-0.197	-0.035	-0.163	0.015
	(0.080)*	-0.071	(0.080)*	-0.071
Highest education of HH head: Primary incomplete	-0.148	-0.019	-0.119	0.034
	(0.080)+	-0.071	-0.079	-0.071
Highest education of HH head: Primary complete	-0.134	-0.042	-0.1	0.009
	-0.083	-0.072	-0.081	-0.072
Highest education of HH head: Secondary complete	-0.106	-0.038	-0.082	0.024
	-0.078	-0.073	-0.079	-0.073
Per Capita Family Income in R$1000	2.337	-2.688	2.257	-2.571
	(0.169)**	(0.136)**	(0.167)**	(0.140)**
Constant	0.55	0.365	0.522	0.306
	(0.078)**	(0.070)**	(0.079)**	(0.071)**
Observations	5778	4990	5836	5012
R-squared	0.07	0.1	0.07	0.1

(1) Post-treatment period is 2008 and later for attendance and 2009 for fertility

(2) Counts of # HH members exclude girls' own children

(3) Sample includes poor (BF eligible) girls aged 17 and 18 only

(4) All regressions incluse urban-state-year fixed effects

(5) Robust standard errors in parentheses

(6) + significant at 10%; * significant at 5%; ** significant at 1%

Table 6: Placebo Test Ages 18 & 19

Outcome:	Currently Attends School		Gave birth to a child in the past year	
	(1) HH, Urban & Income Controls	(2) Urban-State-Year FEs	(3) HH, Urban & Income Controls	(4) Urban-State-Year FEs
Of "treatment age" (placebo) in time for policy impact	0.007	0.006	0.006	0.011
	(0.023)	(0.022)	(0.025)	(0.021)
"Age eligible" (Placebo)	0.103	0.105	-0.005	-0.004
	(0.013)**	(0.013)**	(0.010)	(0.012)
Post-treatment period[1]	-0.008		-0.008	
	(0.016)		(0.018)	
# HH members under 5[2]	-0.081	-0.081	0.019	0.016
	(0.010)**	(0.009)**	(0.008)*	(0.009)+
# HH members[2]	0.044	0.044	-0.023	-0.022
	(0.003)**	(0.003)**	(0.002)**	(0.002)**
Highest education of HH head: Less than primary	-0.172	-0.199	-0.035	-0.03
	(0.059)**	(0.058)**	(0.054)	(0.052)
Highest education of HH head: Primary incomplete	-0.189	-0.2	-0.01	-0.008
	(0.059)**	(0.057)**	(0.053)	(0.052)
Highest education of HH head: Primary complete	-0.152	-0.153	-0.005	-0.005
	(0.060)*	(0.055)**	(0.054)	(0.053)
Highest education of HH head: Secondary complete	-0.138	-0.148	-0.017	-0.016
	(0.060)*	(0.058)*	(0.055)	(0.054)
Lives in urban area	0.01		0.015	
	(0.012)		(0.010)	
Per Capita Family Income in R$1000	1.202	1.161	-1.414	-1.345
	(0.127)**	(0.127)**	(0.114)**	(0.128)**
Constant	0.238	0.259	0.421	0.419
	(0.061)**	(0.057)**	(0.055)**	(0.051)**
Observations	7,929	7,929	7,860	7,860
R-squared	0.06	0.06	0.04	0.03
State FEs	YES	NO	NO	NO
Year FEs	YES	NO	NO	NO
Sate-Year FEs	NO	YES	YES	NO
Urban State-Year FEs	NO	NO	NO	YES

Table 7: Placebo Test Wealthy

	(1)	(2)	(3)	(4)
	Double BF cutoff		**Triple BF cutoff**	
	PC Family Income		**PC Family Income**	
	Attends School	***Gave birth past year***	***Attends School***	***Gave birth past year***
Of treatment age in time for policy impact	0.025	0.011	0.011	0.006
	(0.021)	(0.006)+	(0.023)	(0.006)
Age eligible	0.229	-0.01	0.219	-0.005
	(0.013)**	(0.003)**	(0.015)**	(0.002)*
# HH members under 5[(1)]	-0.07	0.006	-0.077	-0.002
	(0.011)**	(0.005)	(0.014)**	(0.004)
# HH members[(1)]	0.033	-0.012	0.036	-0.009
	(0.003)**	(0.001)**	(0.003)**	(0.001)**
Highest education of HH head: Less than primary	-0.157	0.009	-0.143	0.009
	(0.020)**	(0.004)*	(0.025)**	(0.005)+
Highest education of HH head: Primary incomplete	-0.164	0.017	-0.167	0.016
	(0.014)**	(0.004)**	(0.015)**	(0.004)**
Highest education of HH head: Primary complete	-0.113	0.015	-0.102	0.009
	(0.014)**	(0.004)**	(0.015)**	(0.003)**
Highest education of HH head: Secondary complete	-0.07	0.01	-0.057	0.01
	(0.013)**	(0.003)**	(0.013)**	(0.003)**
Per Capita Family Income in R$1000	0.052	-0.01	0.043	-0.004
	(0.005)**	(0.001)**	(0.005)**	(0.001)**
Constant	0.523	0.074	0.53	0.052
	(0.016)**	(0.005)**	(0.017)**	(0.005)**
Observations	17,602	18,422	11,454	12,408
R-squared	0.11	0.02	0.11	0.01

(1) Post-treatment period is 2008 and later for
(2) Counts of # HH members exclude girls' own
(3) Sample includes non-poor (non-eligible for BF)
(4) All regressions incluse urban-state-year fixed
(5) Robust standard errors in parentheses
(6) + significant at 10%; * significant at 5%; **

Table 8: Income Salience

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	PC Fam Income 3/4 below actual cutoff		**PC Fam Income 1/2 below actual cutoff**		**PC Fam Income1/2 above actual cutoff**		**PC Fam Income double actual cutoff**	
	Attends School	***Gave birth past year***	***Attends School***	***Gave birth past year***	***Attends School***	***Gave birth past year***	***Attends School***	***Gave birth past year***
Of treatment age in time for policy impact	0.032	0.05	0.033	0.021	0.049	0.000	0.023	0.001
	(0.047)	(0.051)	(0.039)	(0.036)	(0.017)**	(0.016)	(0.016)	(0.012)
Age eligible	0.096	-0.029	0.116	-0.03	0.161	-0.016	0.178	-0.019
	(0.027)**	(0.020)	(0.021)**	(0.015)+	(0.011)**	(0.006)**	(0.011)**	(0.005)**
# HH members under 5[(1)]	-0.056	-0.011	-0.064	0.007	-0.092	0.013	-0.094	0.011
	(0.020)**	(0.018)	(0.014)**	(0.012)	(0.009)**	(0.006)*	(0.008)**	(0.005)*
# HH members[(1)]	0.015	0.001	0.03	-0.016	0.045	-0.026	0.044	-0.024
	(0.005)**	(0.005)	(0.004)**	(0.003)**	(0.003)**	(0.002)**	(0.002)**	(0.001)**
Highest education of HH head: Less than primary	-0.368	0.121	-0.344	0.094	-0.175	-0.003	-0.158	-0.006
	(0.084)**	(0.071)+	(0.070)**	(0.067)	(0.044)**	(0.036)	(0.037)**	(0.024)
Highest education of HH head: Primary incomplete	-0.377	0.138	-0.349	0.115	-0.169	0.018	-0.155	0.008
	(0.082)**	(0.070)+	(0.069)**	(0.067)+	(0.043)**	(0.036)	(0.037)**	(0.024)
Highest education of HH head: Primary complete	-0.257	0.122	-0.261	0.095	-0.115	0.005	-0.101	0.004
	(0.080)**	(0.070)+	(0.067)**	(0.065)	(0.045)*	(0.036)	(0.038)**	(0.024)
Highest education of HH head: Secondary complete	-0.187	0.067	-0.215	0.061	-0.11	0.038	-0.106	0.032
	(0.088)*	(0.076)	(0.075)**	(0.071)	(0.045)*	(0.039)	(0.038)**	(0.025)
Per Capita Family Income in R$1000	9.047	-6.251	3.974	-2.856	1.276	-1.251	1.009	-1.107
	(1.265)**	(1.234)**	(0.384)**	(0.355)**	(0.080)**	(0.067)**	(0.055)**	(0.049)**
Constant	0.564	0.227	0.495	0.315	0.305	0.408	0.309	0.396
	(0.082)**	(0.075)**	(0.069)**	(0.069)**	(0.044)**	(0.036)**	(0.038)**	(0.025)**
Observations	2,258	2,398	3,651	3,670	13,497	12,742	18,031	17,127
R-squared	0.07	0.02	0.07	0.03	0.09	0.06	0.09	0.07

(1) Post-treatment period is 2008 and later for

(2) Counts of # HH members exclude girls' own

(3) Sample includes poor (BF eligible) girls aged 17

(4) All regressions incluse urban-state-year fixed

(5) Robust standard errors in parentheses

(6) + significant at 10%; * significant at 5%; **

Table 9: Heterogeneous Effects Poor Non-Poor

Outcome:	Extreme Poor Only		Poor Only (no extreme poor)	
	Attends School	Gave birth past year	Attends School	Gave birth past year
Of treatment age in time for policy impact	0.033	-0.005	0.069	0.009
	(0.039)	(0.032)	(0.033)*	(0.044)
Age eligible	0.118	-0.004	0.175	-0.008
	(0.022)**	(0.013)	(0.019)**	(0.018)
# HH members under 5[(1)]	-0.064	0.033	-0.107	0.014
	(0.016)**	(0.011)**	(0.016)**	(0.014)
# HH members[(1)]	0.035	-0.037	0.054	-0.017
	(0.004)**	(0.003)**	(0.004)**	(0.004)**
Highest education of HH head: Less than primary	-0.303	-0.078	-0.198	0.117
	(0.089)**	(0.084)	(0.092)*	(0.069)+
Highest education of HH head: Primary incomplete	-0.309	-0.052	-0.183	0.121
	(0.088)**	(0.084)	(0.091)*	(0.068)+
Highest education of HH head: Primary complete	-0.224	-0.071	-0.145	0.105
	(0.090)*	(0.085)	(0.093)	(0.070)
Highest education of HH head: Secondary complete	-0.177	-0.012	-0.133	0.065
	(0.091)+	(0.086)	(0.094)	(0.070)
Lives in urban area	0.309	-0.208	0.171	0.148
	(0.241)	(0.094)*	(0.191)	(0.120)
Per Capita Family Income in R$1000	3.919	0.159	0.826	-2.881
	(0.435)**	(0.378)	(0.459)+	(0.386)**
Constant	0.228	0.408	0.285	-0.015
	(0.197)	(0.124)**	(0.163)+	(0.071)
Observations	3,651	4,259	4,661	3,670
R-squared	0.16	0.14	0.16	0.1

(1) Counts of # HH members exclude girls' own children

(2) Sample includes poor or extreme poor girls aged 17 and 18 only

(3) All regressions incluse urban-state-year fixed effects

(4) Robust standard errors in parentheses

(5) + significant at 10%; * significant at 5%; ** significant at 1%

Table 10: Heterogeneous Effects Urban Rural

Outcome:	Currently Attends School		Gave birth to a child (live-birth or still-birth) in the past year	
	(1) Urban Only	(2) Rural Only	(3) Urban Only	(4) Rural Only
Of treatment age in time for policy impact	0.017 (0.027)	0.134 (0.043)**	-0.013 (0.029)	-0.002 (0.044)
Age eligible	0.159 (0.015)**	0.127 (0.027)**	-0.014 (0.012)	-0.010 (0.015)
# HH members under 5[(2)]	-0.070 (0.012)**	-0.125 (0.019)**	0.012 (0.009)	0.026 (0.016)
# HH members[(2)]	0.035 (0.003)**	0.060 (0.005)**	-0.023 (0.002)**	-0.034 (0.004)**
Highest education of HH head: Less than primary	-0.275 (0.064)**	-0.164 (0.150)	0.001 (0.054)	0.145 (0.147)
Highest education of HH head: Primary incomplete	-0.273 (0.063)**	-0.132 (0.153)	0.022 (0.055)	0.169 (0.146)
Highest education of HH head: Primary complete	-0.214 (0.064)**	-0.084 (0.150)	0.010 (0.055)	0.147 (0.149)
Highest education of HH head: Secondary complete	-0.180 (0.065)**	-0.183 (0.155)	0.010 (0.058)	0.236 (0.153)
Per Capita Family Income in R$1000	2.048 (0.153)**	1.913 (0.297)**	-1.289 (0.131)**	-1.957 (0.209)**
Constant	0.422 (0.064)**	0.180 (0.155)	0.390 (0.055)**	0.326 (0.146)*
Observations	5,839	2,473	5,641	2,288
R-squared	0.09	0.13	0.04	0.08

(1) Counts of # HH members exclude girls' own children

(2) Sample includes poor (BF-eligible) girls aged 17 and 18 only

(3) All regressions incluse urban-state-year fixed effects

(4) Robust standard errors in parentheses

(5) + significant at 10%; * significant at 5%; ** significant at 1%

Table 11: Attendance Results for Teen Mothers

Outcome:	Currently Attends School					
	(1) No Controls	(2) HH & Urban Controls	(3) HH, Urban & Income Controls	(4) State & Year FEs	(5) State-Year FEs	(6) Urban-State-Year FEs
Of treatment age in time for policy impact	0.023	0.030	0.026	0.017	0.018	0.016
	(0.036)	(0.035)	(0.035)	(0.035)	(0.037)	(0.040)
Age eligible	0.045	0.043	0.041	0.042	0.039	0.036
	(0.019)*	(0.019)*	(0.019)*	(0.019)*	(0.021)+	(0.022)
Post-treatment period[1]	0.024	0.019	0.021			
	(0.022)	(0.022)	(0.022)			
# HH members under 5[2]		-0.040	-0.038	-0.041	-0.037	-0.034
		(0.015)**	(0.016)*	(0.015)**	(0.014)*	(0.015)*
# HH members[2]		0.017	0.014	0.012	0.011	0.010
		(0.004)**	(0.004)**	(0.004)**	(0.003)**	(0.004)**
Highest education of HH head: Less than primary		-0.353	-0.341	-0.341	-0.365	-0.355
		(0.098)**	(0.099)**	(0.094)**	(0.100)**	(0.104)**
Highest education of HH head: Primary incomplete		-0.345	-0.331	-0.331	-0.356	-0.345
		(0.097)**	(0.098)**	(0.094)**	(0.098)**	(0.102)**
Highest education of HH head: Primary complete		-0.282	-0.270	-0.270	-0.296	-0.297
		(0.099)**	(0.100)**	(0.095)**	(0.091)**	(0.095)**
Highest education of HH head: Secondary complete		-0.245	-0.235	-0.246	-0.274	-0.260
		(0.100)*	(0.101)*	(0.096)*	(0.103)**	(0.106)*
Lives in urban area		0.075	0.074	0.081	0.076	
		(0.016)**	(0.016)**	(0.017)**	(0.020)**	
Per Capita Family Income in R$1000			-0.546	-0.521	-0.503	-0.455
			(0.193)**	(0.193)**	(0.193)*	(0.218)*
Constant	0.186	0.390	0.414	0.385	0.458	0.509
	(0.012)**	(0.100)**	(0.101)**	(0.112)**	(0.097)**	(0.100)**
Observations	2,740	2,740	2,740	2,740	2,740	2,740
R-squared	0.01	0.04	0.04	0.07	0.03	0.02
State FEs	NO	NO	NO	YES	NO	NO
Year FEs	NO	NO	NO	YES	NO	NO
Sate-Year FEs	NO	NO	NO	NO	YES	NO
Urban State-Year FEs	NO	NO	NO	NO	NO	YES

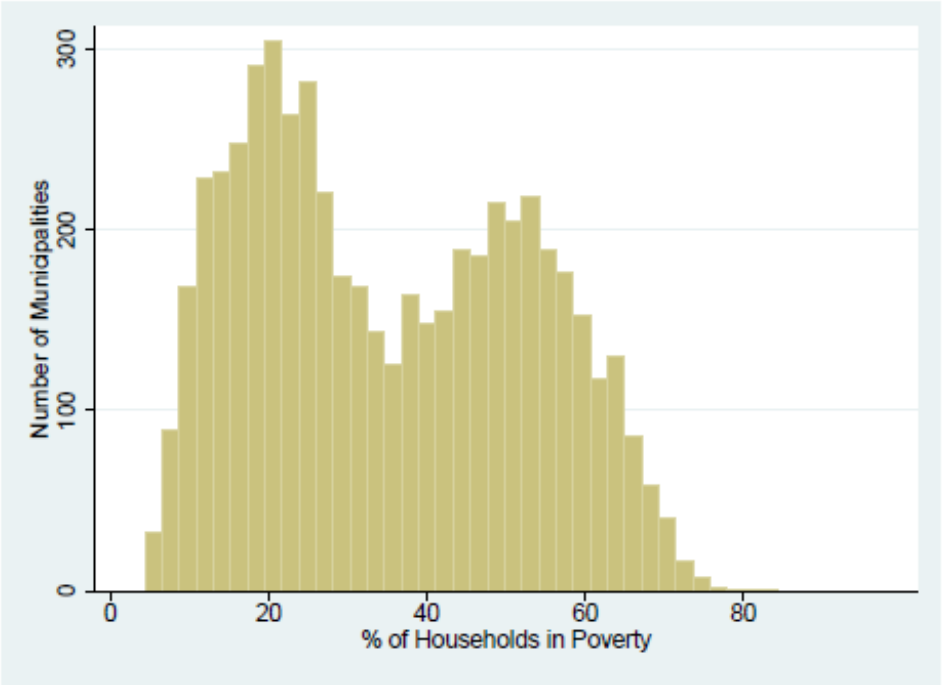
(1) Post-treatment period is 2008 and later for attendance and 2009 for fertility

(2) Counts of # HH members exclude girls' own children

(3) Robust standard errors in parentheses

(4) + significant at 10%; * significant at 5%; ** significant at 1%

Figure 1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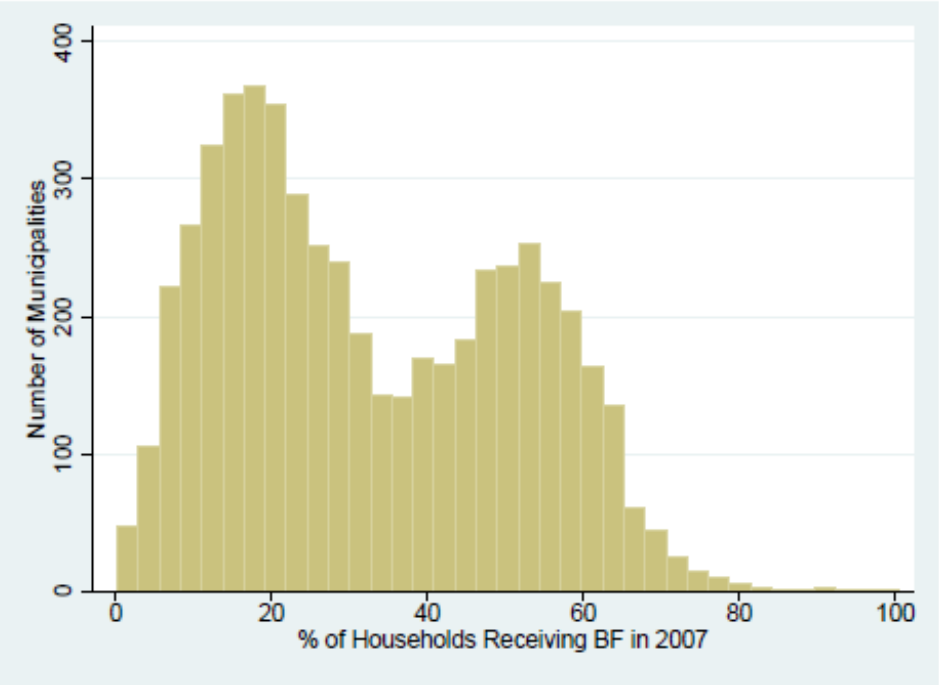
0
100
200
300
0
20
40
60
80
% of Households in Poverty


Number of Municipalities
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100
200
300
400
0
20
40
60
80
100
% of Households Receiving BF in 2007