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Cash Transfers and Child Labor

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Abstract

Cash transfer programs are widely used in settings where child labor is prevalent. Although many of these programs are explicitly implemented to improve children's welfare, in theory their impact on child labor is undetermined. This paper systematically reviews the empirical evidence on the impact of cash transfers, conditional and unconditional, on child labor. The authors find no evidence that cash transfer interventions increase child labor in practice. On the contrary, there is broad evidence that conditional and unconditional cash transfers lower both children's participation in child labor and hours worked and cushion the effect of economic shocks that may lead households to use child labor as a coping strategy. Boys experience particularly strong decreases in economic activities, girls in household chores. The findings underline the usefulness of cash transfers as a relatively safe policy instrument to improve child welfare, but also point to knowledge gaps, for instance regarding the interplay between cash transfers and other interventions, that should be addressed in future evaluations to provide detailed policy advice.

Cash Transfers and Child Labor

Jacobus de Hoop* & Furio C. Rosati°[i]

The International Labor Office (2013a) estimates that over 120 million 5- to 14-year-old children were involved in labor in 2012, accounting for approximately 10% of the children in this age group. Child labor constitutes a violation of children's basic rights. It may have detrimental short- and long-run effects on children's lives, potentially lowering their school participation and learning in school and possibly affecting their mental and physical health. Beyond its direct effects on the children concerned, child labor may result in negative externalities. The economic literature assumes that parents determine the child labor supply by weighing its harmful effects against its potential benefits (primarily contributions to current household income). This literature shows that child labor supply is likely to be inefficiently high even if parents are altruistic and externalities are absent, thus providing a rationale for policy intervention (see, among others, Cigno and Rosati 2005; Edmonds 2007; and Udry 2006).

This paper aims to add to our understanding of the role of policy interventions by systematically reviewing the evidence on the impact of cash transfers, unconditional and conditional, on child labor in developing countries. [1] Unconditional cash transfers provide households with an income transfer, for instance to reduce poverty, address household vulnerability, and encourage household investment in the human capital of their children. Conditional cash transfer programs also provide an income transfer, but on the condition that the members of the households receiving the transfer adhere to specific behavioral requirements. The behavioral conditions are typically in the area of health (e.g., health checkups and attendance at health-related seminars) and human capital accumulation (e.g., regular school attendance of children in the household). [2]

Cash transfers are a particularly relevant category of interventions. They are widely used in settings where child labor is prevalent and are often explicitly implemented to improve children's welfare. Nonetheless, in theory, their impact on child labor is undetermined. In fact, even increases in school participation do not necessarily translate to reductions in child labor because school

participation and child labor are not mutually exclusive activities. The extensive evidence on the beneficial effects of cash transfers on school participation (see, e.g., Baird et al. 2013; Fiszbein and Schady 2009; Rawlings and Rubio 2005; Saavedra and Garcia 2012) thus provides little guidance regarding their effects on child labor.

A key issue that must be emphasized from the outset is that child labor is not a concept that easily translates into statistical indicators. Child labor can affect children in different ways, and its consequences for children's welfare cannot be captured by a single indicator. Damage to child health, for instance, depends on the participation in - and the length of exposure to - hazardous activities and occupations. Similarly, the effects on the accumulation of human capital depend on participation in work, work schedule and hours worked, sector of employment, and occupation.[3] Thus, detailed information is necessary to fully understand how policy interventions affect children's welfare.[4] Such detailed information, however, is seldom available. Instead, most studies focus on participation in work, with a few studies discussing the impact on working hours. To complicate matters further, there is substantial variation in the way "work" is defined across different studies. Some studies focus on specific activities (such as work in agriculture), whereas others use a more general definition (such as work in economic activities or household chores).[5]

To ensure consistency and incorporate evidence from the largest possible number of studies, we mainly discuss the impact of cash transfer programs on children's participation in economic activities. To the extent possible, we complement this discussion with a separate analysis of the impact of cash transfer programs on hours worked. Despite its limitations, the literature's focus on participation in work provides important insights. First, impact on participation serves as a useful first-order approximation to examine whether cash transfers affect the working behavior of children. Second, keeping children out of work is a sufficient condition to prevent detrimental effects on outcomes such as health and human capital accumulation. Third, participation in work is typically the key outcome in policy discussions and is an important outcome from a legal perspective (most countries in the world have adopted child labor laws that set a minimum age

below which children are not allowed to work). Moreover, by focusing on participation in work, we are able to highlight some of the limitations of the research conducted to date and the main questions that remain to be answered in future evaluations.[6]

The remainder of this review is organized as follows. Section 1 provides the necessary background. It heuristically describes why the effects of cash transfers on child labor are theoretically undetermined, and it introduces the procedure that we used to identify the relevant studies for this review. Section 2 discusses the impact of two subsets of *unconditional* cash transfers: programs designed to support poor households' investments in children's human capital and old age pension schemes. Section 3 discusses the average impact of *conditional* cash transfer schemes on the intensive and extensive margin of child labor, the impact of conditional cash transfers on child labor compared to their impact on school participation, heterogeneity by poverty, age, and gender, spillover effects, long-run effects, determinants of program effects, protection from shocks, and variations on the basic conditional cash transfer scheme. Section 4 discusses and concludes.

<<A>> 1. Background

<<B>> 1.1. Theoretical Framework

The effects of cash transfers on child labor cannot be determined a priori, as we briefly discuss below. There are two main channels through which cash transfers may affect child labor: (i) by modifying the propensity to attend school and (ii) by changing the returns to child labor. Because a detailed theoretical discussion of these issues is beyond the scope of this paper, we present a heuristic explanation in what follows. This discussion draws on the theoretical framework presented in De Hoop and Rosati (2014).[7]

Consider a unitary household in which parents maximize utility over current consumption (which depends partly on children's work), children's education, and leisure. For simplicity, and

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because the cash transfer programs we consider are targeted at the poor, assume that households are credit constrained. As a result, they may under-invest in children's education and in productive assets. Assume also that the adult labor supply is fixed, fertility is exogenous and fixed at one child, and school participation is dichotomous (i.e., the child either does not attend school or spends a fixed amount of time in school). The basic characteristics of an altruistic overlapping generation model that are essential for our analysis are captured by this very simple set of assumptions.

Within this framework, the effects of cash transfers, both conditional and unconditional, depend on whether the transfer program affects school participation.[8] If the school participation of the child is *not* affected (e.g., in case of children who would be in school also in absence of the cash transfer program) and the household consumes the transfer (i.e., the transfer results only in an income effect), then child labor should decrease.[9] However, if the household invests (part of) the transfer in productive assets, the returns to child work may increase, thereby counterbalancing the income effect and possibly resulting in increased child labor.[10]

Figure 1 helps explain what happens when school participation *is* affected by the transfer. Household consumption is plotted on the vertical axis, and child leisure is plotted on the horizontal axis. The budget constraint for a household that does not receive a transfer and does not send its child to school is given by the solid line ABC. The downward slope of the budget constraint reflects the decrease in consumption as the child works less (i.e., consumes more leisure). Household consumption is positive even if the child does not work and spends all available time on leisure (point B) because the household also relies on income from other household members.

If the child begins to attend school following a transfer, the time available to the child for leisure and work is reduced (here, from C to F). Moreover, the household incurs the cost of education (e.g., school fees). If the transfer does not fully compensate the monetary cost of attending school, the budget constraint shifts downwards (for instance, to the dashed line GHF). Here, the distance DA represents the monetary costs of attending school, and DG represents the transfer. The change in child labor is undetermined because both feasible consumption and leisure

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are reduced, and the final outcome depends on the relative change in the (utility) value of the two. If the transfer exceeds the monetary cost of attending school, the budget constraint shifts upwards (for instance, to the dashed line IJF). Child labor should unambiguously decrease if the household does not invest the transfer in productive assets. However, in both cases, the effect on child labor also depends on whether the household decides to invest (part) of the transfer in productive assets, which may increase the returns to child labor.

<<B>> 1.2. Identifying Relevant Studies

To identify potentially relevant studies that evaluate the impact of cash transfer interventions on children's work outcomes, we began with a literature search covering Google Scholar's electronic bibliographical database, the World Bank Development Impact Evaluation Initiative (DIME) database, the Poverty Action Lab, the Social Science Research Network (SSRN), Network of Networks for Impact Evaluation (NONIE), and the International Initiative for Impact evaluation (3IE).[11] To determine which papers to include in our discussion, we split the identified papers into two subgroups: peer-reviewed papers and non-reviewed papers. We included all of the peer-reviewed papers in our discussion. We included non-reviewed studies if they applied a plausible strategy to address endogenous program placement and self-selection into the program. We did not limit our overview to randomized controlled trials (RCTs) and considered other methodologies, such as regression discontinuity designs, natural experiments, and propensity score matching studies.[12]

Table 1 provides an overview of the studies included in our primary analysis: seven studies of unconditional cash transfer schemes and 23 studies of conditional cash transfer schemes. The majority of studies, 23 in total, focus on cash transfer programs implemented in Latin America and the Caribbean (column 1). Five studies focus on Mexico's flagship conditional cash transfer scheme, called Oportunidades.[13] Over half of the studies appeared in a peer-reviewed journal (column 4). Fourteen studies are based on an RCT (column 5). The age range covered differs

substantially across studies, an issue that should be considered when interpreting our results (column 6). In most studies, the main outcome variable on which we focus includes economic activities for pay or for the household, although in some cases, the impact estimate refers to a narrower (economic activities for pay) or a broader outcome variable (economic activities or household chores) (column 7).[14]

<<A>> 2. Unconditional Cash Transfers

<<B>> 2.1. Unconditional Cash Transfer Programs Targeted at Poor Households with Children

We discuss three unconditional cash transfer programs for which rigorous evidence is available: Ecuador's Bono de Desarrollo Humano, Malawi's Social Cash Transfer Scheme, and South Africa's Child Support Grant (the results are summarized in Figure 2).[15] The evaluations of these programs suggest that unconditional cash transfers that aim to encourage investment in human capital tend to lower participation in economic activities. IV estimates using randomly assigned eligibility status as an instrument indicate that Ecuador's Bono de Desarrollo Humano had a particularly strong effect. It lowered children's participation in economic activities by 17 percentage points for 6- to 17-year-old children (Schady and Araujo 2006) and by 25 percentage points for 11- to 16-year-old children (Edmonds and Schady 2012), and it resulted in substantial reductions in work for pay. It appears that South Africa's Child Grant did not affect the time allocation of 10-year-olds. However, propensity score dose-response estimates indicate that it did affect adolescents aged 15 to 17; the probability that they worked outside the home was 21% if they started receiving the grant at the age of 14 and 13% if they started receiving the grant at the infant or pre-school age (DSD, SASSA, and UNICEF 2012).[16]

Covarrubias, Davis, and Winters (2012) find that Malawi's Social Cash Transfer Scheme increased household investment in productive agricultural assets. Perhaps as a result, there is

evidence of reductions in child labor, especially in domestic work, outside the household; however, "the time freed seems to be replaced with greater involvement in within-household tasks". Participation in household chores, for instance, increased significantly by 8 percentage points according to the authors' propensity score matching estimates. Although participation in work in the family farm did not change significantly, *hours* worked in the family farm or family business increased.[17] Miller and Tsoka (2012) provide difference-in-difference estimates using the same data, confirming that participation in household chores increased significantly, whereas participation in work for pay decreased.

<<B>> 2.2. Old Age Pensions and the Role of Credit Constraints

In our theoretical discussion, we assumed that households are credit constrained. If they are not credit constrained, then household investment in education and productive assets (and, concomitantly, child labor) should not change upon the receipt of a fully anticipated unconditional cash transfer. Two studies examine whether credit constraints matter for child labor by studying the impact of old-age pensions. Pensions are highly institutionalized and represent an *anticipated* and relatively certain future income stream for the household. Economic theory suggests that in the absence of credit constraints, households will follow the optimal smooth path of consumption and investment. Therefore, we should not observe any discontinuity in the behavior of households, and the fraction of working children in particular, just above and just below the pension age.

Edmonds (2006) uses data from South Africa's old-age pension scheme to test this proposition. South Africa's pensions are means tested and, as a result, primarily cover the comparatively deprived black population of South Africa. The benefits provided by the pension scheme are large: in 1999, they represented approximately 125% of median per capita income of South Africa's black population. School participation of 13- to 17-year-old children in the household increases substantially when an eligible elderly person reaches the pension age, an effect that is especially relevant for male pensioners. Children's participation in economic activities does

not decline significantly when an elderly person in the household becomes eligible for the old-age pensions. However, there is evidence of a significant decline in daily hours worked.[18] Boys experience larger reductions in time spent on economic activities, whereas girls appear to experience larger reductions in time spent on household chores.[19]

De Carvalho Filho (2012) confirms these findings for Brazil's social pension scheme. The author exploits a 1991 social security reform that increased the minimum benefit provided to pension beneficiaries in rural areas and reduced the minimum eligibility age, comparing households that became eligible to receive old-age benefits as a result of the reform to households that were nearly eligible after the reform.[20] Reduced form estimates indicate that the reform significantly increased girls' school participation and reduced their participation in economic activities for pay. IV estimates that disentangle this effect (using eligibility status as an instrument) show that increasing pension benefits by 100 Reais (approximately US$50) increases girls' school enrollment by nearly 10 percentage points and reduces the probability that girls work for pay by 3.6 percentage points. It appears that effects of the program differ by the gender of the pension beneficiary, as only girls living in a household where a female received the pension experienced a significant reduction in economic activities for pay.

In summary, the evidence from studies of pension schemes points to the relevance for child labor of transfer schemes that do not have human capital accumulation as one of their objectives. Moreover, it lends support to the hypothesis that unconditional cash transfers affect child labor at least in part because they mitigate the effect of credit constraints.

<<A>> 3. Conditional Cash Transfers

<<B>> 3.1. Impact on Participation in Work and Hours Worked

Conditional cash transfers have been evaluated extensively, allowing us to discuss their impact in detail. Figure 3 synthesizes the evidence on the average impact of the conditional cash

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transfer programs on participation in child labor. For some programs, we only have disaggregated estimates by gender and/or age. Because we want to begin with a comparison of the average program effects before discussing heterogeneous effects, we impute the average program effect for those programs by taking the unweighted mean of the impact estimates given for different age and gender groups (these imputed estimates are marked with a ǂ in the table).[21] For other programs, we have estimates of average program effects from more than one study, in which case we show all of the estimates.[22] To the greatest extent possible, we separately show impact estimates for urban and rural areas.[23] For brevity, we do not provide a discussion of the identification strategy employed in each individual paper, but Table 1 provides a basic description.

The results indicate that although there is considerable variation across programs, conditional cash transfer programs tend to reduce child labor. Impact estimates range from no statistically significant change in eight of the 16 studies to a reduction in child labor of 10 percentage points for Cambodia's CESSP scholarship program (Ferreira, Filmer, and Schady 2010). We do not observe statistically significant *increases* in child labor for any of the programs, an important finding given the theoretically ambiguous effect of conditional cash transfers on child labor discussed above. The results suggest that the effects of any household investments in productive assets and activities that draw children into work are offset by a stronger income and substitution effect that keeps children in school and out of work.[24]

Figure 4 displays the impact of cash transfer programs on weekly hours worked.[25] Because each of the included studies sets hours worked equal to zero for children who do not work, these results effectively represent the combined effect of the included conditional cash transfer programs on the intensive and extensive margin of child labor.[26] Although fewer studies focus on hours worked than on participation in work, the results are qualitatively similar: conditional cash transfer programs tend to reduce hours worked, and none of the studies finds evidence of a significant increase in hours worked. In general, reductions in hours worked are modest (the average reduction is approximately one hour and a half a week).

<<B>> 3.2. Comparing Impacts on School Participation and Child Labor

The impact of cash transfer programs on child labor is correlated with their impact on school participation. Of the eight studies that find a significant reduction in child labor, six also find a significant increase in school participation (enrollment or attendance, depending on the outcome examined in the study), and of the eight studies that find no significant reduction in child labor, only three find a significant increase in school participation. However, the correlation between program impact on child labor and school participation is not perfect. When we regress the child labor impact estimates on the school participation impact estimates (results not displayed), we find evidence of substantial and statistically significant co-movement. Each percentage point increase in school participation is associated with a reduction in child labor of 0.31 percentage points, suggesting that child labor is a key part of households' human capital investment decisions. However, the coefficient on school participation impacts is significantly different from -1, indicating that changes in school participation are not fully mirrored in changes in child work.

In fact, some of the differences in program impacts on school participation and participation in work are remarkable. As noted above, there are cases in which conditional cash transfers had a significant effect on education but no effect on child labor (e.g., Path in Jamaica). Perhaps more unexpectedly, there are cases in which conditional cash transfers had a significant negative effect on child labor but no effect on school participation (e.g., female school stipends in Pakistan). It is, therefore, evident that complex adjustments in household behavior occur when cash transfers are received (changes in working hours and/or in leisure time, changes in the type of activities performed) and that the impact of a cash transfer on child labor is not necessarily the reciprocal of its impact on education.

<<B>>3.3. Heterogeneous Effects

<<C>> 3.3.1. Heterogeneity by Income

Above, we presented the results for the average impact of conditional cash transfer programs. We now examine possible differences associated with some characteristics of the beneficiaries: income (in this subsection) and age and gender (in the next).[27] A priori, there are reasons to expect that the impact of conditional cash transfers will differ depending on the level of household income.[28] Most importantly, because poor households are more likely to be affected by credit constraints, transfers targeted to these households are more likely to affect investment in human capital and to reduce inefficiently high levels of child labor.

Two studies of the PRAF conditional cash transfer scheme in Honduras find that although the program did not significantly reduce child labor overall (Figure 3), the effects of the program differed depending on household income and were statistically significant for the poorer households (Figure 5). Galiani and McEwan (2013) divide their sample of municipalities into height-for-age quintiles (arguing that height for age provides an indication of poverty in the municipality) and find that the program reduced children's participation in economic activities by eight percentage points (significant at the 5% level) in the poorest quintile. In the richest quintile, no statistically significant change in child labor could be observed. Glewwe and Olinto (2004) interact their treatment indicator with the log of per capita expenditure and find a qualitatively similar result (not displayed in Figure 5): as the per capita expenditure decreases by one percentage point, the impact of PRAF-II on children's participation in economic activities increases significantly by 0.45 percentage points.

Sparrow (2007) divides his sample into four per capita consumption quantiles to examine the heterogeneous effects of Indonesia's Jaringan Pengaman Social. He too finds that program impact on child labor increases with poverty. In the lowest consumption quantile, children's participation in economic activities decreased by 4 percentage points, whereas in the combined upper two quantiles, it decreased by only 3.3 percentage points (both are significant at the 1% level). Only Dammert (2009) does not identify a differential impact of cash transfers on child labor

by income level. She investigates the effects of Nicaragua's Red de Protección Social by interacting a treatment dummy with marginality quintiles (based on a locality level marginality index).[29] The impact estimates by marginality quintile are volatile, and the estimates for the four richest quintiles are not significantly different from the impact coefficient for the poorest quintile.

In conclusion, the impact of conditional cash transfers on child labor generally appears to be larger for the poor. This finding is in accordance with the findings of Fiszbein and Schady (2009), who observe that "numerous studies have shown larger [conditional cash transfer] program effects among households that are poorer at baseline" on school participation. It is also in accordance with Edmonds and Schady (2011), who find that reductions in child labor as a result of Ecuador's Bono de Desarrollo Humano *unconditional* cash transfer scheme are concentrated in the poorest households. These results lend further support to the hypothesis that the mitigation of credit constraints, which are more likely to be binding for poor households, is a key channel through which cash transfers reduce child labor.

<<C>> 3.3.2. Heterogeneity by Age and Gender

It is not obvious a priori whether we should expect stronger changes in work participation for older or younger children. On the one hand, children's participation in work, and hence the margin for improvement in child labor outcomes, increases with age. On the other hand, as children become older, their returns to work are likely to increase, making work a more attractive alternative to compliance with a conditional cash transfer schooling requirement. To examine this issue, we use data from all studies that examine the effect of a conditional cash transfer scheme on child labor for two or more age groups. Using a regression, we test whether the impact on the younger and older age group differs (Column (1) of Table 2).[30] We find no evidence of a significant correlation, suggesting that the effect of conditional cash transfer schemes on child labor is not clearly heterogeneous by age.

In Column (2) of Table 2, we test whether the effect of conditional cash transfers is heterogeneous by gender. To do so, we use the results from all of the studies that show impact results separately for boys and girls. We find that conditional cash transfer schemes result in a 3.3 percentage point stronger reduction in child labor for males than females. In fact, a substantial number of studies finds a significant impact on child labor among boys and no significant impact on child labor among girls. Borraz and González (2009), who examine the impact of the PANES conditional cash transfer program in Montevideo, Uruguay, are the only authors to find a significant decrease in child labor for girls, but no significant decrease for boys.[31]

To better understand the differential impact of conditional cash transfer interventions on the work of boys and girls, Figure 6 provides results from three studies that disaggregate the overall impact of conditional cash transfers across different work activities by gender. Boys primarily experience reductions in economic activities for pay. Oportunidades, for example, resulted in a significant reduction in economic activities for pay conducted by boys, but not for girls (Skoufias and Parker 2001). Similarly, the CESSP scholarship program in Cambodia (Ferreira, Filmer, and Schady 2009) and the PRAF program in Honduras (Galiani and McEwan 2013) appear to have had a stronger impact on work for pay and work outside the home, respectively, for boys than for girls.[32] Girls, in contrast, appear to experience larger reductions than boys in household chores (Oportunidades in Mexico),[33] economic activities without pay (the CESSP program in Cambodia), and work at home (PRAF in Honduras).[34]

Similar results are obtained by Del Carpio and Macours (2010), who focus on Atención a Crisis, a one-year randomized pilot building on the Red de Protección Social cash transfer scheme in Nicaragua. The authors test for differences in reductions in hours worked by boys and girls in different activities during the week before the interview.[35] Fixed effects estimates indicate that the reduction in participation in economic activities of boys as a result of the basic conditional cash transfer program exceeded that of girls by more than one hour a week.[36] For household chores

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(cooking, cleaning, washing, and caring for younger siblings), there was no significant difference between boys and girls.[37]

It appears that a focus on economic activities does not reveal the full impact of conditional cash transfers on girls. Girls are more likely to participate in household chores than in economic activities; consequently, the impact of cash transfers on work performed by girls is likely to be underestimated if we focus only on participation in economic activities. More elaborate survey modules on children's time use are necessary to fully understand the impact of cash transfers, particularly on girls' activities.

<<B>> 3.4. Spillover Effects and General Equilibrium Effects

Conditional cash transfer programs may affect children who are not direct beneficiaries. At the household level, for example, income effects may alter the probability that the siblings of the beneficiary work. Conditional cash transfer programs may also result in spillover effects in the local labor market. For example, pulling a substantial number of children out of work might affect conditions in the local labor market and increase the marginal returns to child labor.[38]

Two evaluations suggest that such spillover effects are not highly relevant. Ferreira, Filmer, and Schady (2009) and Galiani and McEwan (2013) compare the siblings of eligible children in their treatment group to the siblings of eligible children in their control group for the CESSP program in Cambodia and PRAF in Honduras, respectively. Neither study finds compelling evidence that the siblings of eligible children in the treatment group altered their participation in work in comparison with the siblings of eligible children in the control group.[39] However, a different result is found by Barrera-Osorio et al. (2008, working paper version), who examine the spillover effects of Colombia's Subsidios Condicionados a la Asistencia Escolar conditional cash transfer scheme on child labor. Within the sample of households that registered two children for the program, there was evidence that children, especially girls, spent more hours in work if they were not assigned to the program while their sibling was assigned to the program.

Buddelmeyer and Skoufias (2004) investigate whether village-level spillover effects can be observed for the Oportunidades conditional cash transfer scheme in Mexico. They exploit the fact that within randomly selected intervention villages, only poor households were eligible to participate in the program. Non-poor households in intervention villages were not eligible and can thus be compared to non-poor households in control villages to identify spillover effects. The authors find no significant village-level spillover effects on children's participation in economic activities.

<<B>> 3.5. Long-run Effects

The impact evaluations discussed thus far examine the impact of conditional cash transfers at one particular point in time (mainly shortly after the program began). However, the impact of a program may vary significantly over its lifetime (King and Behrman 2009). For instance, if program operation improves as providers become more experienced, the impact of the program may be amplified over time. If the impact of the program depends on the duration of exposure to the program, impact estimates based on data collected relatively soon after participants enter the program may differ substantially from estimates based on data collected at a later stage.

Behrman, Parker, and Todd (2011) examine the impact of Oportunidades in the longer run and discuss whether these estimates differ from the short-run results. Propensity score estimates suggest that the probability that boys who were 14 to 16 years old in 2003 (5.5 years after the program was first implemented) worked was 14 percentage points lower in Oportunidades communities than in communities that had never received benefits of the cash transfer scheme.[40] There is no evidence that work participation changed for girls in this age group (who were less likely to work in the first place). The strong reduction in work by boys in the long run compared to the modest impact in the short run (Skoufias and Parker (2001) found that boys aged 14-15 reduced work participation by approximately 4 percentage points) suggests that the beneficial impact of the Mexican conditional cash transfer program is compounded over time. It is possible that reduced

probabilities of dropping out of school in individual grades (an issue alluded to in Schultz, 2004) begin to add up. The latter interpretation appears to be confirmed by Behrman, Parker, and Todd (2011), who also register strong improvements in school participation for girls up to 18 and boys up to 21 years old.

<<B>> 3.6. Differences in Program Impact

We have observed that the estimates of the impact of conditional cash transfers on child labor vary substantially. Based on the available information and without developing a new in-depth quantitative and qualitative analysis for each program, it is impossible to fully identify the reasons behind this variation. However, we can obtain some basic insight into the relationship between program characteristics and program impact on child labor. In this section, we examine the role of schooling conditionality and the size of the transfer.

<<C>> 3.6.1. Effect of the Conditionality

A key question is, of course, whether the impact of conditional cash transfers on child labor exceeds that of unconditional cash transfers. This question is not easy to answer by comparing the effects of the unconditional and conditional cash transfers presented thus far. The decision to attach a condition might be endogenous depending on the expected impact of the program in the target population. Moreover, the studies included in this review do not always discuss the exact conditions of the programs, how these conditions are communicated to beneficiaries, and to what extent conditions are enforced. Hence, it may be the case that programs that are nominally conditional are unconditional in practice.

However, a few recent studies allow us to shed some light on the effects of schooling conditions. Schady and Araujo (2006) and Edmonds and Schady (2012) exploit a glitch in the rollout of the Bono de Desarrollo Humano program, which resulted in some beneficiary households incorrectly believing that the cash transfers were provided conditional on school attendance.

Although the conclusions of the two papers are not entirely uniform, it appears that the effect of the program on child labor was similar in the households that believed that the program was conditional on school participation and in the households that did not.

At the time of writing, preliminary evidence was also available from an experiment in which households in rural Morocco were randomly selected to receive conditional and unconditional cash transfers (Benhassine et al. 2012). Although we caution that these results are not conclusive, they too suggest that changes in the time spent working in the household business are similar (and insignificant) for conditional and unconditional cash transfers.[41] The similar impact of conditional and unconditional cash transfers on child work is in contrast with more abundant evidence suggesting that conditional cash transfers have a stronger impact on school participation than do unconditional cash transfers (for a review, see Baird et al. 2013). It is evident that more information is necessary to understand the effect of the schooling condition on child labor.

<<C>> **3.6.2. Amounts Transferred**

There is some experimental evidence on the impact of the size of the transfer on school participation (e.g., Baird, McIntosh, and Özler 2011). No such evidence is available for child labor. To examine the association between amounts transferred and changes in child labor, we regressed the average impact of conditional cash transfer programs on the amount of money transferred as a percentage of average household income (results not displayed).[42] We found no evidence that larger transfer amounts are associated with a larger reduction in child labor. The lack of a negative relationship between amounts transferred and changes in child labor is also apparent from the individual studies.[43] The CESSP scholarship program in Cambodia, for instance, resulted in the second strongest decrease in child labor of all evaluated conditional cash transfer programs even though it provided only very modest transfers (equal to 2% to 3% of the total expenditures of the average recipient household). Uruguay's PANES, in contrast, provided income transfers equal to approximately 50% of average self-reported pre-program household income and yet does not appear

to have lowered child labor. This finding is in line with the evidence synthesized by Kremer and Holla (2009), suggesting that relatively small costs (for example, the costs of school uniforms) are sufficient to keep children out of school and that relatively small subsidies can generate "sizeable movements" in the take-up of health and education interventions. Together with the finding that cash transfers have a stronger impact on the poor, this finding lends further support to the hypothesis that the mitigation of credit constraints is a key channel through which cash transfers affect child labor. Possibly, once sufficient cash has been transferred and credit constraints are no longer binding, transferring additional cash to the household has no effect on child labor.

<<B>> 3.7. Protection from Shocks

There is substantial evidence that households in developing countries use child labor to cope with income shocks. Beegle, Dehejia, and Gatti (2006) use data from a household panel survey in Tanzania to show that households increase child labor in response to transitory income shocks. Similarly, Duryea, Lam, and Levison (2007) find that unemployment shocks experienced by male household heads in Brazil significantly increase the probability that a child will enter the labor force. Guarcello, Mealli, and Rosati (2010) show that in Guatemala, exposure to negative shocks strongly influences household decisions and pushes children into work. An important question is whether social protection programs, such as conditional cash transfers, can serve as a safety net preventing income shocks from causing children to drop out of school and enter work.

De Janvry et al. (2006) test whether the conditional cash transfers provided by the Oportunidades program in Mexico protect children from household level shocks, including illness of the head of household, loss of employment by the head of household, and natural disasters such as drought and harvest failure. The authors find evidence of state dependence in schooling: children may leave school as the result of a shock (particularly illness of the household head and locality-level natural disasters) and there is a substantial risk that they will not return to school at a later stage. Oportunidades strongly reduced the risk that pupils would leave school as a result of such

shocks. For instance, the risk that a child will drop out of school as a result of illness of the household head or a locality-level disaster (1.7 and 3.2 percentage points in the absence of Oportunidades, respectively) was virtually reduced to zero by the conditional cash transfer scheme. No such protective effect could be observed for child labor, however. The same two shocks, illness of the household head and locality-level natural disasters, increase children's participation in economic activities by 2.2 and 4.7 percentage points, respectively, in the absence of the program. This increase was not significantly different in Oportunitades villages, suggesting that the protective effect of the conditional transfer program was "not sufficient to reduce the use of child work as a crucial element of [household] risk-coping strategies".

Following a similar approach, Fitzsimons and Mesnard (Forthcoming) examine whether Colombia's Familias en Acción conditional cash transfer scheme protected children from the detrimental effects of the permanent departure of their father from the household due to death or divorce. The authors show that the departure of the father is a quasi-random event accompanied by a substantial reduction in household income. Children who experience the departure of their father are approximately five percentage points less likely to attend school and approximately three percentage points more likely to work. In contrast with De Janvry et al. (2006), Fitzsimons and Mesnard (Forthcoming) find that conditional cash transfers strongly mitigate both the detrimental effect of the departure of the father on school enrollment *and* the detrimental effect on participation in work.[44]

<<B>> 3.8. Variations on the Basic Conditional Cash Transfer Scheme

Some studies examine whether changes in the basic setup of the conditional cash transfer program affect their impact. Del Carpio and Loayza (2012) rely on a randomized experiment in Nicaragua to compare the impact of simple conditional cash transfers to that of conditional cash transfers combined with a "grant for productive investments" to start a new income-generating non-agricultural activity. The grant was provided to households conditional on the development of a

business plan and was accompanied by technical assistance and training in basic business skills. The two variants of the conditional cash transfer scheme do not appear to have had the same impact on child participation in economic activities or household chores: the conditional cash transfers in combination with the productive investment grant reduced child labor by 0.94 hours a week, whereas the basic conditional cash transfer reduced child labor by 1.76 hours a week (the difference between the point estimates is statistically significant at the 5% level).

Barrera-Osorio et al. (2011) rely on a randomized experiment in Colombia to compare the impact of simple conditional cash transfers to that of two variations on the traditional conditional cash transfer scheme. The first variation provided a regular cash transfer that was equal to two-thirds of the basic conditional cash transfer. The remaining accumulated one-third was transferred shortly before the start of the following school year, thus potentially helping households cope with savings constraints that keep students from proceeding to the next grade. The second variation also lowered the regular cash transfer payment, but instead of transferring the accumulated funds prior to the new school year it provided a large bonus for graduating from secondary school. This bonus was provided earlier to students who enrolled for tertiary education (upon graduation) than students who did not. The effect of the first variation on child work appears to be similar to that of the simple cash transfer scheme. The second variation, however, resulted in a more pronounced reduction in child work, in particular for graduating pupils (who were also markedly more likely to enroll for tertiary education).

Glewe and Olinto (2004) and Galiani and McEwan (2013) compare the impact of receiving Honduras' PRAF-II conditional cash transfers in isolation (discussed in more detail above) to the impact of receiving the conditional cash transfer in combination with direct investments in the communities' health and education facilities. As shown in Figure 3, neither of these studies found an overall significant reduction in child labor as a result of the pure conditional cash transfer scheme (although both found effects for the poorest households). Glewe and Olinto (2004) also find no overall effect of the cash transfers combined with supply-side interventions. Galiani and

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McEwan (2013), however, find that the conditional cash transfers in combination with investments in health and education facilities did result in a statistically significant decrease in economic activities outside the household and household chores.[45]

Finally, Yap, Sedlacek, and Orazem (2002) investigate the impact of Brazil's Programa de Erradicacao de Trabalho Infantil (PETI). This program was targeted at poor households in rural areas of the country where the prevalence rates of child labor are high. Similar to Brazil's Bolsa Escola program, PETI provided a cash transfer conditional on school participation. However, PETI was explicitly designed to reduce child labor. For this purpose, it required households to enroll their child in an after-school education program. The content of the after-school education program differed by community and could include academic and physical education components. After-school education essentially doubled the length of the school day for participating children. The authors find that PETI reduced child labor by 5 to 25 percentage points in different regions.[46] Taken at face value, these results suggest that the program resulted in strong reductions in child labor compared to, for example, Bolsa Escola, which provides pure conditional cash transfers and reduced participation in economic activities by 8.7 percentage points in rural areas (Ferro, Kassouf, and Levison 2010).

Taken together, the studies discussed in this section suggest that the impact of conditional cash transfers depends partly on their integration with other interventions. Interventions that aim to improve income-generating activities may reduce the impact of conditional cash transfers on child labor, possibly by generating increased demand for children's time within the household. In the case of Nicaragua, for example, a plausible explanation for the weaker program effect when the basic conditional cash transfer is combined with a grant for productive investments could be that children are employed in the newly developed household business.

Combining conditional cash transfers with supply-side interventions such as the provision of health and education facilities and after-school education may increase impacts on child work. This finding seems intuitive because these supply-side interventions reduce the incentives or the time

available to the child for work. However, further research is needed to better understand how cash transfer and supply-side interventions interact. Is their combined effect simply equal to the sum of the effect of the individual interventions? Or is there a synergy, such that the effect of the cash transfers and supply-side interventions is mutually reinforcing? This is a key topic for future research, not only for child labor but also for outcomes such as school participation.

<<A>> 4. Conclusion

Cash transfer schemes are not often designed and implemented with the aim of reducing child labor, although social protection is recognized as one of the main instruments to address child labor (International Labor Office 2013b; Understanding Children's Work 2010). However, as this review shows, cash transfers have a strong potential to address child labor. We have not identified a single program that increased child labor (although indications of negative spillover effects warrant further research). On the contrary, there is broad evidence that cash transfers, conditional and unconditional, lower both the extensive and intensive margin of child labor. Moreover, cash transfers appear to cushion the effect of economic shocks that may lead households to use child labor as a coping strategy.

The effects of the cash transfer programs on child labor are heterogeneous. There are differences by the child's gender. Boys tend to experience a larger reduction in participation in economic activities, whereas girls experience relatively larger reductions in involvement in household chores. Moreover, reductions in child labor are particularly pronounced when beneficiaries are poor, signaling that the mitigation of credit constraints, which force households to use child labor as a consumption smoothing mechanism, are a key channel through which cash transfers lower child labor. This interpretation is confirmed by studies of old-age pension schemes that allow for a more direct test of the role of credit constraints.

Preliminary evidence suggests that the impact of conditional cash transfers depends partly on their integration with other interventions. Combining conditional cash transfers with supply-side

interventions such as the provision of health and education facilities and/or after-school education may increase impacts on child labor. In contrast, interventions that aim to improve income-generating activities may reduce the impact of conditional cash transfers on child labor, possibly by generating increased demand for children's time within the household. These results indicate that to reduce child labor, careful attention should be paid to the integration of conditional cash transfers with other interventions.

Our findings are in accordance with Edmonds (2007) and Fiszbein and Schady (2009) who also find that cash transfer programs are generally a promising tool to reduce child labor, drawing on a subset of the studies discussed in this paper.[47] In conclusion, the use of cash transfers as an anti-poverty strategy seems to be effective to reduce child labor. The same does not necessarily hold for all anti-poverty and income-generating interventions. The encouragement of entrepreneurship through microfinance programs, for instance, *can* increase child labor (e.g., Augsburg et al. 2012; Nelson 2011). This finding further underlines that cash transfers are a useful policy instrument to improve child welfare and suggests that they are unlikely to have detrimental effects on child labor, even when they are not implemented or designed to address it.

However, important knowledge gaps must be addressed to provide more detailed policy advice. The main gaps are because, as mentioned, cash transfers are seldom implemented with a reduction in child labor as one of their main objectives and are therefore typically not assessed in depth against this outcome. As a result, we know relatively little about the program characteristics that determine cash transfer programs' effects on child labor, and we do not clearly understand why some of these programs have no effect on child labor. The role of design elements that *have* been tested appears to be limited. There is little evidence that schooling conditions affect program impact on child labor. The latter finding is surprising in light of recent research indicating that schooling conditions matter for school participation, and this finding warrants further research. The size of the transfer relative to household income also appears to have little influence on reductions in child labor. Some conditional cash transfer projects that transfer substantial sums of money have no

effect on child labor, whereas other programs that provide only a small subsidy result in strong changes.

Beyond examining the program characteristics that determine the impact of cash transfers on child labor, there are more questions open for future research. A key issue, which we outlined in the introduction, is the measurement of child labor. Most impact evaluations focus on economic activities. This approach potentially results in the underreporting of program impact on activities performed by girls because they are more likely to be involved in household chores. Additionally, as a result of the focus on participation in economic activities (or in one of its subcomponents), we have little evidence on the extent to which the interventions prevent and reduce (i) the worst forms of child labor, including hazardous work, and (ii) long working hours that keep children from learning in school.

More systematic evidence on extensions of basic cash transfer schemes and the interplay between cash transfer schemes and other social protection and supply-side interventions would also be important. In practice, cash transfer interventions are rarely implemented in isolation, and interaction effects may well determine their impact. This review provides preliminary evidence suggesting that the impact of cash transfer schemes and education interventions may be mutually reinforcing, whereas combining cash transfer schemes with services that aim to foster income-generating activities may have a detrimental effect on child labor. However, much work remains to be done to understand the extent to which synergy effects drive the combined effect of cash transfer and supply-side interventions.

Finally, we know very little about the relative cost effectiveness of cash transfers in reducing child labor and how their cost effectiveness compares to other interventions. This issue has remained largely unexplored in most impact evaluations focusing on child labor. Few of the studies included in our review are explicit on the cost of implementing a cash transfer program (other than the transfer amounts). Evaluations of the impact of other categories of interventions on child labor

are equally unlikely to discuss the cost of implementing the program per beneficiary. More explicit cost effectiveness analyses will be crucial in guiding governments in the elimination of child labor.

Notes

[1] Previous work discussing evidence on the relationship between cash transfers and child labor, building on the earlier papers included also in this review, includes Edmonds (2007) and Fiszbein and Schady (2009). Edmonds (2007) also discusses the effect of a range of other interventions on child labor. Fiszbein and Schady (2009) also examine the effects of conditional cash transfers on various of other outcomes (including adult labor).

[2] Over the past decade, developing country governments have begun to adopt conditional cash transfers as social protection instruments at a rapid pace. See Fiszbein and Schady (2009) for a comprehensive review of the recent proliferation of conditional cash transfer schemes in developing countries.

[3] The three principal international conventions on child labor recognize this complexity and set the legal boundaries that define children's work that is targeted for elimination. The ILO Convention No. 138 determines the minimum age below which children should not work and the minimum ages for light and hazardous work. The ILO Convention No. 182 specifies the worst forms of child labor that are prohibited for all children under the age of 18. The United Nations Convention on the Rights of the Child aims to protect children from economic exploitation and from performing any work that is likely to be hazardous or to interfere with the child's education or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. The international legal standards contain a number of flexibility clauses left to the discretion of the competent national authority in consultation (where relevant) with worker and employer organizations (e.g., minimum ages, scope of application). There is no single legal definition of child labor across countries, and concomitantly, there is no single standard statistical measure of child labor consistent with national legislation across countries. (Text in this footnote is adapted from standard Understanding Children's Work description.)

[4] Moreover, we must keep in mind that schooling, work, and other activities, including leisure and sleep, are jointly determined.

[5] There is also variation in the reference period. Some studies consider work in the seven days prior to the household survey, whereas some studies examine work in the past 12 months. Finally, some studies present results for a few separate categories of activities instead of focusing on a comprehensive indicator for participation in work.

[6] Initially, most evaluations of the impact of cash transfer interventions on human capital accumulation focused on self-reported school enrollment or attendance. A new generation of studies focuses on more elaborate outcomes, such as performance on standardized tests. A similar development has not taken place for child labor, and we hope that this review can serve as a starting point.

[7] For a formal model, see for instance Ravallion and Wodon (2000).

[8] For a theoretical discussion of the effects of cash transfers on school participation see, inter alia, Fiszbein and Schady (2009).

[9] If leisure is a normal good.

[10] For a discussion of investment of cash transfers in productive assets, see Fiszbein and Schady (2009).

[11] The full literature search was conducted in early 2011 by Understanding Children's Work (UCW) to build a comprehensive database of child labor impact evaluations. The database is updated regularly and can be found at http://www.ucw-project.org/impact-evaluation/inventory-impact-evaluations.aspx. We considered works identified to the end of 2012. We considered only papers written in English and did not consider dissertation chapters that did not appear as separate (working) papers. Of course, relevant impact evaluations continue to appear after this date. Authors of relevant papers not included in this database are invited to share their papers.

[12] We exclude simulation studies, such as Bourguignon, Ferreira, and Leite (2003), studies that capture the effect of multiple programs at once, such as Cardoso and Portela Souza (2003), and studies of in-kind transfers, such as Ravallion and Wodon (2000) and Kazianga, de Walque, and Alderman (2009).

[13] We do not discuss Rubio-Codina (2010) and Schultz (2004) in the main text because these studies rely on the same data and find results comparable to those of Skoufias and Parker (2001).

[14] A table with the exact definition of the outcome variable for each individual study is available on request.

[15] Figure 2 does not include the dose-response estimates for South Africa's Child Support Grant (DSD, SASSA, and UNICEF 2012) discussed in the text, which differ in nature from the "binary" treatment results discussed in the remainder of this paper.

[16] This result should be interpreted with some care because the authors do not show whether differences between individuals treated from an early age and those treated from the age of 14 are significant.

[17] The program did not affect children's participation in care for other children in the household, care for adults in the household, or work outside the household for income (other than domestic work). The estimates are not always robust for different specifications.

[18] That is, -0.6 hours for children living in a household with a male pensioner and -0.5 hours for children living in a household with a female pensioner.

[19] Edmonds (2006) discusses several alternative hypotheses that could explain the observed changes in child labor and school participation in response to the realization of anticipated income but concludes that credit constraints are the most plausible explanation.

[20] To correct for age-specific trends not related to the reform, the author compares difference-in-differences estimates for rural households to difference-in-differences estimates for urban households (which were not affected by the reform) in a triple-difference framework.

[21] To calculate the standard errors associated with these estimates, we assume that the covariance between the individual estimates is zero. Note that the overall impact of the program may not be statistically significant even if some of the underlying estimates for age and gender subgroups are statistically significant.

[22] If we have an estimate of average program effects from one study and estimates of disaggregated program effects from another study, we show only the estimate of the average program effect.

[23] Although it seems reasonable to take the unweighted means of impact estimates across age and gender groups, the same procedure cannot be applied across urban and rural areas that may differ drastically in terms of population size. When we have estimates for both rural and urban areas for the same program this is indicated after the program name.

[24] We examined whether the average the impact estimates of randomized controlled trials are different from the impact estimates of quasi-experimental studies and find that this is not the case. This finding is interesting in light of the ongoing debates regarding the validity of randomized evaluations vis-à-vis quasi-experimental approaches (Deaton 2010; Duflo and Kremer 2005; and Ravallion 2009).

[25] To ensure comparability, we multiply the hours worked by seven for studies that consider daily working hours.

[26] To correct for the censoring of the outcome variable, Attanasio et al. (2010), Dammert (2009), Del Carpio and Loayza (2012), and Ferreira, Filmer, and Schady (2009) use Tobit regressions. Skoufias and Parker (2001) use a Heckit procedure.

[27] Bando, Lopez-Calva, and Patrinos (2005) examine whether the impact of Mexico's Oportunidades was stronger for indigenous households.

[28] See Fiszbein and Schady (2009) for a further discussion.

[29] In her paper, Dammert shows how impact estimates for the richest four quintiles differ from the impact estimate for the poorest quintile. To ensure that the results are comparable with those of the other studies, we imputed the impact of the program for each of the five quintiles. We followed a procedure similar to that discussed in footnote 21 to calculate standard errors for these estimates. Dammert (2009) also examines heterogeneity along household per capita expenditure quintiles. These results are not qualitatively different from the marginality index results; therefore, we decided not to present them in Figure 5.

[30] For each study, we focus on two age groups, within the 7-14 age range, if possible.

[31] The effects of South Africa's (unconditional) Child Grant also appear to be stronger for adolescent girls than for boys (DSD, SASSA, and UNICEF 2012).

[32] For Galiani and McEwan (2013) this result refers to the two poorest quintiles.

[33] Making purchases for the family, making clothes for family members, taking a family member to school, work, the health center, or the hospital, cleaning the house, washing and ironing clothes, cooking, fetching water or firewood, disposing of trash, and caring for small children, elderly family members, or sick individuals.

[34] Moreover, Dubois and Rubio-Codina (2012) find that Oportunidades lowered teenage girls' participation in care for younger siblings.

[35] Not displayed in Figure 6 because the study focuses on the intensive instead of extensive margin of child labor.

[36] For this set of estimates, only the differential impact of the intervention on boys versus girls is given. The impact on boys and girls themselves is not available.

[37] These estimates do not correct for truncation of the outcome variable, but other estimates provided in the paper suggest that most results are robust to corrections for censoring.

[38] A similar argument underlies the well-known theoretical work of Basu and Van (1998), who argue that pulling all children out of work through a ban may jolt the labor market to another equilibrium in which adult wages are higher and children do not work.

[39] Galiani and McEwan (2013) find some evidence of reductions in child work in the poorest quintile.

[40] We do not consider the older age groups also discussed in the paper.

[41] Because the results are preliminary, we have not included them in our discussion of the impact of unconditional and conditional cash transfers on the intensive margin of child labor.

[42] Amounts partly based on figures provided in Fiszbein and Schady (2009).

[43] We have no estimate for the amount transferred as a percentage of household income for the Female School Stipends program in Pakistan.

[44] Several other studies do not directly test whether conditional cash transfers protect children from participation in work when the household is hit by an economic shock. However, they do suggest that conditional cash transfers can reduce child labor during economic downturns. Maluccio (2005), for instance, shows that Red de Protección Social reduced participation in economic activities among children living in Nicaragua's coffee-growing regions during a sharp downturn in coffee prices in 2001 and 2002. Sparrow (2007) finds similar results in his study of Indonesia's Jaringan Pengaman Social emergency conditional cash transfer program. However, these results contrast with those of Amarante, Ferrando, and Vigorito (2011), who find no effect of Uruguay's anti-crisis conditional cash transfer program on child labor.

[45] The point estimates for conditional cash transfers in combination with investments in health and education facilities exceed those of conditional cash transfers only, but the estimated coefficients are not significantly different from each other.

[46] Moreover, there is some evidence of spillover effects at the locality level. The likelihood of working decreased for children from non-program households in treatment localities. However, for these same children the likelihood of working long hours (10 or more per week) increased.

[47] Fiszbein and Schady (2009) also caution that potential detrimental spillover effects within households deserve further scrutiny.

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Tables and Figures

Figure 1. Changes in the budget constraint when the transfer affects school participation.
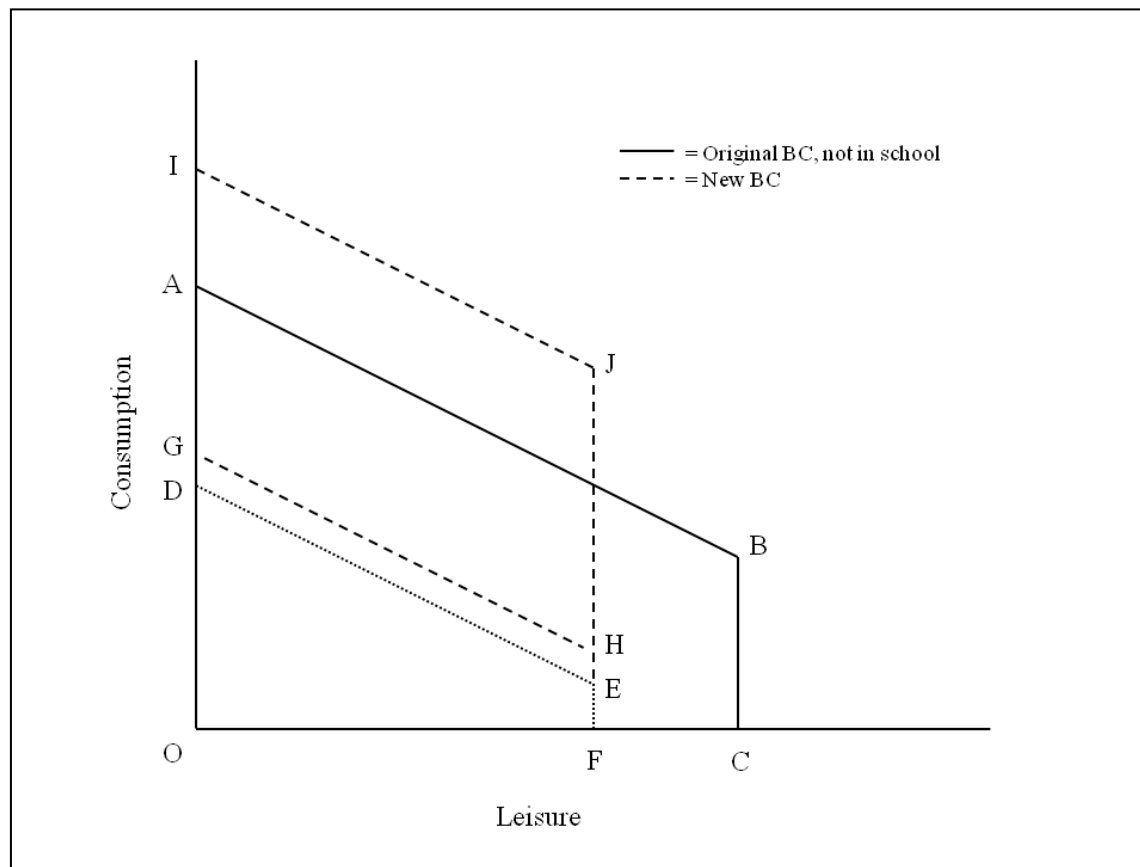
Notes: Household consumption is plotted on the vertical axis and child leisure is plotted on the horizontal axis. The solid line ABC represents the budget constraint for a household that does not receive a transfer and does not send its child to school. The dotted and dashed lines represent the budget constraints for households that do send their child to school *and* (i) receive no cash transfer (DEF), (ii) receive a cash transfer smaller than the cost of education (GHF), and (iii) receive a cash transfer that exceeds the cost of education (IJF). The segments AD, DG, and DI respectively represent the monitary cost of education, a transfer smaller than the cost of education and a transfer exceeding the cost of education. The segment FC represents the fixed amount of time a child spends in school.

Figure 2. Unconditional cash transfers tend to reduce child labor, although results are not uniform.
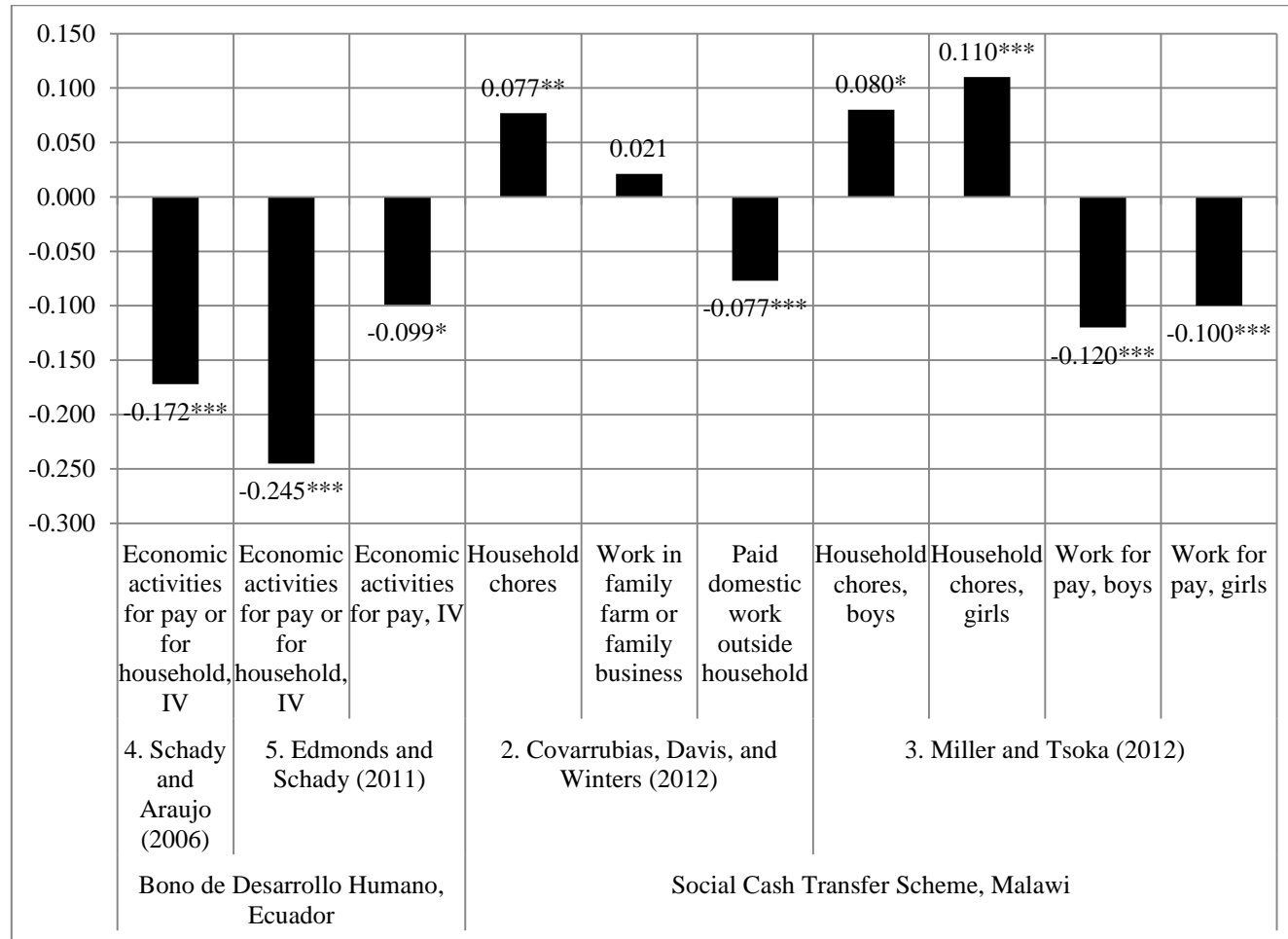
Figure 3. Conditional cash transfer programs tend to reduce the prevalence of child labor.
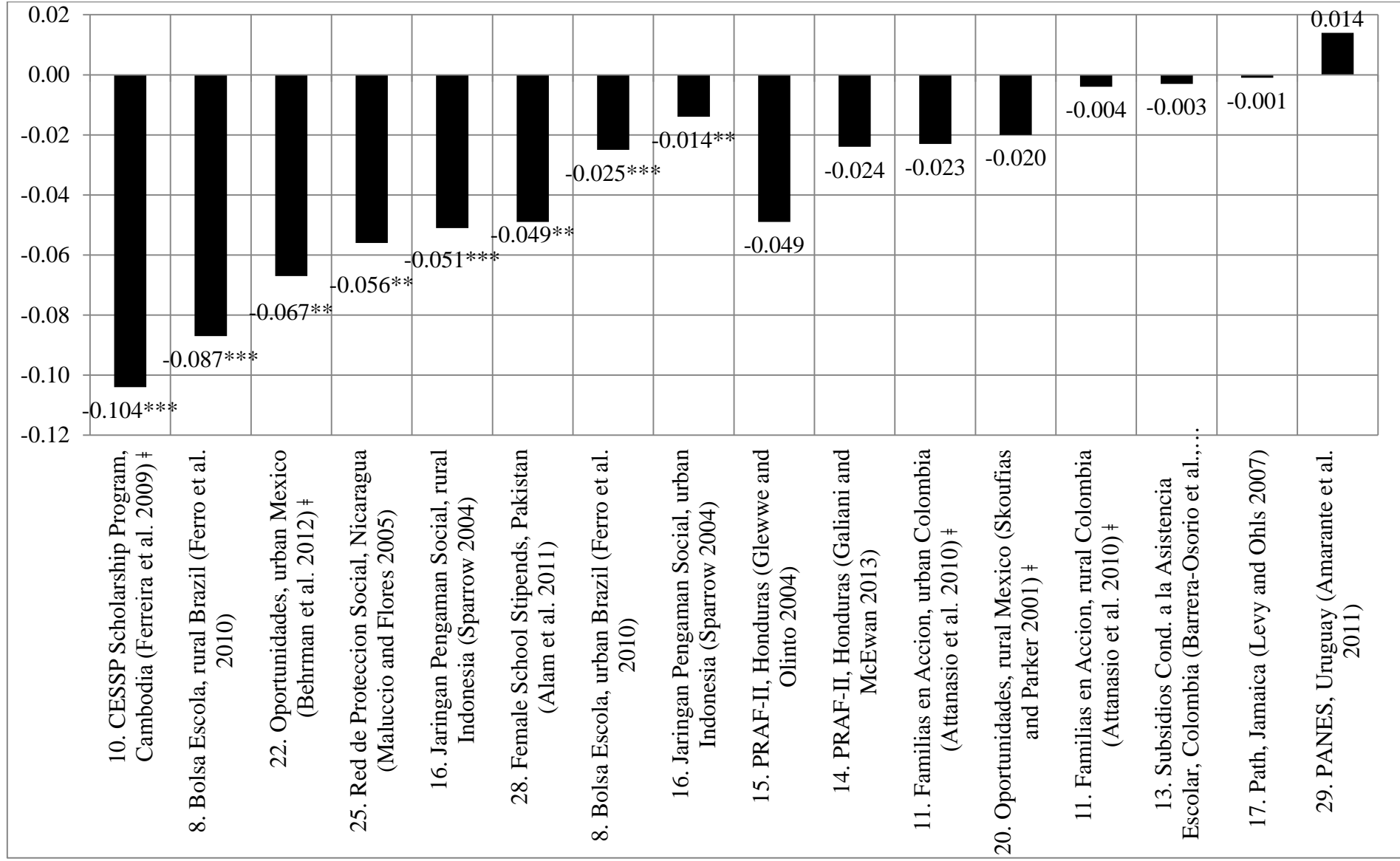
Note: Change in the probability of working as a result of the conditional cash transfer programs displayed on the horizontal axis. ǂ indicates that the estimate is a weighted average of multiple age and gender groups. To minimize text on the horizontal axis, we only display the first author of the study if the study has more than 2 authors. *** p<0.01, ** p<0.05, * p<0.1.

Figure 4. Conditional cash transfer programs tend to reduce weekly hours worked by children.

Note: Change in hours worked as a result of the conditional cash transfer programs displayed on the horizontal axis. ǂ indicates that the estimate is a weighted average of multiple age and gender groups. To minimize text on the horizontal axis, we only display the first author of the study if the study has more than 2 authors. *** p<0.01, ** p<0.05, * p<0.1.

Figure 5. The impact of conditional cash transfers on child labor tends to be stronger in poorer households and communities.

Note: Change in the probability of working as a result of the conditional cash transfer programs displayed on the horizontal axis by poverty quintile or percentile. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Figure 6. Boys experience stronger reductions in economic activities, girls in household activities.

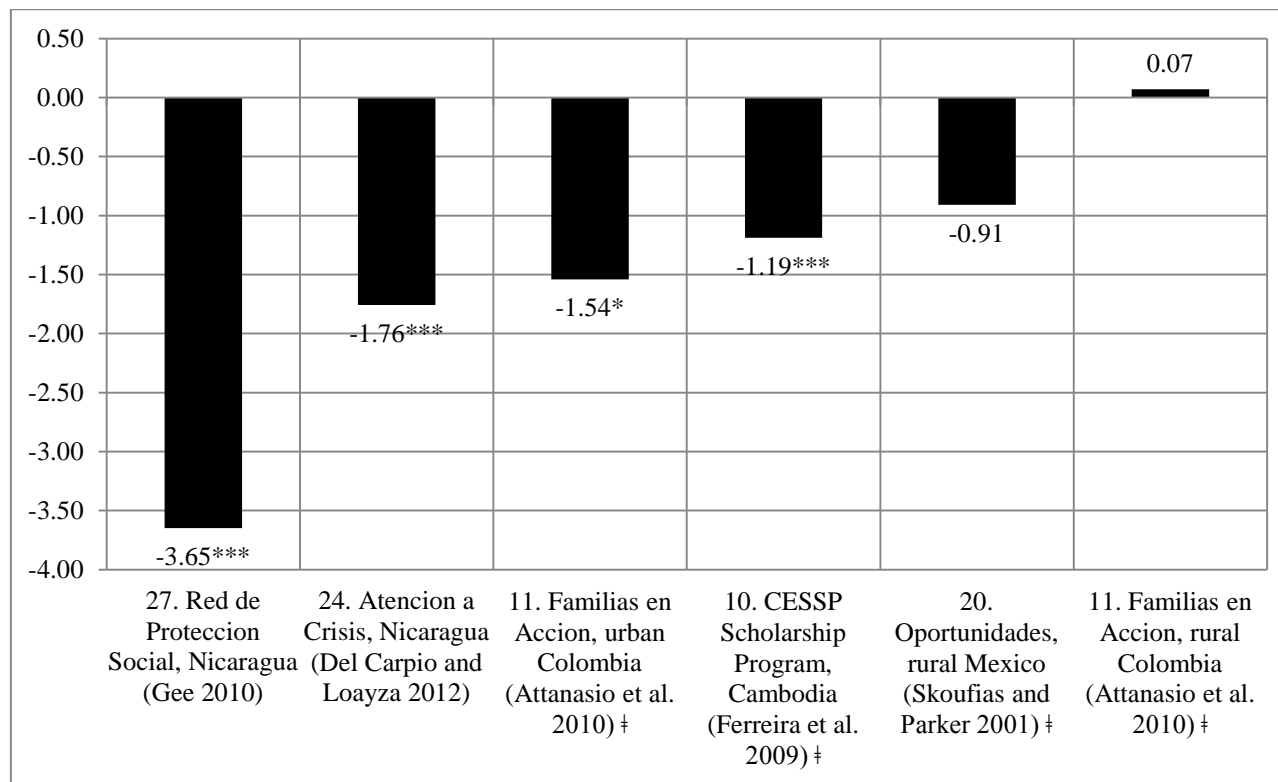

Value	Category
-0.006*	Economic activities for pay, boys
0.000	Economic activities for pay, girls
-0.006	Farm work, boys
0.000	Farm work, girls
-0.020*	Household chores, boys
-0.040***	Household chores, girls
-0.120***	Economic activities for pay, boys
-0.088***	Economic activities for pay, girls
0.043	Economic activities without pay, boys
0.074**	Economic activities without pay, girls
-0.111***	Economic activities for pay or for household, boys
-0.023	Economic activities for pay or for household, girls
-0.034*	Household chores, boys
-0.092***	Household chores, girls

20. Oportunidades, Mexico (Skoufias and Parker 2001)

10. CESSP Scholarship Program, Cambodia (Ferreira et al. 2009)

14. PRAF, Honduras (poorest and second poorest quintile) (Galiani and McEwan 2013)

Source: Authors

Note: Change in the probability of involvement in economic and household activities as a result of the conditional cash transfer programs displayed on the horizontal axis by gender. To minimize text on the horizontal axis, we only display the first author of the study if the study has more than 2 authors. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.
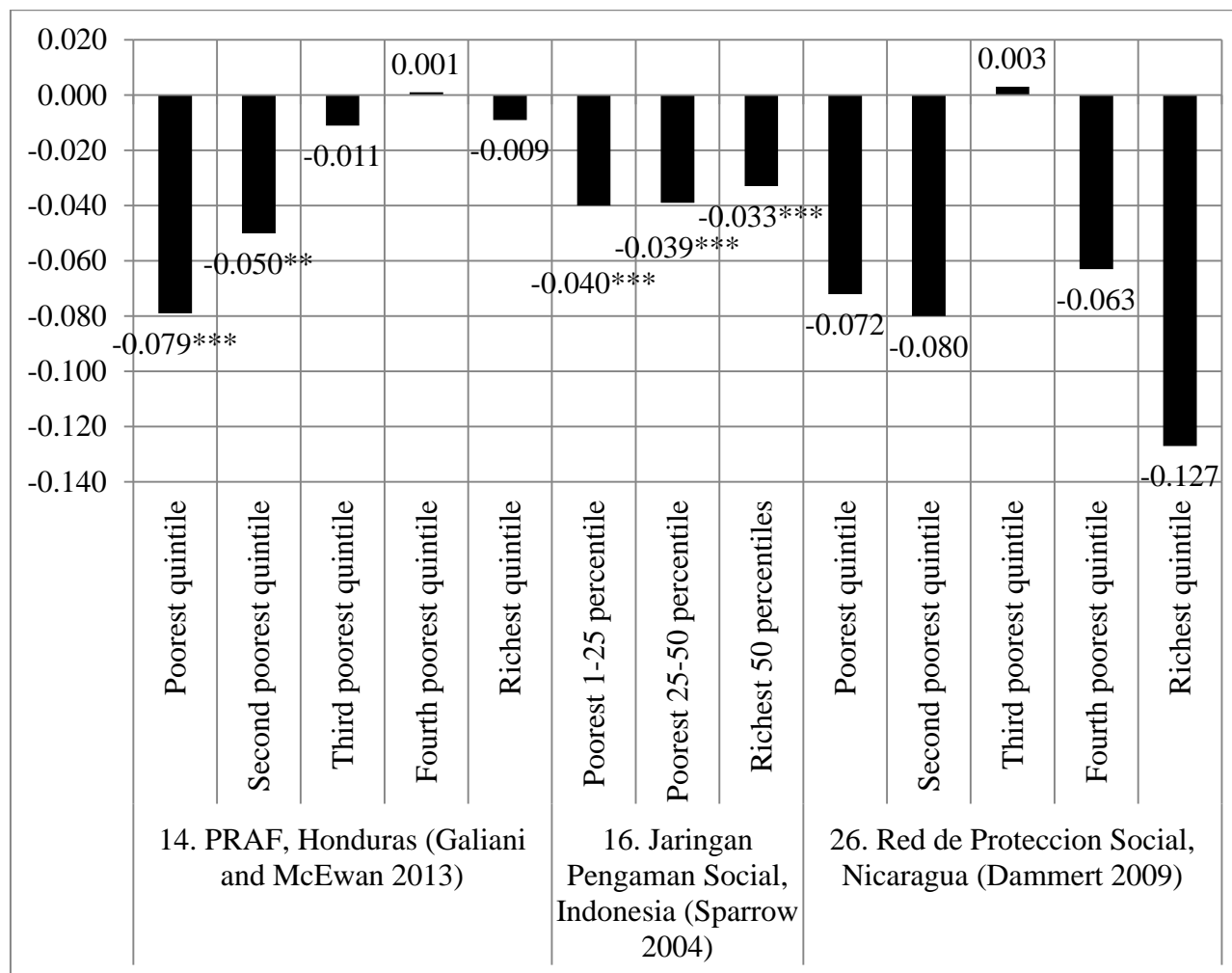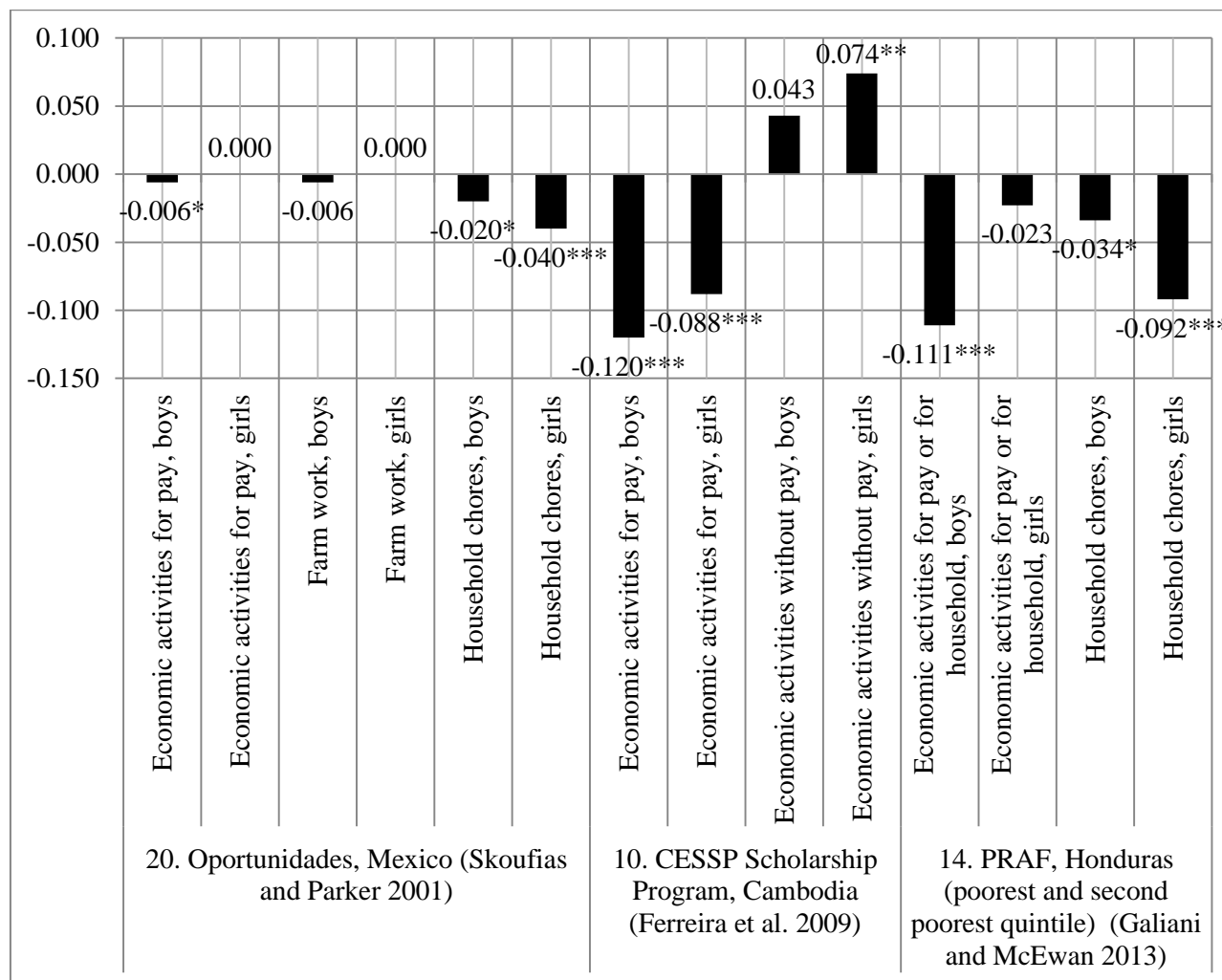
Table 1. Programs and studies discussed in main text

ID	Country	Program	Studies	Published in peer-reviewed journal	Methodology	Main age-range	Activities included in main outcome variable
				(4)	(5)	(6)	(7)
	(1)	(2)	(3)				

Unconditional Cash Transfers

ID	Country	Program	Studies	Published in peer-reviewed journal	Methodology	Main age-range	Activities included in main outcome variable
1.	Brazil	Old age pensions	de Carvalho Filho (2012)	Yes	Triple difference	10-14	Economic activities for pay
2.	Malawi	Social Cash Transfer Scheme	Covarrubias, Davis, and Winters (2012)	Yes	PSM (see footnote)	0-17	Multiple underlying activities
3.	Malawi	Social Cash Transfer Scheme	Miller and Tsoka (2012)	Yes	Dif in dif (see footnote)	6-18	Economic activities for pay
4.	Nicaragua	Bono de Desarrollo Humano	Schady and Araujo (2006)	No	Household level RCT	6-17	Economic activities for pay or for household
5.	Nicaragua	Bono de Desarrollo Humano	Edmonds and Schady (2012)	Yes	Household level RCT	11-16	Economic activities for pay or for household
6.	South Africa	Child Support Grant	DSD, SASSA, and UNICEF (2012)	No	PSM Dose response analysis	10 and 15-17	Economic activities for pay or for household
7.	South Africa	Old age pensions	Edmonds (2006)	Yes	RDD	13-17	Economic activities for pay or for household

Conditional Cash Transfers

ID	Country	Program	Studies	Published in peer-reviewed journal	Methodology	Main age-range	Activities included in main outcome variable
8.	Brazil	Bolsa Escola	Ferro, Kassouf, and Levison (2010)	In edited volume	PSM	6-15	Economic activities for pay or for household
9.	Brazil	PETI	Yap, Sedlacek, and Orazem (2002)	No	Regression (see footnote)	7-14	No definition of work given
10.	Cambodia	CESSP Scholarship Program	Ferreira, Filmer, and Schady (2009)	No	RDD	7-18	Economic activities for pay
11.	Colombia	Familias en Accion	Attanasio et al. (2010)	Yes	Probit and regression (see footnote)	10-17	Economic activities for pay
12.	Colombia	Familias en Accion	Fitzsimons and Mesnard (Forthcoming)	Yes	Regression (see footnote)	10-17	Economic activities for pay or for household or chores
13.	Colombia	Subsidios Condicionados a la Asistencia Escolar	Barrera-Osorio et al (2011)	Yes	Child level RCT	grades 6-11	Work last week as a primary activity
14.	Honduras	PRAF-II	Galiani and McEwan (2013)	Yes	Cluster RCT	6-12	Economic activities for pay or for household
15.	Honduras	PRAF-II	Glewwe and Olinto (2004)	No	Cluster RCT	6-12	Economic activities for pay or for household
16.	Indonesia	Jaringan Pengaman Social	Sparrow (2007)	Yes	Natural experiment IV	10-18	Economic activities for pay or for household
17.	Jamaica	Path	Levy and Ohls (2007)	No	RDD	6-17	Economic activities for pay or for household or chores
18.	Mexico (rural)	Oportunidades	Buddelmeyer and Skoufias (2004)	No	Cluster RCT	6-12	Economic activities for pay or for household
19.	Mexico (rural)	Oportunidades	De Janvry et al. (2006)	Yes	Cluster RCT	8-18	Economic activities for pay or for household
20.	Mexico (rural)	Oportunidades	Skoufias and Parker (2001)	Yes	Cluster RCT	8-17	Economic activities for pay or for household
21.	Mexico (rural, long-run)	Oportunidades	Behrman, Parker, and Todd (2011)	Yes	Cluster RCT and PSM	15-16	Economic activities for pay or for household
22.	Mexico (urban)	Oportunidades	Behrman et al. (2012)	Yes	PSM	12-14	Economic activities for pay
23.	Nicaragua	Atención a crisis	Del Carpio and Macours (2010)	In edited volume	Cluster and household level RCT	6-15	Hours worked last week for pay or for household
24.	Nicaragua	Atención a crisis	Del Carpio and Loayza (2012)	No	Cluster and household level RCT	7-14	Hours worked last week for pay or for household or in chores
25.	Nicaragua	Red de Protección Social	Maluccio and Flores (2005)	No	Cluster RCT	7-13	Economic activities for pay or for household
26.	Nicaragua	Red de Protección Social	Dammert (2009)	Yes	Cluster RCT	7-13	Economic activities for pay or for household
27.	Nicaragua	Red de Protección Social	Gee (2010)	Yes	Cluster RCT	7-13	Hours worked last week (no further definition given)
28.	Pakistan	Female School Stipends	Alam, Baez, and Del Carpio (2011)	No	RDD	12-19	Economic activities for pay or for household
29.	Uruguay	PANES	Amarante, Ferrando, and Vigorito (2011)	No	RDD	6-17	Working (no further definition given)
30.	Uruguay	PANES	Borraz and Gonzalez (2009)	Yes	PSM	6-15	Economic activities for pay or for household or chores

Source: Authors

Note: PSM stands for propensity score matching, RCT stands for randomized controlled trial, and RDD stands for regression discontinuity design. The identification strategy of Covarrubias, Davis, and Winters (2012) and Miller and Tsoka (2012) is enhanced by a randomization procedure in which 8 groups of villages (containing 23 villages in total) were randomly divided into an equally sized treatment group and control group (4 groups of villages each). The age range for the study by Covarrubias, Davis, and Winters (2012) is not explicitly mentioned and we deduce the reported age range from the descriptive statistics. Yap, Sedlacek, and Orazem (2002) compare children in nine treatment municipalities to children in nine control municipalities that were either scheduled for incorporation in the program or had applied to be incorporated. The identification strategy of Attanasio et al. (2010) and Fitzsimons and Mesnard (Forthcoming) is enhanced by the fact that control households are drawn from purposefully chosen similar non-program municipalities.

Table 2. Heterogeneity of conditional cash transfer child labour impacts

	(1)	(2)
Dummy for older age group	0.003	
	(0.015)	
Dummy for boys		-0.033
		(0.017)*
Number of observations	24	32

Source: Authors

Note: Column 1 shows the results of regressing changes in child labor for 2 age groups per study (within the 7-14 age range, if possible) on a dummy taking the value 1 for the older age group (and a constant). Column 2 shows the results of regressing changes in child labor for boys and girls on a dummy taking the value 1 for boys (and a constant). *** $p<0.01$, ** $p<0.05$, * $p<0.1$.