Child Labor and Education in Latin America:
An Empirical Review
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1. Introduction ................................................................................................................. 2
2. Child Labor around the World ..................................................................................... 2
3. Specific Findings .......................................................................................................... 4
4. Targeted Conditional Grants ....................................................................................... 8
5. Summary and Conclusions ......................................................................................... 10
References ....................................................................................................................... 14
Reviewed papers ............................................................................................................ 14
Other References ............................................................................................................. 14

Abstract

The paper reviews recent empirical evidence on the causes and effects of child labor in Latin America as well as the effectiveness of various policy initiatives to combat it. The findings support the view that working as a child creates a lifetime of costs in the form of lower earnings and increased probability of living in poverty as an adult. The linkages between child labor and education are found to be strong and adverse: child labor retards progression and reduces cognitive development. Against this backdrop, the empirical evidence suggests that various interventions can reduce child labor provided, first, there is a good understanding of the behavior of households, markets, institutions and the local political economy and, second, interventions are well designed, implemented and monitored. Such interventions are found to have potentially large future welfare gains from current public expenditures aimed at eradicating child labor.

Key words: child labor, education, conditional cash transfers, dynastic traps, Bolsa Escola, PETI, PROGRESSA, Red de Proteccion Social, Brazil, Ecuador, Mexico, Nicaragua, Peru.

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1. Introduction

This paper reviews the results of a comparative empirical research on child labor in Latin America\(^2\). It presents direct or indirect evidence from Colombia, Costa Rica, Ecuador, Honduras, Jamaica, Mexico, Nicaragua and Peru. It covers programs such as the Bolsa Escola and PETI in Brazil, PROGRESSA in Mexico, and the Red de Protection Social in Nicaragua. These programs focus not only on child labor (or primarily child labor) but may include objectives in other areas such as education and health. Some programs take the form of TCGs (targeted conditional grants) or, as more commonly referred to, CCTs (Conditional Cash transfers).

Overall, the findings of this paper support the view that working as a child creates a lifetime of costs in the form of lower earnings and increased probability of living in poverty as an adult (that is, child labor has intergenerational consequences by creating "dynastic poverty traps" whereby the children of child laborers are also likely to be poor, as are their children). And the empirical analysis of the effects of various interventions suggests that child labor can be reduced provided, first, there is a good understanding of the behavior of households, markets, institutions and the local political economy and, second, interventions are well designed, implemented and monitored. Such interventions are found to have potentially large future welfare gains from current public expenditures aimed at eradicating child labor.

The remaining of this paper provides a broad context of the economics of child labor (Section 2) and then dwells on specific countries and programs (Section 3 and 4). Section 5 summarizes the key findings and Section 6 concludes.

2. Child Labor around the World

Globally, child labor has declined steadily since the 1950s. It has been virtually eliminated in the wealthiest economies of Europe and North America, but these regions already had low levels of child labor in 1950. The biggest improvement was in Asia, where the proportion of children working declined 20 percentage points, mainly in the high-performing economies of East Asia. The incidence of child labor declined only 10 percentage points in Africa from a high base, and that continent (especially sub-Saharan Africa) retains the world's highest rates of child labor. Child labor declined by 8 percentage points from a relatively low base in Latin America, allowing it to maintain its forty-year standing as having the lowest incidence of child labor outside the developed world. Today Latin America has countries with negligible child labor, including Argentina, Chile, and Uruguay, but also has countries with some of the highest incidence: Bolivia, 25%, Peru, 28%, and Ecuador, 34%.

Despite the past progress on child labor, working children are still found in high numbers in many developing countries. Child labor surfaced as a major target of international policy initiatives in the 1980s. These culminated in a series of international conventions addressing child welfare, including the 1989 United Nations Convention on the Rights of the Child, the 1999 International Labour Organization Convention 182 on the Worst Forms of Child Labor, and the 2000 United Nations Millennium Declaration that set specific objectives such as universal enrollment in basic education, gender parity in

\(^2\)The research is part of a collaborative project between the InterAmerican Development Bank, the World Bank, and country and institutional partners working in the field of child-labor in Latin America. Its aim is to improve the understanding of the root causes and consequences of persistent child labor and to contribute to the policy debate with the goal of enhancing the current and future welfare of all children in Latin America.
schooling, and reduction in infant mortality. The documents from these three conventions share the common and rare characteristic of having been signed by practically all of the world's countries.

The increased interest in child labor has arisen for a variety of reasons. First, there has been increased international concern related to the process of globalization and its impact on child labor. It is less clear whether this concern arises from the adverse impacts of globalization on children in developing countries or the impacts of globalization on the competitive position of producers in developed countries. Child labor is a means by which some countries can lower production costs, but it may harm the children in the process. The call for minimum labor standards in developing countries also may be motivated by protectionist motives in the already industrialized countries. Regardless of the driving motive, attempts to install core labor standards into multilateral or bilateral trade agreements attest to the fact that child labor is gaining importance in the development agenda.

Second, the "win-win" pattern of more or less continuous economic growth since World War II experienced a series of setbacks in the last two decades. Economists had held some combination of two stylized development views: that growth can be continuous as long as the correct combination of fiscal and monetary policies are pursued, or that laissez-faire policies favoring expansion of the private sector will broadly disseminate the benefits of growth throughout the population, including the poorest households. Either paradigm would lead to rising incomes and a decline in the need for child labor. However, as economic growth in many developing countries slowed from its early post-war rates, income inequality rose and faith in governmental ability to foment change in the economy weakened, so the presumption that child labor would wither away on its own lost credibility.

Third, only recently have household surveys begun measuring the extent and conditions of child labor. Even the best current data sets fail to measure the worst forms of child labor, such as prostitution or drug trafficking. In addition, because most child labor is unpaid and not-for-market work that is done within the household, child labor often goes undetected in official statistics, particularly for girls doing work inside the home.

A much quoted figure in the early 1990s referred to 90 million child laborers. However, according to the latest and most reliable estimates, there are 211 million "economically active" children between the ages of 5 and 14 and 186 million "child laborers" in the same age group. More than 9% of children are engaged in work considered hazardous by International Labor Organization (ILO) standards. Even these best estimates are subject to considerable error. Defining a child laborer as one who works as little as one hour per week would tend to overstate the problem. On the other hand, child labor spells often are seasonal or of short duration, so estimates based on an observation during a particular week will miss work performed outside the survey week. Child labor in household businesses is difficult to distinguish

3 Several recent surveys covering the theoretical and empirical research on child labor have been published in recent years. Among the published papers, Grootaert and Kanbur (1995) set out the issues and covered much of the early work on child labor. Grootaert and Patrinos (1999) provide findings of comparable research studies on Cote d'Ivoire, Colombia, Bolivia, and the Philippines. Basu (1999) provides a review of concepts, theory and policy, and some aspects of the empirical evidence. Basu and Tzannatos (2003) provide a summary of the most recent work, including many papers that are still in working paper form.

4 ILO defines "child laborers" and "economically active children" in the same way for children in the 5-to-11 age group (i.e., those who did one hour or more work in the reference week). This "one hour" requirement renders a child economically active in the 12-to-14 age group, but to be considered a laborer a child should spend this hour (or more) in hazardous work, or else do fourteen hours or more of non-hazardous work per week.

5 Using Brazilian data, Duryea, Hock, Lam and Levison find that child labor participation in one week understates annual participation rates by one-third to two-thirds. If the worldwide estimates above are subject to similar
from household chores, causing further measurement errors. This last problem is particularly severe in measuring the labor participation of girls.

Latin America presents abundant opportunities for the study of child labor. Levels of child labor are unusually high relative to countries of comparable development. The pace of reduction in child labor slowed over the past twenty years, even though per capita incomes continued to increase. At the same time, the region has developed some of the best household-level data sets for the purpose of analyzing the determinants of child labor. Finally, may countries in Latin America have applied many innovative public policies targeting child labor some of which are reviewed below.

3. Specific Findings

1. Gunnarsson, Orazem, and Sedlacek use cross-country data to lay out the broad *global* stylized facts regarding the relationship between child labor and per capita GDP, adult literacy, and the share of agriculture in the economy.

   The relationship between child labor force participation and per capita income is convex and stable over time. The implication is that as a country develops, child labor will decrease, but at a slowing rate of decline. At some point, further reductions in child labor may require more than just increasing per capita income.

   All three of these factors have contributed to decreases in child labor in Latin America since 1950 though in varying proportions. Real per capita incomes in Latin America more than doubled between 1950 and 1990, but only served to lower child labor by 2.9 percentage points. Many of the countries of Latin America are in income ranges where further increases in income would be expected to have only modest effects on child labor. Consistent with that presumption, the 28% increase in real per capita income since 1970 has had no measurable effect on child labor in the region.

   Other factors have had a measurable impact on child labor since 1970. Adult illiteracy fell by 12 percentage points since 1970, contributing to a 4.2 percentage point reduction in child labor participation. During that period, agriculture's share of production fell 5.6 percentage points since 1970, lowering child labor by an additional 1.2 percentage points.

2. Sedlacek, Duryea, Ilahi, and Sasaki probe into how household attributes affect the probability that children will work, enroll, or progress in school. They frame their analysis using four similar household surveys in Brazil, Ecuador, Nicaragua, and Peru. Their findings are similar to the macro evidence reported above in Gunnarsson, Orazem, and Sedlacek: child labor is more common in rural areas and in households with less-educated parents. Income affects child labor more in the poorer countries than in Brazil.

   Furthermore, the paper demonstrates that enrollment rates underestimate the true extent of the differences in human capital investment between poor children and their more well-off counterparts. Even if they are enrolled in school, working children do not perform as well as their nonworking classmates, suggesting that work can have an adverse effect on learning even if it does not have a significant effect on enrollment. The distribution of hours worked per day by children suggests that a high proportion of child laborers work too many hours to be successful in school. More than half the working children in Nicaragua work more than five hours per day, as do just under half of the working children in Brazil. The measurement errors, then the true number of economically active children would be between 274 million and 352 million.
proportions in Ecuador (34%) and Peru (15%) are modest in comparison, but still high enough to suggest a problem.

Finally this paper uses variation in truancy laws across countries to disentangle the causal effects of child labor on school attendance. A 10% reduction in the probability of child labor raises school attendance by 7% and lowers the probability of lagging behind grade level by 12%. This is strong evidence that one mechanism for improving human capital production in schools lies in combating child labor.

3. Neri, Gustafsson-Wright, Sedlacek, and Orazem examine how the loss of the household head's income in Brazil affects the likelihood that children will drop out of school, enter the labor market, or fail to advance to the next grade level.

For the poorest households, adverse income shocks increase the probability that their children will start working, fail their grade level, or leave school. Children in higher-income households are not adversely affected by income loss of the household head. It appears that wealthier households can self-insure against adverse income shocks, but that poor households must use other means, including child labor, to replace lost earnings of the household head.

Furthermore, once a child begins to lag behind in school, there is an increased likelihood that the child will drop out and/or start working at a younger age, so even short-term increased probability of non-promotion can lead to permanent lifetime consequences.

4. Duryea, Hock, Lam, and Levison discover that child labor is characterized by short employment spells and large transition rates into and out of employment. This "intermittent employment" is consistent with the view that poor children often enter the labor market to meet short-term income needs for the household.

The implication for measures of child labor force participation rates are striking. Measured child labor participation rates based on point-in-time surveys can be one-half to one-third the participation rate based on children who worked at least part of the year. Furthermore, there is little difference between households whose children are working and households with children who are in school; children observed in school one period could easily be in the labor market the next.

The intermittent patterns of children's work and schooling have important implications for the design of programs intended to encourage families to keep children in school and out of the labor force. Income transfer policies should target households broadly rather than on current child labor market status. It may be as important to shore up income in poor households whose children are currently enrolled as it is to direct income transfers to households with children currently out of school. The high levels of intermittency also suggest that the cash transfers intended to replace the income earned in the labor market may be set too high, since many children do not receive a consistent stream of income. This would imply that the extra cost associated with the underestimate of child workers might be offset by a lower subsidy per child.

5: Ilahi, Orazem, and Sedlacek use a retrospective data set that identified when current adults first started working to study how child labor affects adult earnings. They add up the positive and negative effects of child labor on earnings through its impacts on work experience, years of schooling, and returns per year of schooling completed.
They find that adults who entered the labor market before age 13 earn 20% less per hour, have 26% lower incomes, and are 14% more likely to be in the lowest two income quintiles. These magnitudes are sufficiently large to suggest that current government investments to combat child labor can be at least partially repaid by higher lifetime earnings or tax returns and lower need for poverty alleviation programs when the children mature.

6. Emerson and Souza answer two related questions. First, are parents who worked as children more likely to have their own children work? Evidence indicates the answer is yes. Second, is this link only a function of permanent family income or is there a direct link between the child labor status of the parents and their children? They find evidence that such a direct link exists. The perpetuation of child labor across generations represents a likely mechanism for the perpetuation of intergenerational poverty traps. While the underlying cause for the child labor link is unclear, whether through social norms (Basu 1999, Lopez-Calva 2002) or unmeasured household-specific human capital, the link appears strong enough to suggest that delaying the age of labor market entry for one generation will delay the age of entry for the next generation, as well.

7. Sanchez, Orazem, and Gunnarsson use a unique data set on language and mathematics test scores for third- and fourth-graders in eleven different Latin American countries to determine whether child labor raises or lowers school achievement. Their findings are amazingly consistent across countries. In every country, child labor lowers performance on tests of language and mathematics proficiency, even when controlling for school and household attributes. The magnitude of the effect is similar to the percentage reduction in adult wages from child labor reported by Ilahi, Sedlacek, and Orazem. The adverse impact of child labor on test performance is larger when children work regularly rather than occasionally. Even modest levels of child labor at early ages cause adverse consequences for the development of cognitive abilities. These findings are not altered when controlling for joint causality between school achievement and child labor.

8. Cardoso and Souza examine evidence of the impact of the Bolsa Escola using national data from the 2000 Brazilian Census. Because Bolsa Escola was first adopted at the local level without central coordination, there was tremendous variation in the design, implementation, and funding level of the programs.

Evidence across all of these various programs suggests that targeted income transfers raised school enrollment by 3% to 4% for both boys and girls. However, the programs had no net effect on child labor. While the proportion of children who only work fell, the proportion combining work with schooling rose.

There is convincing evidence that children learn less in school when they work. Consequently, some of the potential gains from increased enrollment are lost because the increased time in school does not come from reduced time in the labor market. Two hypotheses are advanced to explain the lack of an impact on child labor. One is that the amount transferred is too small to compensate for the child's value of time in the labor market. The second is that the school day is too short, so the child can attend and still spend time at work. The latter possibility is explored in more detail in the work of the authors listed below.

9. Yap, Sedlacek, and Orazem examine the impact of a conditional transfer program known as PETI that targeted poor households in rural areas of Brazil. They measure the impact on school enrollment, labor participation, hours worked, academic progress, and dangerous work in recipient households compared to poor households in other municipalities that were not included in the program.
They found that participating children spent more time in school, less time at work, and less time in risky work, and progressed in school at a faster rate. Although the program may have had some adverse effects on children from nonparticipating households, those were swamped by the positive effects on participating children. The positive effects appear to be largest in programs that have been implemented the longest.

The innovative feature of the PETI is the use of an after-school program (Jornada Ampliada) that participating children were required to attend. The program effectively doubled the length of the school day, virtually eliminating the chance that parents could both meet the school attendance requirement and have the child work. The program also was installed in areas with high incidence of child labor and included all the poor in the community, increasing the program's scope for affecting child time use.

Whereas the targeted income transfer may be necessary to obtain the dramatic increases in voluntary time in school, the use of Jornada Ampliada also makes it feasible to monitor a truancy law that requires children to spend the day in school. The PETI experience suggests that by increasing time in school, whether voluntarily or through government mandate, child labor can be reduced.

10. Skoufias and Parker evaluate the impact of Mexico's PROGRESA program on child time use. PROGRESA transferred income to poor households in exchange for household participation in education, nutrition, and health programs.

To qualify for all three benefits, children must attend school and the family must make scheduled health clinic visits. Skoufias and Parker design their evaluation around three questions:

1) Does the program increase school attendance? Yes for both boys and girls. Because younger children were already in school, the biggest attendance effect was for older children. Because more regular attendance increases the pace at which children progress through school, the program raised years of school completed by an average of 10% with an implied improvement in lifetime earnings of about 8%. The gain in enrollments from PROGRESA occurs at one-tenth the cost of building and staffing more middle schools.

2) Does the program reduce child labor? The program lowers market work significantly for boys and it lowers household work marginally for girls.

3) Does the added time in school come at the expense of child leisure time of children? The answer is no for boys—the added time of boys in school comes from less time at work. For girls, the added school participation comes from a modest reduction in leisure time, with the balance coming from a combination of reduced time at home or in market production.

PROGRESA offers an additional insight into the factors that lead to successful interventions. While it shares the features of tying transfers to enrollment and targeting poor communities rather than just a subset of the poor, it also embeds the enrollment program in a more comprehensive program that reinforces the value of education, health, and nutrition to poorly educated parents. As a result, the program can break down some of the cultural factors that lead to intergenerational transmission of child labor. The various human capital interventions can reinforce each other by influencing the desired household behaviors regarding education, nutrition, and health.

11. Maluccio presents the results of a randomized community-based trial that evaluated the Red de Proteccion Social in Nicaragua. As with PROGRESA, recipients received income transfers conditional on child enrollment, but also conditional on household participation in complementary human capital development programs aimed at improving child nutrition and health. Parents also were required to
attend training programs. Compared to the Mexican program, the Nicaraguan communities were even poorer, with higher baseline levels of child labor and lower enrollment rates, so a high proportion of treated households would have to alter their behavior to get the transfer. Because virtually all households in the community were poor, virtually all households were part of the program. In such a fertile environment, the program's effects are found to be large: significant and substantial improvements in schooling matriculation and enrollment and significant decreases in child labor during the first year of operation. His findings suggest that PROGRESA-type interventions may hold promise for the poorest countries with the worst educational outcomes.

4. Targeted Conditional Grants

Over the past decade, Latin American countries have taken the lead in designing and implementing novel programs to address child labor and education demand constraints faced by poor households. The common mechanism is the use of targeted conditional grants (TCG). Ongoing projects can be found in Brazil, Colombia, Costa Rica, Honduras, Jamaica, Nicaragua, and Mexico. These programs target poor households with the goal of removing income constraints that may hinder school enrollment, attendance, and grade progression, and adequate nutrition or health.6

TCG programs have similar contractual forms: cash grants are given to households in exchange for agreement to engage in behavior that improves their children's human capital. The "good" behavior varies from program to program. For example, the Recife Bolsa Escola program in Brazil requires that families keep their 7- to 14-year-olds in school. The Costa Rican program provides a food coupon provided that all children in the family aged 6 to 18 attend school. In countries with a higher educational attainment, such as Mexico, Colombia, and Jamaica, this component also benefits secondary school-age adolescents. PETI requires children to regularly attend an after-school program. The Mexican and Nicaraguan programs also require that the households participate in nutrition and health components.

These programs have typically five main objectives:
1) They hope to increase educational attainment and/or improve health outcomes for children so that when they mature, they will be more productive and less likely to be poor.
2) By restricting grants to the poor and by improving their health, they aim to reduce current poverty.
3) By requiring children in beneficiary households to maintain minimum attendance in school, the programs hope to lower the time available for child labor.
4) By providing income support to poor families, they implicitly act as a partial safety net; i.e., they provide a regular source of income that may smooth household consumption in the event of an adverse income shock.
5) By providing supply-side financial support to schools and health facilities, some programs aim to improve the quality of service provision.

The evidence provided by the aforementioned research shows that Latin America fits the type of environment in which such programs could succeed. Households face irregular income streams and intermittent child labor patterns. Many more households are exposed to these conditions than is apparent from current income or employment states. Households move fluidly from poverty to near poverty conditions and back again. Children move easily into and out of the child labor market. Children exposed to such environments are more likely to drop out of school or work while in school. The

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6 Rawlings and Rubio (2003) present a comprehensive review of the features of the conditional transfer programs installed in Latin America since 1997, both those covered in this book and others. They also review some of the early evaluations of those programs.
evidence underlying the present review demonstrates that working while in school retards progression, reduces cognitive development, decreases lifetime earnings, and increases the probability of living in poverty as an adult. The evidence also shows that working as a child increases the probability that one's own children will work, leading to a cycle of poverty.

More specifically, the following five lessons seem to emerge from the application of TCG programs in Latin America to date:

First, the program must have sound criteria for selection and targeting to be cost-effective. The federally administered programs use geographical targeting at the national level. Geographic targeting is appropriate when the population is predominantly poor or near poor, and many households face uncertain income and employment streams, as one finds in Latin America. In Mexico, PROGRESA chose the poorest localities in the country first. In Brazil, PETI was installed in the localities with the highest incidence of worst forms of child labor. It is important to install these programs in locations where the conditional transfers bite, meaning they actually force behavior away from what the households would do in the absence of the transfer. Therefore, part of an effective program design is to condition the transfer on desired behaviors that the majority of household are not already exhibiting.\textsuperscript{7}

Some interventions were too financially constrained to benefit all deserving households, which limits the effectiveness of the TCG. This was particularly true in the 	extit{Bolsa Escola} programs in Brazil where beneficiaries represented as few as 2\% of the households that would potentially qualify. (Levinas and Barbosa, 2001). There are some significant advantages to covering all deserving households. There is the obvious ethical problem of helping some poor households and not others. However, there are also returns to scale in addressing the needs of many households at once: the costs of administering the program can be spread over many more households.

Furthermore, concentrating benefits on only a subset of the poor children in a neighborhood may create the illusion of success without any change in average time use in the neighborhood as a whole. Children excluded from the program are near perfect substitutes in production activities for children that are in the program. It is possible that any reductions in child labor or increases in school attendance among program children will be counteracted by increased child labor and reduced attendance for the excluded children. This substitution possibility is greatest when only a small fraction of the potentially qualified children are included in the program, leaving a large residual group of potential substitutes. In such circumstances, the program could create the illusion of success in that program children raise attendance and decrease child labor compared to non-program children in the same neighborhood, when in fact, the program is responsible for both the gains to the treated children and the harm to the excluded children.\textsuperscript{8}

Finally, if it is important to change a culture of child labor and illiteracy, it would seem important to transform the entire community rather than affecting just a subset of the households. In our evaluations, the interventions with more complete coverage appeared to be more successful. A necessary area of future research is to assess whether that assessment is in fact true—i.e., whether poor households in neighborhoods in which only some of the poor were allowed into the program altered their behavior less than did households in neighborhoods with complete coverage.

\textsuperscript{7} For a discussion of this point, see Skoufias and Parker.

\textsuperscript{8} Yap, Sedlacek and Orazem include a rare demonstration of how conclusions regarding the success of a program can be sensitive to whether the change in child labor supply following the program's introduction into a community only includes the participating children or all children in the community.
Second, there is strong evidence that these programs can reduce current poverty. Bolsa Escola, PETI, PROGRESA, and RED reached intended beneficiaries and raised household incomes sufficiently to reduce the degree of income vulnerability of participating families. One issue not yet resolved is the proper amount of the transfer. The answer may depend on whether the aim is to reduce child labor or to raise household income sufficiently to escape poverty. The answer is not a matter of academic debate—with limited budgets, the more one transfers per household, the fewer households one can help. Our assessment is that relatively small transfers may be sufficient to reduce the incidence of child labor and raise academic performance.\(^9\)

Third, the programs have improved educational indicators and outcomes. Three of the four programs reviewed in this paper (PETI in Brazil, PROGRESA in Mexico, and RED in Nicaragua) had significant impacts on time in school. It is likely that with longer-term evaluations, the educational enhancement would be more apparent because it is likely that recipient households will send their children to school longer. Limited evidence supporting that conjecture already has been found in the first few years of the PETI and PROGRESA programs. To date, there are only limited and inconclusive results relating the TCGs to improved test scores. That should also be a priority for future research because improved cognitive achievement is a necessary condition if TCGs are to raise future earnings and lower the incidence of poverty among recipients.

Fourth, there is evidence of reduction of child labor. Three of the four programs we evaluate showed evidence of reduced child labor. The magnitude of the decrease varied from 2 to 3 percentage points in Mexico, to 9% for 10- to 13-year-olds in Nicaragua, to from 4 to 26 percentage points in rural Brazil, depending on the state. The reduction in child labor was largest in rural areas, where child labor participation rates were highest before the programs were implemented. There was no change in child labor in urban Brazil where child labor participation rates were smallest before the program was implemented.

Finally, there is evidence that more comprehensive programs have larger impacts on child labor. The PROGRESA and RED programs covered health and nutrition as well as education. There may be economies of scope in delivering these programs simultaneously in that the administrative costs may be spread over multiple programs. Furthermore, the programs may reinforce each other by changing parental attitudes about investing in their children's human capital. This assessment is speculative, given the lack of a formal evaluation of whether child labor falls more rapidly in single-sector versus multi-sector approaches, but the issue merits investigation. The Honduras PRAF program represents just such an evaluation. There, the government is seeking to explicitly evaluate the impact of different combinations of supply and demand interventions.

5. Summary and Conclusions

To start with, child labor may be severely mis-measured by conventional surveys. Working spells tend to be short and are experienced by many households over the course of a year. The proportion of households with child laborers at some point in the year can be two to three times larger than the proportion with working children in a given week.

\(^9\) Nevertheless, the transfer must be large enough to compensate for the child's opportunity cost of schooling. In Honduras, the transfer averaged 4% of household income, whereas a child's labor often contributed more than 20% of household income for the poorest households. As a consequence, while the program had a small positive impact on enrollment and promotion rates, it had no effect on child labor (Glewwe and Olinto, 2004).
Eradicating child labor requires more than income growth: To be successful government interventions need to raise the value of child time in school relative to work.

In Latin America, child labor remains high despite the fact that many countries have reached middle income levels.

Child labor persists, even in households at the top of the income distribution. Therefore, unconditional income transfers alone are unlikely to eliminate child labor.

On the margin, government regulation in the form of truancy laws and age of school entry can affect time in school. Children who enter school early are less likely to enter the labor market at an early age, other things equal. Therefore, making preschool mandatory or lowering the age of school entry can lower the incidence of child labor.

The pattern of enrollments by age indicates that the largest gains in school enrollment through targeted transfers could be attained at the youngest ages (preschool through age 7) and after age 12. It is those ages which demonstrate the largest enrollment gaps between the poorest and richest households. Almost all children are enrolled in school between ages 8 and 11, suggesting only small gains from transfers conditioned on enrollment at those ages.

There are potentially large future welfare gains from current public expenditures aimed at eradicating child labor. Child labor lowers the wage these children will earn as adults and increases the likelihood that the children will live in poverty as adults. The estimated effects are large, so that males who entered work before age 12 earn 20% less per hour and are 8% more likely to be in the lowest income quintile than are comparable males who entered the labor force after age 12.

Child labor persists across generations. If a parent worked as a child, his or her own children are more likely to work at young ages. Delaying the age of labor force entry for current children delays labor market entry for the next generation, as well.

Even if a child remains enrolled while working, he or she learns less per year in school. The estimated effects are large, suggesting that children who work often have 16% lower scores on language exams and 14% lower scores on mathematics exams than do comparable children who do not work outside the home. This makes a strong circumstantial case that the mechanism by which early labor market entry lowers adult wages is the associated loss of human capital attributable to child labor. Delaying age of labor market entry raises cognitive achievement in schools.

Conditional income transfers to the poor can reduce child labor. The magnitude of the effect depends on the pre-transfer level of child labor and on the conditions placed on the transfer. It may also depend on the design of the policy such as:

- Transferring income to poor households in exchange for an agreement that the children will attend school can lower the incidence of child labor
- The effect is larger if the school day is lengthened, thus constraining the amount of time that the child can work
- With half-day school schedules, small transfers can induce working children to attend school, but they may not induce them to stop working
- Conditional income transfer programs appear to have more impact when they are aimed at all the poor or near-poor in an area, and not just a subset of the poor. This suggests a role for mutual
reinforcement of the desired behavior, whether it be increased school attendance, lower child labor, improved nutrition, or increased utilization of health clinics.\textsuperscript{10}

- Conditional income transfer programs have a bigger impact when they teach parents about the value of school and when they incorporate nutrition and/or health components along with the educational component.
- Conditional income transfer programs have a bigger impact when they are placed in areas that have high levels of child labor or low enrollment rates. In those areas, a high proportion of the program's expenditures will go toward altering parents' choices. In areas that already have low child labor participation and high enrollment rates, the transfer will serve mainly to reward households that were already engaged in the desired behaviors.

The early experiences from several Latin American experiments in child labor eradication, including others not currently included in this review\textsuperscript{11}, indicate some important successes in the use of income transfer programs that are conditional on children being in school and that target poor households. Having said that, many of these evaluations are of short duration. Thus it is not certain whether the shorter-term successes report in this review will persist in the longer-run. Nevertheless, the reported empirical regularities regarding the interrelationships between child labor, time in school, school performance, lifetime incomes, and intergenerational transmission of poverty can aid in the future design of targeted transfer programs to combat child labor.

Despite these findings, the agenda remains unfinished. While the success of these programs has generated a high degree of support and much optimism that the proposed objectives can be achieved, many challenges remain. Among them, the need:

1. to quantify the impact of these programs on the incidence of the worst forms of child labor;
2. to better understand the replicability of the Brazil PETI program;
3. to establish the optimal transfer level that maximizes impact subject to governmental budget constraints;
4. to understand the long-run impacts of these programs on behavior;
5. to identify the factors that ensure programs are financially sustainable in the long run;
6. to adapt the program design to the variety of country conditions in the region;
7. to overcome the institutional barriers that have constrained the ownership and adoption of these programs by the ministries of health and education; and
8. to better understand the complementary relationship between the supply and demand side interventions.

The accepted challenge confronting Latin American governments is ensuring that child labor is eradicated over time, and during the transition period, that it does not significantly impair the development and welfare of their children. Children work because of economic needs, but that is also often due to social norms. It follows that the trade-off between possible gains derived from early entry into the labor force and future welfare costs be quantified and analytically understood. Programs like PETI in Brazil help bring clarity to the debate by defining the worst forms of child labor as a priority policy issue, and providing support in the organization of a robust safety net system that prioritizes the needs of the most vulnerable children.

\textsuperscript{10}Zelizer (1985) and Lopez-Calva (2003) argue that social norms can raise or lower the perceived stigma associated with child labor. Broad-based efforts to combat child labor may be able to take advantage of mutual reinforcement among households to a greater extent than can more limited interventions that concentrate on only a small subset of households in a neighborhood or village.

\textsuperscript{11}Examples of other conditional transfer programs not formally evaluated in this book include Colombia (\textit{Familias en Accion}); Costa Rica (\textit{Supremonos}); Honduras (PRAF); and Jamaica (PATH).
The findings of this paper also highlight some of the successful and promising policy efforts by Latin American governments to combat child labor through TCG programs. Among their desirable attributes, TCG programs differ from most other social programs in their demonstrable effort to learn from evaluations of past and current policy experiences. These programs are also remarkable for their evident broad political support and the social consensus that enables their installation and continuation.

The results demonstrate some early successes in affecting behavior: more children are in school, use of health clinics and services has increased, and child labor has decreased. However, more evidence would be required to be sure that these programs lead to more permanent outcomes: improved learning, healthier children, and higher labor market earnings. Moreover, additional research will be needed in the following four critical areas: (a) the hidden child labor groups, from those working as domestic servants to child prostitution; (b) the health impact of the worst forms of child-labor and its interaction with poverty-related vulnerabilities; (c) the organization of the secondary schools in which poor working students may attend night classes; and (d) the determinants of the transition between school and work and their impact on future poverty incidence.
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