

# **WORKING PAPER**

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**CHILD LABOR IN LATIN AMERICA:  
POLICY AND EVIDENCE**

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## **I. Introduction**

Over the past decade child labor practices in developing countries and their implications for international trade have received increasing attention on the international agenda. Pursuant to these concerns, many countries in the Western Hemisphere have adopted programs designed to discourage the worst child labor practices and to provide families and communities with incentives to reduce child labor and increase educational attainment.

Given the increased attention to child labor and the threat of trade sanctions for weak child labor protections, it is worth evaluating the policies that have been adopted with the intent of improving working conditions for children. There is a growing empirical literature concerning the causes and consequences of child labor. The purpose of this paper is to evaluate these policy initiatives in light of the newly emerging empirical evidence. We will focus in particular on programs to address child labor practices in Latin America and attempt to evaluate these programs given the empirical evidence concerning the primary determinants of when and why children work.

In the following section we briefly review some recent legislative action and international agreements that are designed to pressure developing countries to improve child labor practices. We then turn to the empirical evidence concerning the determinants of child labor and their implications for the types of policies that are likely to influence household decision-making in a manner that reduces the incidence of child labor and increases educational attainment. We then discuss the likely effectiveness of some of the recent initiatives targeting child labor in the Hemisphere. Conclusions follow.

## **II. Labor Standards in Recent Trade Agreements**

During the 1990s the United States took something of a lead in the use of international trade as a lever to improve working conditions generally and reduce child labor specifically.

Although the United States has enjoyed little success in the World Trade Organization (WTO), labor standards have found their way into several bilateral and regional trade agreements. For example, when the U.S. Generalized System of Preferences (GSP) was re-authorized in 1984, some labor standards provisions were added. Similar qualifying conditions apply under the Caribbean Basin Initiative (CBI).<sup>1</sup>

Subsequently, concerns with labor practices posed an obstacle to ratification of the implementing legislation for the North American Free Trade Area (NAFTA) in the United States. Pursuant to these concerns, the United States, Canada and Mexico adopted the North American Agreement on Labor Cooperation (NAALC). The agreement specifically provides for trade sanctions in the event that the United States or Mexico fails to enforce its own laws regulating child labor practices<sup>2</sup>.

More recently, child labor has been specifically addressed in the appropriations legislation for the U.S. Customs Services (Department of the Treasury). In October 1997, the U.S. Congress legislated that the 1930 U.S. Tariff Act, Section 1307 forbidding the import of goods produced with prison or indentured labor, be applied to forced or indentured child labor.

Several other regional trading arrangements in Latin America have also included provisions concerning child labor. The December 1998 agreement creating MERCOSUR included the “Declaracion Socio-Laboral del Mercosur” which establishes a set of principles to be pursued by the signatories. Provisions include both principles consistent with national law as well as collective conventions and agreements. Similarly, Canada and Chile adopted the Canada-Chile Agreement on Labor Cooperation, commencing in 1997. This agreement adopts principals that are similar to those used in the NAFTA labor side agreement.

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<sup>1</sup> For a complete discussion of labor standards in international trade agreements see OECD (2000).

<sup>2</sup>To date, only one complaint has been made regarding child labor practices in Mexico, concerning illegal child labor on vegetable farms. However, the complaint was dismissed for lack of evidence.

The international community outside of the Western Hemisphere has also acted to extend provisions regulating child labor practices. In June 1998, the International Labor Organization (ILO) adopted the Declaration of Fundamental Principles and Rights at Work which calls for, among other reforms, the effective elimination of child labor. This declaration binds on all members whether or not they have ratified the ILO conventions pertaining to child labor. In addition, in June 1999, the ILO members passed a new fundamental convention (No. 182) banning the worst forms of child labor. This convention came into force in November 2000 and specifically addresses all forms of child slavery or practices similar to slavery, forced or compulsory labor, sexual exploitation, illicit activities, and work that harms the health, safety and morals of children.<sup>3</sup>

### **III. Determinants of Child Labor**

When evaluating the determinants of child labor it is necessary to consider a number of factors both economic and cultural. Casual empirical evidence supports many of the commonly held views as to why children work rather than attend school full-time. Evidence from some recent studies of child labor in Brazil, Ecuador and Peru are presented in Table 1.<sup>4</sup>

Poverty, of course, is the most commonly cited cause of child labor. For example, according to the 1991 census in Brazil, of the 60 million working children, 51 percent belonged to households with a per capita income that was less than half the minimum wage and 27 percent had a per capita income less than one-quarter of the minimum wage. Children aged 10 to 14 comprise the group for which the labor force participation (LFP) rate is most sensitive to economic conditions. According to the Brazilian Institute of Statistics, IBGE (1992), young

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<sup>3</sup> Child labor practices are also regulated by ILO Convention 29 that calls for the abolition of forced labor and Convention 138 that provides for a minimum age of employment.

<sup>4</sup> For more details see Rizzini, Rizzini and Borges (1998), Turbay and Acuna (1998), Garcia-Moreno (1998) and Glasinovich (1998).

adolescents from low-income households are five times more likely to be working than their counter-parts in high-income families.

Additionally, the number of children working and the hours worked can vary dramatically over the business cycle. Given the economic turmoil experienced by most of Latin America during the last two decades, progress made in lowering LFP rates for children has been disappointing. For example, Ecuador enjoyed an economic boom in the 1970s due primarily to a rise in oil production and prices. However, Ecuador's good fortune was reversed during 1980s. Based on an analysis of census data, it appears that the progress made toward reducing child labor in the 1970s was largely undone through the 1980s and into the 1990s. In 1974, the labor force participation rate for children aged 12-14 was 16 percent. Between 1974 and 1982, the boom period, the employment rate for all children (under the age of 18) dropped by ten percent. However, during the recession period between 1982 and 1990, children employed rose by 55 percent. Employment rates continued to rise into the 1990s. Between 1990 and 1993, the LFP rate for urban children doubled.

Household surveys support the view that poverty plays a major role in the child employment decisions in low-income households. For example, Spindel (1985) surveyed Brazilian adolescents in the labor force. For the poorest children in the sample, 54 percent cited economic motivation as the primary reason for working. By contrast, for working children in the higher income brackets, only 35 percent worked primarily for financial reasons.

In spite of the very strong correlation between poverty and child labor, it is not obvious why poverty itself would give rise to inefficiently high child labor. Families that allocate their time optimally between various forms of work and school presumably compare the current value of the child's labor against the future value of increased productivity of an educated worker. There is no particularly compelling reason why the productivity gains from educating a child from a poor family should be any larger or smaller than the gains for a child from a high-income family. Nevertheless, poverty could have a direct effect on schooling decisions. Families who

are barely surviving are likely to discount the future heavily, thereby giving less weight to future income earned by their educated children.

### *Capital Market Failure*

In addition to poverty itself, there is a set of issues closely related to poverty that may be contributing to inefficiently low levels of schooling. Baland and Robinson (2000) emphasize the importance of capital market failure as a contributing factor to inefficient child labor. They take as a point of departure the fact that child labor is a device for transferring income from the future into the present. A child who works today at the expense of acquiring an education will contribute to family income today at the expense of future productivity.

Capital market failure can emerge in several different guises. Consider first the case in which the present discounted value of an education is greater than the current value of a child's labor. In this case, it is clearly optimizing for a family to borrow against the child's future income to finance the child's education. Or, to be more specific, it is in the interest of the child to make any requisite contribution to household income by borrowing against future income, thus freeing the child to attend school rather than work. Baland and Robinson note that the inability of the child to access the capital markets or the inability of the child to pre-commit to repay education loans obtained by the parents on the child's behalf may give rise to inefficiently low educational attainment.

To the extent that such intra-family bargaining failure is contributing to poor educational attainment, it is possible for government policy to correct the failure with properly configured educational loans to poor families. A government loan that is tied to the child's educational performance and becomes the liability of the child, rather than the parent, allows the child to access the capital markets to meet required contributions to the family. Such a loan is efficient provided there is some reason to believe that the child would have voluntarily undertaken the loan if he/she had the cognitive ability to analyze the choices like an adult.

However, if parents treat their child's future as a contributing factor to their own sense of well-being, they may be willing to borrow against their own assets or future income in order to finance their child's education. In this case, a lack of collateral will prevent parents from accessing the capital markets, thus again giving rise to an inefficiently low level of education.

In the absence of access to formal capital markets, the household may still be able to tap internal assets. The presence of the father in the household, the presence of an older sibling in the household (particularly a brother), the capacity of the mother to engage in market work or property associated with a family enterprise can all be thought of as assets that can be drawn upon even if the family has no access to formal capital markets. For this reason, the presence of such household assets might be expected to lower child labor. Consequently, gender, birth order, the presence of older or younger siblings, the mother's work opportunities and the presence of a family enterprise are also important determinants of whether a child works, the type of work undertaken, the number of hours worked, and whether part-time schooling is an option. For example, it is common in Ecuador for the oldest son, once he has reached the age of 13, to take on an essential support role in a family or to play the role of primary income earner in families in which the father is absent. They fulfill many of the father's functions, freeing younger children to attend school or perform less onerous work (Garcia-Moreno, 1998).

Nevertheless, it may not be possible to determine *a priori* in which direction these family assets alter child labor rates. For example, in order for a mother with small children to engage in market work, she may require her older female children to engage in child-care rather than school. It is generally the case that gender plays a key role in whether a child is engaged in home or market work. In addition, as a consequence of the rigidities of market work, children may have time to attend school but are required to work while school is in session.

### *School Quality*

Poverty is not the only reason children work. Many families in Latin America continue to offer children for work even after the poverty line has been breached. Parents and children also cite independence, enjoyment, skill acquisition, socialization and to avoid idleness as reasons for employment. Perhaps the most troubling reason for high child LFP rates for higher income families is poor school quality.

The role of poor school quality cannot be understated. Peru provides a particularly striking example. The deficiencies in the facilities, supplies, teacher salaries and training seriously undermine the value of the time children spend in school. A third of all schools have only one teacher, a problem most common in rural areas. In rural Amazon, it is typically the case that there is only one teacher to handle 50 to 60 students in four to six different grades. The poorest schools may not have even the most fundamental educational supplies such as books. In rural areas, 83 percent of schools have no running water, electricity or indoor plumbing. Even in metropolitan Lima, only 60 percent of schools have electricity, according to the Ministerio de Educacion (1993).

Given the deficiencies in the public education system, some children work for the explicit purpose of earning the tuition for private education. For example, in Ecuador, one in ten working children studies in a private school.

### *Regression Analysis of Child Labor Decision-Making*

In order to disentangle the conflicting determinants of child labor and to assess the relative importance of each of the factors influencing child labor decisions, it is necessary to formally model and empirically estimate household decision-making. Two recent studies provide useful examples of how such analysis can be undertaken and the kind of results that can emerge. Cartwright (1999) has performed sequential probit analysis of child labor decisions in Colombia

and Cartwright and Patrinos (1999) have undertaken a similar study of urban Bolivia. Results are summarized in Table 2.

In both cases, households are assumed to use a sequential process for making child labor decisions. In the first stage, parents decide whether a child should work. In the second stage parents decide whether the child will work part-time or full-time. In the third stage the type of work is chosen. Sequential probit analysis is undertaken for the year 1993 to identify the family characteristics that are determining the probability that a child works, the probability of schooling and the type of work. Results for statistically significant explanatory variables (at the 10% level) for the first stage decision-making are presented in Table 3 and for the second stage in Table 4. In each case, entries are the probability derivatives at the mean of the explanatory variable.

Consider first the decision as to whether children should work at all. As can be seen from Table 4, poverty plays a central role. The log of household expenditures clearly has a strong negative impact on the probability of any work for urban and rural Colombia and urban Bolivia. These results certainly do not contradict the view that rising living standards will reduce the probability that a child will work. In addition, other direct strategies such as replacing the child's contribution to family income in return for school attendance may have a more immediate impact on child LFP rates.

It is also clear that older children are more likely to work than younger children and that boys are more likely to work than girls. As children grow older and acquire skills, the opportunity cost of schooling rises. This is particularly the case for adolescent boys who are increasingly able to perform physically demanding tasks as they approach maturity. Thus, it appears to be the case that it will be more challenging and costly from a policy point of view to induce older male children to remain in school.

There are a number of significant explanatory variables that suggest that the presence of household assets reduces the probability of child work, thus lending strong evidence to the possibility that incomplete credit markets give rise to inefficiently high levels of child labor. For

example, the presence of older children in the home considerably reduces the probability of child labor. Note that there is a measurable impact *above and beyond* the contribution older siblings make to family income. This is particularly the case for older brothers who embody the greatest human capital. In addition, parent's education reduces child labor for reasons other than the impact of education on the parent's productivity. It is possible that a parent's education is viewed as a marketable asset or it may be a reflection of the informational externalities associated with the value of formal education.

However, it also the case that the presence of some household assets increases the probability of child LFP. Mothers who are employed are more likely to have children who are employed. As will become clear below, this effect is to some degree due to the fact that older girls are required to replace their mother's contribution to household production when the mother is employed outside the home. Similarly, the presence of a family enterprise makes it easier for families to put children to work. As a consequence, a family may only be able to use such assets if their children work more rather than less.

In any event, expanding access to formal capital markets to families who otherwise lack collateral may lead to a reduction in LFP rates for children. However, it is also the case that placing constraints on household decision-making such as mandatory schooling may at least inhibit the family from turning to internal assets that can be accessed only if children work more. Providing working mothers with firm-level childcare may also help reduce the reliance on older daughters to care for their younger siblings.

It is also worth noting that, at least for Colombia, an increased cost of school is associated with a *lower* probability of work by children. The authors suggest that the cost of schooling in this case is a proxy for school quality, thus providing some evidence in support of the view that improving school quality may be an important factor in considering the value of work relative to school.

Turn now to the determinants of the probability of full-time work, summarized in Table 4. As in the first stage, the higher family income and the younger a child is the lower the probability of working full-time. However, the impact of gender is now reversed. Girls who work are more likely than boys to work full-time. It is also the case that the impact of a mother's market work and the presence of a family enterprise is now reversed. Although both of these family characteristics raise the probability of any work they also lower the probability of working full-time and not attending school.

The presence of a family enterprise in particular suggests that children who work for their parents may have more flexible schedules than children who work for a non-family employer. The flexibility makes it possible for children to work primarily when school is not in session.

### **III. Recent Policy Initiatives in the Western Hemisphere Addressing Child Labor**

Although the empirical results discussed in the previous section are by no means conclusive, they are certainly suggestive of the types of policies that might be effective in reducing the incidence of child labor. We turn now to consider some of the policy initiatives that have recently been undertaken in Latin America.

The most common strategy for controlling child labor and school attendance is to pass legislation mandating a minimum work age and years of compulsory education. The legal requirements are detailed in Table 5 for a select group of Latin American countries. Typically, children are required to attend school until the age of between 14 and 16 and then are permitted to begin working at the age of 14. Needless-to-say, many families in Latin America do not comply with the law.

More recently, several Latin American governments have implemented a range of positive strategies designed to improve compliance. The programs discussed are summarized in Table 6. For a more thorough description see U.S. DOL (1998). These programs include improvements in educational infrastructure, programs targeted at children who have fallen or are

likely to fall behind in school, financial incentives and sector specific programs. We discuss some of these below.

### *Educational Infrastructure*

Increased spending on books, supplies, buildings and teacher training have been pursued by several governments. Brazil has been one of the most aggressive in this regard. Beginning in 1997 the *Livro Didactico* project has devoted \$142.5 million for textbooks. The TV program *TV Escola* is targeted at raising the skill levels of teachers in rural areas. The program also includes the distribution of kits that contain instructional materials. Funds have also been made available to raise the wages of extremely low paid teachers and to build and improve public school facilities.

### *Remedial Teaching and Flexible Schedules*

Working children, given the competing work and school demands on their time, are particularly likely to fail to complete each grade with their cohort. Some empirical evidence discussed above suggests that greater flexibility in school schedules would help working children remain in school. Nicaragua's remedial education program *Extra Edad* targets older children who have failed to complete the primary grades by the age of 14. Classes are offered after work in order to allow the child to continue to earn an income while pursuing an elementary education. Guatemala has also introduced a strategy of flexible schedules to keep working children in school. Classes begin after market work is completed and students make-up missed school work with independent study. Children of migrant workers are also offered a more flexible school calendar, allowing students to resume school attendance as soon as they are able. Mexico provides flexibility by allowing the children of migrants to attend school in whichever district they happen to be currently residing. Peru offers classes in three shifts throughout the day. This

school schedule allows each student to combine work and school in a manner consistent with the requirements of the employer.

### *Financial Incentives*

Governments rely on a wide array of financial incentives to either make school more attractive or even to make school feasible. Among the most popular are school meal programs. Such aid programs are distinctive because they tie the aid to school attendance. Brazil launched *Marenda Escolar* in 1997, spending \$453.4 million on breakfast and lunch. Urban Brazilian families who are likely to put their children to work also receive food baskets from the Foundation of Childhood and Adolescence. Like food distributed at school, the food baskets are contingent on school attendance. Mexico provides approximately 4 million breakfasts a day to poor children attending school.

While food aid may make school more attractive, it may not be a sufficiently strong incentive to induce families to give up the income earned by children. As a consequence, some governments have instituted cash stipends for children attending schools. In Brazil, *Bolsa Escola* pays the equivalent of a month's salary to each family with an unemployed adult in the Federal District that keeps all of its children aged 7 to 14 attending school. In addition, the program makes a deposit equivalent to once month's salary into a savings account after each year of completed school through the eleventh grade. Funds are forfeited if the child fails to advance to the next grade.

Mexico introduced a similar, though not identical, program in 1997. The Program for Education, Health and Nutrition targets two million children who are not attending school. The program pays a bimonthly stipend to the families of children who maintain an 85 percent attendance record. The stipend ranges from \$7 to \$63 depending on the age and gender of the child.

Although the Mexican and Brazilian programs appear similar, some key aspects are likely to make the Mexican program more effective per dollar spent at lowering child labor. The Brazilian subsidy to families with an employed adult has features that repair some of the effects of capital market failure. Families without access to capital markets are forced to turn to the labor of their children in order to survive periods of economic adversity, such as an unemployed adult. Replacing the income of the unemployed adult will deter child labor only if the size of the subsidy places the family very close to the boundary at which child labor begins to decline. The income supplement will be particularly ineffective if the minimum wage for an adult worker is less than the cumulative earnings of the unemployed worker's children.

The educational savings account is equally deceptive. The family can access the account only after the child has successfully completed eleven years of education. Therefore, the savings account cannot serve as collateral for education loans nor can the family access the account to pay ongoing expenses. In addition, the child cannot pre-commit to surrender the proceeds to repay their parents even if the parent could access the capital markets on behalf of the child. As a consequence, none of the problems with capital market failure are remedied with Brazilian savings account.

The only impact the loan has is to raise the present discounted value of an education relative to current income. The increased return to education may affect the calculus in a family that is able to borrow in order attend school but cannot help families without access to capital markets.

By contrast, the Mexican program buys out the labor contract of the child from the parent. Participating children receive a stipend that replaces the income the child could earn by working in exchange for school attendance. Thus, all of the problems with capital market failure and their implications for inefficient child work are sidestepped. Issues of collateral and intra-family bargaining are no longer relevant. Furthermore, the Mexican program achieves its objective more cheaply than the Brazilian program. The Mexican subsidy only needs to be large

enough to replace the child's earnings in the family, not so large as to bring the family up to the level at which parents voluntarily remove their children from work.

Subsidy programs that replace the child's income boast some of the highest success rates. Between 1995 and 1996 the official dropout rate in the Brazilian Federal District fell from 11 percent to 0.4 percent. However, it is difficult to judge the quality of the reported evidence. The teacher's report on school attendance is required to receive the subsidy and also serves the basis for school attendance statistics. Teachers may have an incentive to misreport either because of bribes or concern for the welfare of the child.

Both Brazil and Mexico have designed additional income support programs targeted at specific sectors. The Mexican government targets children working in the fruit and vegetable sector in the northeastern state of Sinaloa. Aid is paid in the form of food packages worth about 30 percent of an adult's monthly salary. As with the income supplement, families are required to demonstrate a substantial school attendance record for their children. Local growers are required to contribute 30 percent of the cost of the food. Growers may also construct and furnish local schools. In such cases, the government provides teachers and supplies.

The ILO's International Program on the Elimination of Child Labor (IPEC) seeded a program sponsored by the Union of Rural Workers in Retirolandia in Brazil designed to provide families with assets that they could use to support their children in school rather than send them to work. The *Goat-to-School* program provides each eligible family with a goat and information on tending and rearing goats. Beneficiary families are required to use the milk to feed their children and to repay the program in goats without interest. This unique program provides families with the assets they need to find safer alternative employment for their children that does not interfere with schooling.

The *Goats-to-School* program is not very significant in terms of the number of children covered. Between 1996, when the program was begun, and 1998, 60 goats were distributed to 30 families affecting 100 children. However, the incentives and constraints built into the program

are quite sensitive and responsive to the evidence currently available as to why children work and in what occupations. Clearly the program provides families with an asset which produces an income stream that the family can rely on rather than on the labor services of their children. That is, poor families are able to acquire capital that allows them to fund current education for their children, thus eliminating inefficient child labor associated with incomplete capital markets. In addition, the loan can be repaid through the efforts of the children tending the goats since the loan is repaid simply by returning one baby goat to the program for each adult goat received. Thus, the intra-family bargaining problem that arises because children cannot pre-commit to repay loans taken out on their behalf is eliminated because the children, through their efforts tending the animals, are able to repay the loan on their own.

Furthermore, the children tend the goats, thereby continuing to make some current contribution to the family. However, the times at which the goats need tending does not conflict with schooling, thus providing each child with sufficient flexibility in their work schedule to combine school and work. Nor is the work so onerous that the children are too exhausted to complete their school-work. Finally, receiving the benefit is contingent upon school attendance. As a consequence, the program provides a strong incentive to substitute education for work even if the family is far from the income level that would place them near the work-school margin. As a consequence, we do not have to wait until income reaches some critical level at which parents start withdrawing children from school nor does the implicit subsidy have to be so large as to raise income to the poverty line to be effective.

To the extent that *Goats-to-School* has a design weakness, it is the absence of time consistency. Families receive the asset based on a commitment to place their children in school. However, there is no mechanism for enforcing on-going compliance other than the social pressure that might be brought to bear by the union implementing the program. The income subsidies described above that make a payment only after the teacher certifies attendance may prove to be more effective in lowering the level of child labor for a given level of expenditure.

Another interesting feature of the *Goats-to-School* program is that it is self-sustaining. Animals repaid become assets for new families entering the program. Although APEC provided the original funding, the program is now self-financing.

#### *Programs to Reduce Child Labor in Targeted Sectors*

Conditions for working children in some sectors are sufficiently hazardous that programs have been tailored to the specifics of the relevant sector. Cultural factors may also be sufficiently complex that simply relying on financial incentives may be ineffective. Examples include the Vale dos Sinos Project initiated in 1996 to reduce the employment of children in the Brazilian footwear industry and the HABITAT project initiated in 1998 to reduce child labor in the stone quarries of Guatemala. Both projects have a public education component designed to sensitize parents, employers and the community to the risks to children employed in these sectors. Program objectives also include improved working conditions, medical services and flexible school options. The government of Peru has also targeted children who work turning bricks in the Huachipa brick fields outside of Lima. In addition to mentoring and tutoring young children, the program provides health care and small business loans to start a family enterprise.

Providing alternative employment opportunities has also been used as a strategy to draw children out of the quarries of Carabayllo, Peru. Mothers who agree to keep their children out of work receive financial and other help establishing a micro-enterprise making plastic bags. Families are provided with equipment, raw materials and technical advice on beginning the business.

#### **IV. Conclusions**

The aggressive attention paid to the plight of child workers over the last decade has produced an array of empirical evidence on the determinants of child labor and policy initiatives designed to improve educational attainment. The empirical evidence points to a number of

household characteristics such as income, access to capital markets, family assets, school quality, work flexibility and family structure as primary determinants of child labor. Some of the more imaginative programs have taken the empirical evidence into consideration, attempting to address capital market failure, flexibility in both work and school schedules and school quality and availability.

Although poverty plays a central role in child labor and poor educational attainment, many other factors appear equally important. Several programs embody incentives designed to make school rather than work an optimal choice for the family without actually bringing the family up to the income level at which they would normally be expected to withdraw children from the labor force. As a consequence, the overall cost of reducing child labor is fairly modest and we may not have to wait for the time-honored development process to eliminate child labor.

Another interesting feature of the domestic programs recently adopted is that they are not punitive in nature. Families retain the option of offering their children for work under the same terms as in the absence of the policy. Therefore, if child labor does decline as a consequence of the program, policy-makers can be certain that the choice is voluntary and, thus, welfare improving for the family. By contrast, the array of taxes that might be imposed if trade penalties are brought to bear against countries who tolerate child labor are punitive in nature and so may leave families and countries worse off. Punitive measures advocated in industrialized countries may not be the most cost effective or justifiable set of tools available to reduce the number of children working or the conditions under which they live.

Finally, there is little evidence to date as to the effectiveness of the new policy initiatives. Programs tied to school attendance show considerable success but there is good reason to believe that there are reporting errors in the data. Thus, independent evidence of school attendance and literacy rates would be necessary to fully appreciate the effects of educational incentives.



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**Table 1**  
**Causes of Child Labor Based on Survey Evidence**

	<b>Brazil</b>	<b>Ecuador</b>	<b>Peru</b>
<b>Poverty</b>	Economic motivation cited* 54% for poor 35% for high income	Close negative correlation between economic activity and child LFP rates.	
	10-14 year olds incidence of child labor for low income 5 times rate in high income families**	1990-93 LFP rate for children doubled	
<b>Other</b>	Independence Enjoyment Avoid idleness Acquire skills	Extremely poor school quality+	Transfer of skills Socialization
<b>Age</b> <b>Labor Force Participation</b>  <b>Working children in school</b>		Ages 10-11 22.3 % 12-14 95.7 14-17 49.8  10-11 95.7% 12-14 64.8 14-17 40.6	16% of working children are 6-11 years and 84% are 12-17 years old
<b>Gender</b>	63% aged 10-17 male 37% aged 10-17 female	Most children working for wages are boys, domestic workers are girls	50% of working boys labor in agriculture 28% of working girls in domestic service
<b>School performance</b>	10 year olds completing 3 years of primary education Not working: 32 % Working: 21 %	74% of students entering 1 <sup>st</sup> grade failed to complete a primary education	
<b>Urban/Rural</b>	LFP 10-14 year olds 1990 Rural 43% Urban 24 %	LFP rates higher in rural than urban areas	Nationally 33% of working children in school#  Rural 20% of working children in school#
<b>Household Head</b> <b>Male</b> <b>Female</b>	LFP10-14 year olds 11% LFP10-14 year olds 18%		
<b>Work day 8+ hours</b>	10-14 year olds 46% 15-17 year olds 77%	10-17 years old 30% Urban children 70%	
<b>Number of siblings</b>	Positive impact on LFP		
<b>Reasons for leaving school</b>	Poor quality of schools most often cited	School cost and need to work most often cited	Poor school quality
<b>Language</b>		LFP Spanish 35% Indigenous 89%	

\*Spindel (1985).

\*\* Brazilian Institute of Statistics.

+ World Bank (1990).

# 1993 Population Census

<b>Table 2</b>			
<b>Sequential Probit Analysis</b>			
<b>Stage 1: Probability that a Child Works</b>			
<b>Variables Significant at the 10% Level</b>			
	<b>Colombia</b>		<b>Bolivia</b>
	<b>Rural</b>	<b>Urban</b>	
<b>Year</b>	1993	1993	1993
<b>Child Characteristics</b>			
Age	7.72	7.16	1.76
Gender	9.03	10.86	
<b>Parent Characteristics</b>			
Age Head of HH	1.98		
Father's Education	-1.98	-1.02	
Mother's Education	-1.95	-1.79	-0.37
Mother Working?	7.30	3.84	
<b>HH Characteristics</b>			
Log Expenditures	-10.81	-18.68	-4.63
Family Enterprise	7.77		
<b>Siblings</b>			
Sisters 10-15	-13.53	-14.58	-4.76
16+	-4.88	-8.91	-0.29
Brothers 6-9	-6.69		
10-15	-16.72	-17.26	-3.96
16+	-5.15	-8.77	
<b>Cost of Schooling</b>			
	-8.41	-7.59	6.16
<b>Observations</b>			
	1829	9821	4730

Entries are probability derivatives at the mean of the explanatory variables.  
Sources: Adapted from Cartwright (1999) and Cartwright and Patrinos (1999).

**Table 3**  
**Sequential Probit Analysis**  
**Stage 2: Probability that a Child Works Full-time**  
**Variables Significant at the 10% Level**

	Colombia		Bolivia
	Rural	Urban	
Year	1993	1993	1993
<b>Child Characteristics</b>			
Age	6.78	4.59	3.64
Gender	-31.35	-13.75	
<b>Parent Characteristics</b>			
Father's Education		-1.10	
Mother's Education		-1.21	-3.1
Mother Working?	-12.95	-8.25	-33.48
Father Union Member			-30.47
<b>HH Characteristics</b>			
Log Expenditures	-8.56		-34.88
Family Enterprise	-14.11		
Indigenous language			-27.42
<b>Siblings</b>			
Sisters 0-5 years	-10.71		
10-15			-12.87
16+		-5.70	-9.54
Brothers 0-5 years	12.89	-7.06	
10-15		-3.90	
16+		-1.02	21.49
<b>Cost of Schooling</b>			
	8.51	8.92	
<b>Observations</b>	624	1915	590

Entries are probability derivatives at the mean of the explanatory variables.  
Sources: Adapted from Cartwright (1999) and Cartwright and Patrinos (1999).

<b>Table 4</b>			
<b>Compulsory Education and Minimum Work Age</b>			
<b>Select Latin American Countries</b>			
<b>Country</b>	<b>Minimum Work Age</b>	<b>Compulsory Education</b>	
		<b>Ages</b>	<b>Years</b>
<b>Brazil</b>	14	7-14	8
<b>Guatemala</b>	14	6-15	10
<b>Mexico</b>	14	6-14	9
<b>Nicaragua</b>	14	7-12	6
<b>Peru</b>	12-16	6-16	11

Source: Adapted from USDOL (1998).

<b>Table 5</b>		
<b>Recent Educational Initiatives in Select Latin American Countries</b>		
<b>Brazil</b>	<i>Livro Didatico</i> <i>TV Escola</i>  <i>Fund for the Development of Primary Education and Teacher Improvement</i> <i>Constitutional Amendment no. 14 (60)</i>	1997 \$142.5 Million for new books 1997 \$73.1 Million teacher education and supplies Funds for schools and transportation for child workers Subsidies for the wages of low-paid teachers 60% of education budget for primary level
<b>Nicaragua</b>	Back-to School Program <i>Extra Edad</i>	Primary education for older children Teacher training for older children
<b>Guatemala</b>	Flexible Schedules	1997 Flexible school schedule and independent study for rural working children and migrants; time of day and school year
<b>Mexico</b>	Flexible Schedules <i>National Agricultural Day Laborers Program</i>	Flexible school attendance for the children of migrant workers

Source: Adapted from U.S. DOL (1998).

<b>Financial Incentives for School Attendance</b>		
<b>Brazil</b>	School Meals <i>Marenda Escolar</i>	1997 \$453.4 Million to fund breakfast and lunch for school children
	Food Baskets	For urban families with children at risk for work but are enrolled and attending school
	Cash Stipends <i>Bolsa Escola</i>	1995 Federal District \$28.7 million for minimum monthly salary for unemployed adult in families that maintain 90% school attendance for all children 7-14 years
	School Savings <i>Poupanca Escola</i>	Monthly salary for each child whose parent is enrolled in the above program deposited in a savings account. Funds forfeited if fail to advance through 11 <sup>th</sup> grade.
	<i>Goat-to-School</i>	Receive a loan of a goat in exchange for commitment to send children to school. Loan repayable in goats with no interest.
	Shoe Industry in Nova Hamburgo and Dois Irmaos <i>Val dos Sinos Project</i>	Extracurricular education and prevocational training for children withdrawn from employment.
	Street children in Bahia <i>Projeto Axe</i> <i>Stampaxe</i> <i>Modaxe</i> <i>Excola de Circo</i>	Counseling, literacy, vocational training and other education and entertainment for street children. Produce silk-screen T-shirts Produce clothing for fashion shows Training as circus performers
	<i>Casa da Passagem</i>	Education, vocational training and lodging for child prostitutes
<i>Eradication of Child Labor</i>	Targets rural families for health care, job training, housing, legal advice and emergency stipend (\$22-\$134) for families if 80-90% school attendance record plus pre- and post-school day programs	
<b>Mexico</b>	School Meals	1998 4 million breakfasts to children in rural and poor urban communities
	Cash Stipends <i>PROGRESA</i>	1998 \$250 million to fund Educational Scholarships for children who maintain an 85% attendance record grades 3-9 plus subsidies for school supplies
		Cash stipends for primary and vocational training and housing under condition of minimal attendance for urban and indigenous children
	Sectoral Subsidies Agriculture-State of Sinaloa	Monthly food packages worth \$30 to families who send children to school rather than work in agriculture. Growers provide facilities, government provides teachers/materials.
<b>Guatemala</b>	Stone Quarries in the Retalhuleu District	Mobile education units for working children, modified curriculum and vocational training
<b>Nicaragua</b>	Street vendors in Managua <i>Fund for Children and the Family</i>	Food, education, employment training, health care, de-tox, employment for parents
	<i>Pepsi Cola and MILCA bottlers</i>	Jobs and credit to parents of street vendors

<b>Peru</b>	Brick Fields outside Lima	Vocational training, mentoring, tutoring; teacher training; health care services; small loans to families
	Stone Quarries in Carabaylo	Support for starting plastic bag manufacturing family enterprises in exchange for commitment to keep children in school. Provide equipment, legal and technical advice, raw materials and marketing advice.
	<i>Street Educators Program</i>	Health Services and education for street children; counseling to reduce hours worked and hazardous work and improve educational attainment; loans to establish family enterprises
Source: Adapted from U.S. DOL (1998).		

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