The Economics of Child Labor

Campaigns against child labor are most likely to succeed when they combine the long arm of the law with the invisible hand of the marketplace

By Kaushik Basu

DHANBAD COAL MINES, Bihar, India (*opposite page*)

EAST WIND TRUCK FACTORY, Shiyan, China (*right*)

PHOTOGRAPHS BY SEBASTIÃO SALGADO

In the early days of the industrial revolution, inventors were often very forthright about the aims of their innovations. The co-inventor of the roller spinning machine, English mechanic John Wyatt, promoted it as a way for textile factories to downsize their labor forces. The contraption was so easy to run, Wyatt said, that businesses didn't need as many skilled craftspeople with spinning wheels; they could get by with children instead. "Adopting the machine, a Clothier formerly employing a hundred spinners might turn off thirty of the best of them but employ an additional ten infirm people or children," he wrote in 1741. The British attorney general was won over and, in granting a patent, noted how "even Children of five or six Years of age" could operate the machine.

Commending an invention for facilitating child labor is now a matter of distant history. By the end of the 19th century, child labor was on the decline in most industrialized nations. But globally the problem has not come to an end. In 2000, according to the International Labor Organization (ILO), 186 million children between the ages of five and 14—roughly one in six children—were illegal laborers, mostly in developing nations. Of these, 111 million did hazardous work, such as mining, construction and hard farm labor, with lifelong consequences for their health. Some eight million were slave laborers, child soldiers or prostitutes.

These figures have to be treated with caution. Child labor is notoriously difficult to measure or even to define. The ILO is careful not to count ordinary household chores as child labor; nonetheless, in different ways, its estimates both overcount and undercount the problem. At times, a modest amount of work classifies a child as a laborer, which inflates the figures; on the other hand, girls' work around the home, which often comes at the expense of their education, is severely underestimated. Despite these caveats, researchers agree that the ILO estimates may not be far off the mark.

But what should be done about it? The answer depends critically on what gives rise to child labor and why it persists. With a large and growing number of researchers working on this topic, our understanding has deepened considerably in recent years. This scrutiny has called into question the zero-tolerance stance that many politicians and policymakers once took. It was common in the 1990s to hear calls for an immediate ban on imports of products made with child labor. Activists sought to involve the World Trade Organization in imposing trade sanctions against nations where child labor was prevalent. These appeals were an unfortunate product of genuine misunderstanding and, often, self-interested economic protectionism—an effort to protect jobs from foreign competition masquerading as a concern for impoverished children.

SUGAR CANE FIELDS, Zona da Mata, Pernambuco, Brazil

SEBASTIÃO SALGADO *Contact Press Images*

An example of what can go wrong happened in Nepal, as a study in 1995 by UNICEF described. In the 1990s opponents of child labor pushed for a global boycott of hand-knotted carpets made by children. Many Nepalese carpet makers had a simple response: they summarily fired their children. As a result, between 5,000 and 7,000 girls became prostitutes. A well-intentioned campaign ended up hurting the very people it sought to protect. With a little more sophisticated knowledge of economics, such failures could be avoided.

Overview/*Child Labor*

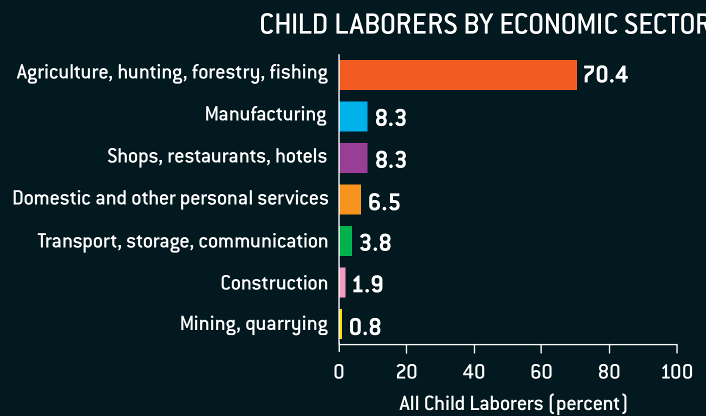
- Child labor, including some of its worst forms in factories, mines and brothels, continues to thrive—especially (though not only) in developing countries. Blanket bans on employing children in export industries can force kids into even worse situations, such as starvation. Policymakers need to take a more nuanced approach.
- Economic theory indicates that child labor can be self-reinforcing. It increases the pool of workers, keeping wages low—and ensuring that families must continue to send their children to work. Yet the abolition of child labor can also be self-reinforcing, by decreasing the labor supply, raising adult wages and eliminating the need for children to work. When these effects operate, selective bans and government assistance to families can tip an economy from the first condition to the second.

Hard Work

IN THE 19TH CENTURY commentators tended to blame child labor on parental sloth. Equating child labor with child abuse was a convenient assumption for justifying legislative action, and with repetition people came to believe it to be true. But most now recognize—and studies of working-class autobiographical writings and large data sets on household behavior in developing countries confirm—that the main cause of child labor is parental poverty. Few parents want to send their children to work unless forced by circumstance.

One of those household data sets, a 1991 study of rural Pakistan, illustrates how cause and effect operate. The mechanism is not always obvious. In some of the poorer areas, the study found that richer households were actually more likely to send their children to work than poorer ones. At first sight, the results seemed to contradict the poverty hypothesis. But in backward rural areas, labor markets often function inefficiently. Even if a household is impoverished and needs to supplement

Most people associate child labor with sweatshops, but manufacturing actually accounts for a fairly small fraction of economically active children. The majority work in agriculture, ranging from family farms to commercial plantations. In some countries, more than a quarter of farm workers are children under age 15.



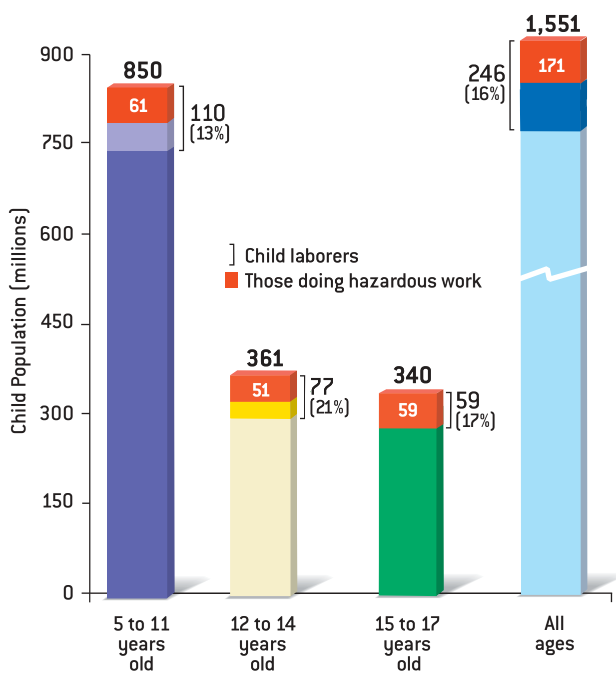
its income by putting the children to work, jobs may not be available. Only those households that own some land can avoid this problem: they can employ their children on their own property. Because land ownership is a form of wealth, it is not surprising to find that child labor is more common in richer households. Greater wealth does not cause the children to work but simply reflects land ownership, which creates opportunities to employ children.

Beyond a certain threshold of wealth, the incidence of child labor starts to go down. One can divide the Pakistani households into three categories: marginal (those owning less than one hectare of land), small (one to three hectares) and large (more than three). The percentage of children who worked increased from marginal to small households but declined for large households. Once a household becomes sufficiently rich, it has less need to make its children work.

The view that child labor declines with prosperity fits well with global time-series statistics. In China, for example, the percentage of children aged 10 to 14 who work—a number known as the child labor participation rate—steadily decreased from 48 percent in 1950 to 12 percent in 1995. The sharpest drop occurred in the 1980s, when the country's economic growth rate soared. Much the same has been true in Vietnam and India, for which Western economists have more reliable data. Conversely, in nations that have done worse economically, the decline in child labor has been marginal. In Cambodia, for instance, the child labor participation rate fell from 29 percent in 1950 to 25 percent in 1995.

The role of parental poverty illuminates why child labor is so difficult to eradicate. In Britain the practice continued to

Child Laborers by Age



CHILD LABOR is extremely common in the world today. The International Labor Organization counts 245.5 million laborers under the age of 17—nearly one in six young people. Of these, 170.5 million are doing hazardous work involving unsafe conditions, long hours or outright abuse (*red*). Below age 12, any child who works for pay is considered a laborer. From age 12 to 14, children can work up to 14 hours per week without being considered laborers. From age 15 and up, they can do any nonhazardous job.

SOURCE: INTERNATIONAL LABOR ORGANIZATION (1997) (*top*);
SOURCE: INTERNATIONAL LABOR ORGANIZATION (2000); UNITED NATIONS POPULATION DIVISION (*bottom*)

Easing into the Curve

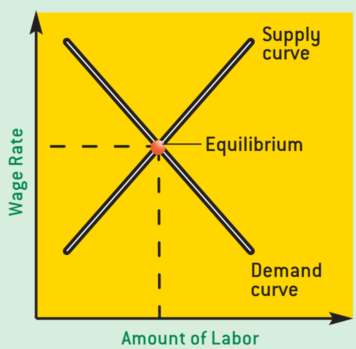
SUPPLY-DEMAND CURVES are one of the most basic conceptual tools in economics. The "curves" are two lines (which may or may not actually be curved) on a graph, symbolizing people's willingness to buy or sell a product depending on its price. Usually the curves cross at a single point, which indicates the price of the product in a free market of buyers and sellers (*left*).

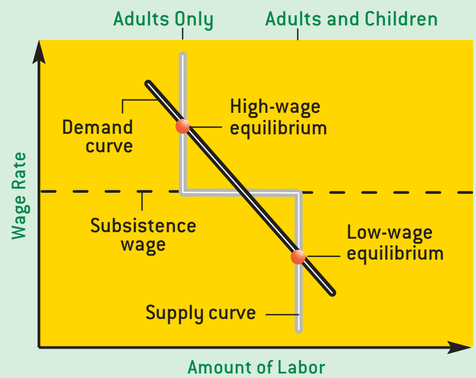
But in labor markets where children are considered potential workers, the supply and demand curves can cross at more than one point. Households typically send their children to work when the income of the adults drops to intolerably low levels. The threshold for "intolerable" will vary from society to society and household to household, but let us ignore such variations for the sake of clarifying the basic principles. Let us also suppose that a child's labor is equivalent to some fraction of an adult's. Based on these assumptions, one can draw a supply curve for labor with multiple equilibria (*right*).

This curve shows how much labor is available to employers, depending on the wage they offer. It has a steplike shape. If the wage exceeds the subsistence level, households do not send their children to work, and each household supplies one unit of labor (provided by the adults). If the wage is lower than the subsistence level, each household supplies somewhat more than one unit of labor (provided by adults and kids together). The behavior of employers is described by a demand curve. Typically demand curves slope downward: for an employer to hire lots of workers, the wages must be low.

This market can settle into one of two equilibria. Either wages are high and adults work, or wages are low and both adults and children work. With more sophisticated assumptions, the supply curve could look different. For example, if children work only to make up the difference between their parents' income and the subsistence level, then the horizontal segment of the supply curve becomes a downward sloping curve (a hyperbola, to be precise). But the possibility of multiple equilibria remains.

When a market has only a single equilibrium, measures such as a legal ban on child labor have to fight against the natural tendencies of the marketplace. Even if these measures succeed, they come at the price of economic inefficiencies, which can create a different set of social problems. Multiple equilibria eliminate this dilemma. If a nation is caught in one equilibrium, a ban could deflect it to another equilibrium, at which point the marketplace would work with, rather than against, the policy. Economically, all these equilibria are equally efficient. *—K.B.*





IN ECONOMICS TEXTBOOKS, the labor-supply curve is a straight line slanting upward (meaning that high wages attract more workers); the demand curve slants downward (high wages discourage employers from hiring); and the two meet at a single point (*left*). But in poor countries, the supply curve can have a stair-step shape (*right*). Low wages actually attract more workers, because children must enter the work force for families to make ends meet. When this happens, the supply and demand curves meet at more than one point.

spread until around 1860, despite the adoption of new laws and policies throughout the first half of the 19th century. The effect of the laws was to impose a cost on firms that were found to be employing children. It is arguable that the added cost, by making children less attractive to hire, tended to lower their wages. But because children worked primarily to reach a minimal acceptable level of income for their households, a lower hourly wage induced them to work longer hours. Hence, paradoxically, the laws may have contributed to a worsening of child labor. The same risk is there with modern laws, such as India's Child Labor Act of 1986, that impose fines on firms that hire children.

Restoring Balance

SOME COMMENTATORS look at the data and jump to the opposite extreme, drawing the conclusion that there is no scope, or need, for governmental action against child labor. But that, too, is an overreaction. In certain situations, a legal ban can be extremely helpful in eliminating child labor while leaving the children and their parents better off. This argument emerges from analysis of demand and supply curves.

These curves show how a market comes to equilibrium, in which the price of a product adjusts to ensure that demand equals supply. In the case of labor markets, the product is the amount of work being performed, and the price is the wage rate. The wage rate determines the willingness of employees to work (the supply) and of employers to hire them (demand). In the standard textbook model, if the wage goes up, the supply of labor goes up but the demand goes down; if the wage drops, the opposite happens. There is only one wage rate at which the two match.

Some markets, however, differ from this textbook case and are characterized by multiple equilibria—that is, they have more than one wage rate at which demand equals supply. Labor markets in poor countries are an example. Consider a country where adult wages are low and children are (for that very reason) made

NINA FINKEL

to work. Suppose that child labor is banned and that the ban is enforced. Firms that were using child labor will seek adults to fill those gaps. Competing for a smaller pool of workers, they will have to pay a higher wage. It is entirely possible that if wages had been high to start with, parents would not have sent the children out to work. Suppose the law is then revoked. Earning enough money to get by, parents will have no need to send their children to work.

The law works simply as a mechanism for deflecting the economy from one equilibrium, in which wages are low and children have to work, to the other, in which wages are high and children can go to school instead [*see box on opposite page*]. Once the economy locks into the new equilibrium, the self-interest of employers and employees keeps it there, even through minor economic shocks such as recession. The law is a one-time effort. In a paper that I wrote with Pham Hoang Van of the University of Missouri, we named such laws "benign legislative interventions" to distinguish them from routine legislative interventions, which require continuous surveillance and a sustained threat of punitive action [*see box at right*].

In theoretical models, economists often treat the switch from one equilibrium to another as costless. In reality, of course, that is not the case. Firms used to employing children may have to make investments in technology to cope with the new situation. In the country as a whole, the government will need to build more schools. Nevertheless, the models have been substantiated by historical analyses of, for example, the role that legislation played in reducing child labor in late-19th-century America.

Trapped

MULTIPLE EQUILIBRIA occur in other ways, too. A household that sends its children to work has to face some stigma for doing so. The degree of stigma is inversely related to the amount of child labor that occurs in society. That is, if child labor is widespread, people will be used to it and the stigma will be minor. To see how this may lead to multiple equilibria, suppose that only a few children work. Parents who send their children to work face the disapproval of their friends and neighbors. Therefore, only those parents who have a very great need to send their children to work do so. Hence, few children work. The society is in equilibrium—the low prevalence of child labor reinforces itself.

THE AUTHOR

KAUSHIK BASU is professor of economics, the Carl Marks Professor of International Studies and the director of the Program on Comparative Economic Development at Cornell University. (Carl Marks was a venerable merchant banker, not an alternative spelling of Karl Marx.) He has written extensively on development economics, welfare economics, game theory and industrial organization. When he graduated from high school in Calcutta, he says, his father wanted him to study physics, and he wanted to study nothing; they settled on economics as a halfway compromise. Initially Basu found economics dry and unappealing, but while at the London School of Economics he was completely taken in by the lure of the free-floating deductive reasoning on which economics is founded and decided to make that his career.

More Than One Way to Run a Market

THE IDEA of multiple equilibria also applies to situations other than child labor. In general, economists today accept that market economies are more efficient than centrally controlled ones. As individuals pursue their self-interest, their actions collectively make life better for all. But it is possible to go overboard and believe that individual rationality is always sufficient to achieve some desired social end. Economic models that have multiple equilibria demonstrate this fallacy.

Consider the debate that occurred in the 19th century about whether to have statutory limits on work hours. The standard laissez-faire argument was that if a worker was willing to work for 14 hours a day and an employer was willing to pay for that, the state had no reason to intervene. To do so would be paternalistic meddling.

A more sophisticated argument would look at the particulars of supply and demand. Suppose that there were 100 workers and several employers and that the subsistence income was $12 a day. Each worker preferred to put in eight hours a day, as long as he could earn at least $12, and worked longer only when that was necessary to reach the subsistence level. If the hourly wage was $2, workers stayed eight hours on the job and earned $16, for a total labor supply of 800 man-hours a day. If the wage was $1, workers had to toil for 12 hours to make the subsistence income, and the total labor supply was 1,200 man-hours.

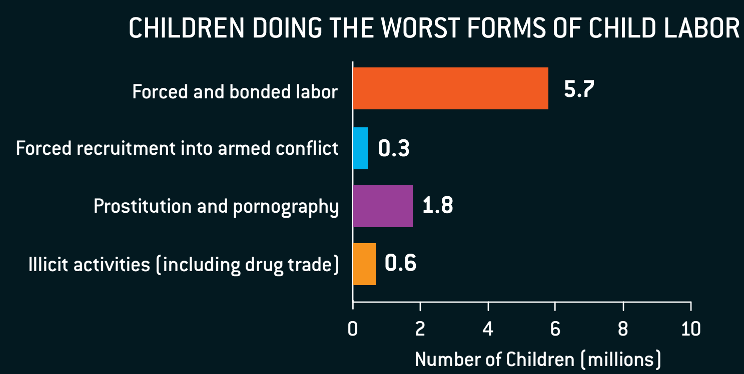
SHIH-YEN FOUNDRY, Hubei Province, China

As for the employers, they were more willing to hire workers when the wage was low. Suppose that for a wage of $1 an hour, the aggregate demand for labor was 1,200 man-hours a day and that at $2 an hour, it was 800 man-hours.

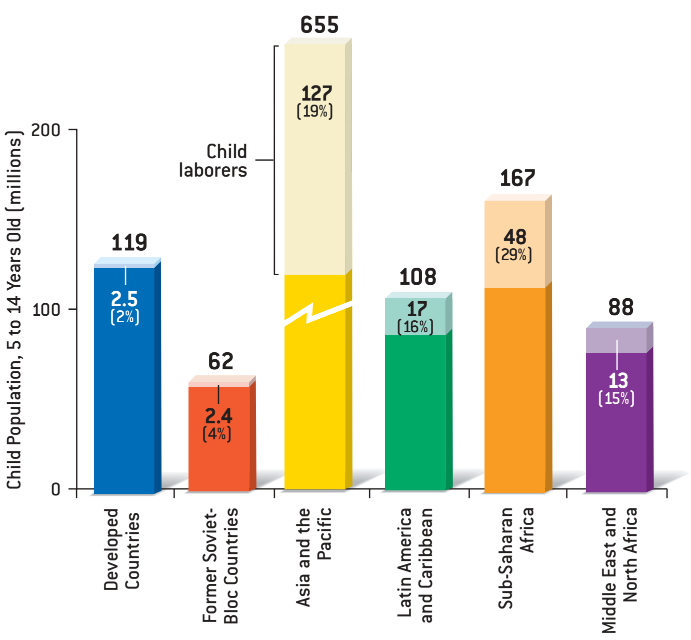
In this scenario, the wage rates of $1 an hour and $2 an hour are both equilibria: at these values, demand equals supply. If the economy were caught at the $1 wage equilibrium, it is true that each worker would want to work for 12 hours a day. Nevertheless, a statutory limit of eight hours per workday could be justified in the workers' own interest. This would be a benign intervention. All the workers prefer this equilibrium and would choose it freely, but they have no way to reach it unless they act collectively. To be sure, the high-wage equilibrium is less favorable for the entrepreneurs. Each equilibrium has its winners and losers.

Policy debates in economics are often polarized between those who see an unhindered market as the sole instrument of economic progress and those who would entrust it all to government. The concept of multiple equilibria is one illustration of the importance of the middle way, which recognizes the role of markets as well as the need for government intervention in certain situations. —*K.B.*

More than eight million children are thought to be trapped in debt bondage, forced military service, sexual slavery or other abusive situations. Developed countries, including the U.S. and European Union members, account for about half a million of these children. These figures are consistent with estimates that 1.2 million children are trafficked across borders every year.



Child Laborers by Region



IN ABSOLUTE TERMS, the largest number of child laborers live in the developing countries of South and East Asia. But in relative terms, the prevalence of child labor is highest in sub-Saharan Africa, where an estimated 29 percent of five- to 14-year-olds work for a living. Child labor is much less common in the developed world but has not disappeared altogether. (Technical note: The total child population figures here differ slightly from those on page 87 because of revisions in the population estimates.)

SOURCE: INTERNATIONAL LABOR ORGANIZATION (2000)

If, on the other hand, many children work, the stigma of child labor is lower. More parents are inclined to send their children to work, and again the society is in equilibrium. If the prevalence of child labor falls in between these levels, the society is out of equilibrium and will go through a period of change until it reaches one of the equilibria.

Another type of equilibrium relates to the vicious cycle of poverty. People who worked as children received less education and tend to be poorer as adults, so they are more likely to send their children to work. Families can be trapped in a perpetual child-labor cycle. Conversely, they might be trapped in a virtuous cycle of rising wealth. This theory has recently been tested and validated using a large data set on Brazilian households. Parents who had worked as children were indeed more likely to put their own children into the labor force.

Interestingly, this trend was true even when the experimenters controlled for adult incomes. People who had worked as children were more likely to send their own kids to work than were people of equal income who had not worked as children. Thus, although economics is the main factor in child labor, it is not the only one. Parents who have a history of child labor tend to have social norms and preferences that attach a lower value to their children's schooling. Just as the cause of the fire that destroys a house can be both the spilled kerosene on the floor and the discarded cigarette stub, child labor can have many triggering factors.

The tendency of child labor to reinforce itself, through either economic or social means, seems to be cause for pessimism. But the converse—the tendency of child labor, once eliminated, to stay that way—works in favor of reformers. Multiple equi-

STEEL PRODUCTION PLANT, Cairo, Egypt

libria are closely related to the phenomenon of "tipping," whereby a small change suddenly leads to a sharp movement, just as the jug that is tilted gently will at some point tip over. Consider a society that has multiple equilibria and is caught in the high-child-labor equilibrium. Now suppose that through some intervention, such as a law or slow shift in attitudes, child labor is cut down little by little. At some point, the labor market moves into the zone of attraction of the other equilibrium. Child labor then falls off rapidly, without any further intervention. In the U.S., child labor remained widespread until 1900 despite more than 70 years of attempts by state governments to ban it. But when it finally began to decline, the decline was extremely rapid. By 1930 it was almost gone.

Step by Step

A FRIEND OF MINE once tried to persuade me to take up regular jogging by claiming that every 10 minutes of jogging would increase my life expectancy by eight minutes. At first, that seemed incentive enough, but then it struck me that it all depended on what I wanted to maximize in life. If it was my nonjogging life span, then I needed to worry that every 10 minutes of jogging would decrease my nonjogging life by two minutes. Facetious though this example may sound, it points to the important and often overlooked fact that whether a particular policy is desirable or not depends on its ultimate objectives.

If controlling child labor is not an end in itself but an instrument for enabling children to grow up into productive and happy individuals, then policies have to be evaluated against this larger yardstick and not just the immediate one of whether it halts child labor. In the poorest regions, society may in fact have to permit children to work a few hours each day. Studies in Peru and Brazil have shown that children's labor is often the only way they can finance schooling for themselves or their siblings and thereby ensure an eventual escape from poverty for their progeny. Such findings raise troubling moral questions, but if policy is to be effective, it must account for the reality of people's lives.

Many commentators have argued—and I agree—that legislative action is not the best way to control child labor, barring some special cases, such as when we have reason to believe that there are multiple equilibria (and so a benign intervention will work). In general, policymakers should work to improve the conditions and earnings of adult laborers so as to diffuse the conditions that foster sending children to work. For instance, during an economic downturn, fluctuations in income may compel parents to withdraw their children from school. Even if the kids return to school later, they find it difficult to catch up and often drop out altogether. Providing parents with access to affordable credit and insurance can help them ride out hard times without resorting to child labor. Small incentives, such as providing children with a midday meal in school or giving parents a subsidy for sending their kids to school, can also sharply reduce child labor, as has been shown in Brazil and Bangladesh.

In tackling the problem of child labor, it is easy to fall into the trap of complacency, leaving it all to the markets, or into the trap of moral self-righteousness, trying to remove child labor in one stroke, with no concern for the well-being of the alleged beneficiary of such a policy. We now have enough information and understanding of the problem that we can aim to eliminate child labor. It will take restraint and a careful construction of nuanced policy interventions. SA

MORE TO EXPLORE

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For statistics on child labor, visit the International Labor Organization at **www.ilo.org/**