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ABSTRACT

International Labor Standards and the Political Economy of Child Labor Regulation^{*}

Child labor is a persistent phenomenon in many developing countries. In recent years, support has been growing among rich-country governments and consumer groups for the use of trade policies, such as product boycotts and the imposition of international labor standards, to reduce child labor in poor countries. In this paper, we discuss research on the long-run implications of such policies. In particular, we demonstrate that such measures may have the unintended side effect of lowering domestic support for banning child labor within developing countries, and thus may contribute to the persistence of the child-labor problem.

JEL Classification: J20, J88, O10

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1 Introduction

The eradication of child labor in developing countries is widely viewed as a key goal for the work of governments and international organizations. Yet despite many efforts at both the national and international levels, the phenomenon of child labor has proved remarkably resilient. In 2004, there were still more than 200 million child workers in the world (Edmonds (2008)). A closer look at the data reveals a lot of heterogeneity across countries. While some countries have successfully eradicated child labor early on in their development process, in other cases child labor remains widespread even at fairly high income levels (Doepke and Zilibotti (2005)).

One reason why child labor is difficult to eradicate is that in countries where child labor is widespread, political support for child-labor restrictions is often weak. In our earlier work on the political economy of child labor (Doepke and Zilibotti (2005)), we argue that the lack of political support for restrictions is due to economic dependence on child labor. In countries where child labor is unrestricted, parents often choose to have many children in order to maximize child-labor income. High fertility, in turn, implies that families become economically dependent on child labor and unable to afford sending their children to school. Such families perceive that they have little to gain from child-labor restrictions.

The lack of domestic support in many developing countries for banning child labor raises the question of whether the international community should step in to fight child labor. Indeed, in recent years support has been growing among rich-country governments and consumer groups for measures such as boycotts of products that are manufactured using child labor and the imposition of international labor standards. However, such proposals have brought considerable skepticism from economists, on the grounds that trade sanctions can shift child employment towards firms producing for local markets that offer worse working conditions and lower salaries (see, e.g., Edmonds (2008) and Basu and Zarghamee (2008)).¹

In this paper we discuss our ongoing research, based on Doepke and Zilibotti (2008), on the political-economy implications of the use of trade sanctions in the fight against child labor. Even if trade sanctions have negative short-term impacts

¹Basu and Zarghamee (2008) argue that boycott and trade sanctions may increase child labor. Their argument is that sanctions tend to depress child wages, and that the response of poor families depending on child labor to avert extreme poverty may be characterized by strong income effects. For surveys of the literature on child labor and the issue of international labor standards in particular see Basu (1999), Edmonds (2008), and the edited volume by Basu, Horn, Romàn, and Shapiro (2003). A theoretical review of the implications of child-labor restrictions is given in Doepke and Krueger (2006). Empirical results on the influence of trade on child labor can be found in Edmonds and Pavcnik (2005), Edmonds and Pavcnik (2006), and Edmonds, Pavcnik and Topolova (2008). We discuss this literature in more detail in Doepke and Zilibotti (2008).

on developing countries (as pointed out by the existing literature), imposing these could still be worthwhile if they succeed in triggering further political reforms in the developing countries. From this perspective, a key question is whether trade sanctions strengthen or, to the contrary, reduce the internal constituency for the introduction and enforcement of laws against child labor. In particular, do poor workers turn more or less favorable to a ban on child labor once sanctions are in place?

In the following analysis, we demonstrate that trade sanctions and international labor standards may well reduce domestic support for child-labor regulation. The intuition for this finding is based on the results in Doepke and Zilibotti (2005), where we show that a worker's political preferences regarding child-labor regulations depend on two factors: whether the worker competes with children in the labor market (i.e., whether his labor supply is a complement to or a substitute for child labor), and whether the worker's own children are working. The group that stands to gain most from introducing child-labor restrictions consists of workers who compete with children in the labor market, but whose own children are not working. Such workers can raise their own wages by restricting other people's children from working, without incurring an income loss themselves.

Trade sanctions erode the constituency favoring child-labor restrictions if they displace working children from an export sector where children compete with unskilled adults, to a domestic sector where adult and child labor are complementary (as in family-based agriculture). By reducing competition between children and adult workers, international sanctions undermine the main motive that leads workers to support child-labor restrictions. In addition, trade sanctions can lower the return to education, implying that fewer workers will send their children to school. Once again, this effect shrinks the size of the constituency that supports child-labor restrictions. Thus, trade policies aimed at reducing child labor may achieve the opposite of the intended effect and may help perpetuate the child-labor problem.

In the following sections, we develop this argument using a simplified version of the model in Doepke and Zilibotti (2008). In that paper, we provide an expanded analysis of political transitions and explore the robustness of the findings in more general environments.

2 Model Economy

The model is a two-sector extension of Doepke and Zilibotti (2005) with an export sector E and a domestic sector D . The economy is populated by overlapping generations of two-period lived agents. In the first period of their lives, agents are children, and in the second period they are adult workers who can be either

skilled or unskilled. Every adult has one child.² Children may either work or go to school. Children in school supply no labor, and there is a schooling cost, p that varies across parents. The cost p is i.i.d. across agents of the same skill group and over time, and is drawn from a uniform distribution with support $[p_l^U, p_h^U]$ for unskilled parents and $[p_l^S, p_h^S]$ for skilled parents, where $p_h^S < p_l^U$. The variation in schooling costs may reflect differences in skill transmission within the family, differences in access to education, and psychological differences in the intrinsic valuation of education (we do not restrict p to be positive). The assumption that the cost is lower for skilled families seems natural, as there is more scope for direct skill transmission, and skilled families are more likely to live in cities with easy access to schools and to have a strong appreciation of the intrinsic merit of education. We will maintain the assumption that p_h^S is sufficiently low that all skilled parents always choose to educate their children.

When they become adult, children who did not go to school become skilled with probability π_0 , whereas children who went to school become skilled with probability $\pi_1 > \pi_0$. The education choice is made by parents at the beginning of the period before knowing which labor regulation prevails in the current period. We denote the education choice by $e \in \{0, 1\}$, where $e = 1$ corresponds to school and $e = 0$ to child labor. Adults are altruistic towards their children, in the sense that the children's future (adult) utility enters the parent's utility function. More precisely, V_{hp} denotes the utility of an adult skill $h \in \{S, U\}$ with an educational cost p . Preferences are defined over consumption c and the discounted expected utility of the children. The utility of an agent with cost p and skill h is then given by

$$V_{hp} = \max_{e \in \{0,1\}} \left\{ c + z \left(\pi_e E_p V'_{Sp} + (1 - \pi_e) E_p V'_{Up} \right) \right\},$$

where the maximization is subject to the budget constraint

$$c + pe \leq w_h + (1 - e) w_C.$$

Here, w_h is the wage for skill level h , w_C is the wage for working children, e denotes the education decision, and $z \in (0, 1)$ is the altruism factor. The budget constraint has consumption and, if $e = 1$, the schooling cost on the expenditure side. The revenue side is made up of the wage income of the adult plus, if $e = 0$, the child-labor income.

The production side consists of two sectors. The output of the domestic sector D is consumed locally, whereas the output of the export sector E is exported and exchanged one-for-one with an import good I . Goods D and I are perfect

²In Doepke and Zilibotti (2005), fertility decisions are endogenous. Here, for simplicity, we assume a constant population.

substitutes in consumption, $Y = Y^D + Y^I$.

The domestic sector D uses unskilled adult labor N_U^D and child labor N_C^D :

$$Y^D = A^D (N_U^D + \lambda^D N_C^D),$$

where λ^D is the efficiency of children relative to unskilled adults in this sector. Notice that adult and child labor are perfect substitutes in this sector.³

The export sector E uses skilled adult labor N_S^E , unskilled adult labor N_U^E , and child labor N_C^E :

$$Y^E = A^E (N_S^E)^\alpha (N_U^E + \lambda^E N_C^E)^{1-\alpha},$$

where λ^E is the efficiency of children relative to unskilled adults in this sector.

Since the E good needs to be exported, international labor standards (IS) can affect the use of child labor in this sector. We assume that in the absence of political restrictions, the relative productivity of children is the same in both sectors, $\lambda^E = \lambda^D = \lambda > 0$. However, the foreign countries can impose international labor standards that rule out the use of child labor in the E sector, which amounts to setting $\lambda^E = 0$. We will now examine how imposing such a standard affects economic outcomes as well as political incentives for introducing further restrictions on child labor.⁴

3 Labor Standards and the Political Economy of Child Labor

The economy can be in one of three policy regimes: laissez faire (LF), where child labor is legal in both sectors; international labor standards (IS), where child labor is legal only in the domestic sector; and a child-labor ban (B), where child labor is outlawed in both sectors. We first work out the economic ramifications of the different political regimes, and then turn to political-economy implications.⁵

³In Doepke and Zilibotti (2008), we consider a similar model where an additional factor enters (land), and there is competition between children and adults.

⁴In principle, it would be possible to construct policies that also affect the use of child labor in the domestic sector, for example by refusing to buy export goods from a country where the child-labor rate in any sector is above a certain threshold. We discuss this possibility in Doepke and Zilibotti (2008).

⁵We focus on a positive rather than normative analysis. In our simplified framework LF is in fact Pareto optimal, but this hinges on the absence of frictions such as financial market imperfections, human-capital externalities, and imperfect altruism. See Doepke and Krueger (2006) for a discussion of child-labor policies from a welfare perspective.

3.1 Wage Effects of Child-Labor Policies

In a laissez-faire (LF) equilibrium, labor supply adjusts to equate the return to unskilled labor between the two sectors:

$$A^D \leq (1 - \alpha)A^E \left(\frac{N_S^{LF}}{N_U^{E,LF} + \lambda N_C^{E,LF}} \right)^\alpha. \quad (1)$$

We focus on parameters ensuring that both sectors operate in equilibrium, so that (1) holds with equality. Then, the equilibrium unskilled, skilled, and child wages are given by:

$$w_U^{LF} = A^D, \quad w_C^{LF} = \lambda A^D, \quad w_S^{LF} = A^E \alpha \left(\frac{A^E (1 - \alpha)}{A^D} \right)^{\frac{1-\alpha}{\alpha}}. \quad (2)$$

Note that all wages depend only on parameters, and not on the skill ratio. The reason is that the linear technology pins down the skill ratio in the export sector, and this in turn determines the skilled wage. To focus on a case in which trade sanctions have an effect, we assume parameters to be such that $N_U^{E,LF} + \lambda N_C^{E,LF} > N_U^{LF}$, i.e., the laissez-faire equilibrium has all adults and some of the working children employed in the export sector.

Next, we study how wages change when policy constraints are imposed. Under international labor standards (IS), the international community refuses to buy goods produced using children. Thus, children cannot be used in the export sector, which amounts to setting $\lambda^E = 0$. Under a child-labor ban (which can be imposed only domestically), the use of children is forbidden in both sectors, implying $\lambda^E = \lambda^D = 0$.

In an equilibrium with IS, all adults strictly prefer to continue working in the export sector, while working children are shifted to the domestic sector, where they earn the same wage as under LF, i.e., $w_C^{IS} = \lambda A^D$. The shift of child labor to the domestic sector increases the scarcity of unskilled labor in the export sector, which raises the adult unskilled wage and lowers the skilled wage. The equilibrium adult wages under IS are given by:

$$w_U^{IS} = A^E (1 - \alpha) \left(\frac{N_S^{IS}}{N_U^{IS}} \right)^\alpha > w_U^{LF}, \quad w_S^{IS} = A^E \alpha \left(\frac{N_U^{IS}}{N_S^{IS}} \right)^{1-\alpha} < w_S^{LF}. \quad (3)$$

Notice that the household income of all unskilled families increases after the introduction of IS (at least initially). This increase reflects the main motive identified by Doepke and Zilibotti (2005) as a source of political support for child-labor restrictions: by removing children from the labor market, unskilled workers can

increase their own labor earnings.

A child-labor ban has the same effect as IS on adult wages ($w_U^B = w_U^{IS}$ and $w_S^B = w_S^{IS}$), because all adults still prefer working in the export sector. However, children can no longer earn an income ($w_C^B = 0$). Thus, relative to LF, the ban increases the household income of unskilled workers whose children go to school, but decreases the household income of unskilled workers whose children do not go to school. In contrast, relative to IS the ban lowers the household income of unskilled workers with working children, while the income of those with children in school stays the same. Thus, if IS are already in place, imposing further restrictions (i.e., B) on child labor no longer increases anyone's household income, at least in the short run. Intuitively, the imposition of IS fully anticipates the potential wage gains due to B.

This finding is the main reason why in our model the imposition of IS can lower political support for further child-labor regulation. However, for a full analysis of political preferences, the dynamic implications of the policies also have to be taken into account, as we consider below.

3.2 Dynamic Effects of Child Labor Policies

To analyze the impact of child-labor policies on educational incentives and the skill-distribution of the population, we now solve the dynamic model. Recall that given our assumptions, all skilled workers educate their children. The optimal education choice of unskilled workers has a threshold property: unskilled workers with $p < \hat{p}$ educate their children, while those with $p \geq \hat{p}$ do not (and make their children work instead). The steady-state utilities of skilled and unskilled workers can be written as:

$$V_{Up} = \max \{W_{Up}^{e=1}, W_{Up}^{e=0}\}, \quad V_{Sp} = w_S - p + z (\pi_1 E_p V_{Sp} + (1 - \pi_1) E_p V_{Up}),$$

where:

$$\begin{aligned} W_{Up}^{e=1} &= w_U - p + z (\pi_1 E_p V_{Sp} + (1 - \pi_1) E_p V_{Up}), \\ W_{Up}^{e=0} &= w_U + w_C + z (\pi_0 E_p V_{Sp} + (1 - \pi_0) E_p V_{Up}), \\ E_p V_{Up} &= \frac{p_h^U - \hat{p}}{p_h^U - p_l^U} W_{Up}^{e=0} + \frac{\hat{p} - p_l^U}{p_h^U - p_l^U} W_{Up}^{e=1}. \end{aligned}$$

V_{Up} is the maximum of the value of educating and not educating one's child for a given schooling cost p . $E_p V_{Up}$ is the expected utility of an unskilled worker before the schooling cost p is known.⁶ The threshold \hat{p} is identified by the condition

⁶A complete analytical characterization of the steady-state equilibrium as well as the formal derivations of the results summarized here are provided in Doepke and Zilibotti (2008).

$W_{U\hat{p}}^{e=0} = W_{U\hat{p}}^{e=1}$, leading to

$$\hat{p} + w_C = z (\pi_1 - \pi_0) (E_p V_{Sp} - E_p V_{Up}), \quad (4)$$

where the left-hand side is the opportunity cost of education for a worker with education cost \hat{p} (consisting of the direct cost and forgone child-labor income) and the right-hand side is the expected return on education. We assume parameters to be such that $\hat{p} \in (p_l^U, p_h^U)$.

We can use equation (4) to analyze the impact of child-labor policies on the incentives for education. Relative to LF, the imposition of IS lowers the fraction of unskilled workers who educate their children: $\hat{p}^{IS} < \hat{p}^{LF}$. While IS do not affect w_C (which enters the opportunity cost of education), they reduce $E_p V_{Sp} - E_p V_{Up}$ by decreasing the skill premium. The falling premium weakens the incentive to educate one's children.⁷

The effect of a child-labor ban on education is ambiguous, since on the one hand B reduces the return to education by lowering $E_p V_{Sp} - E_p V_{Up}$ (similarly to IS), but on the other hand B also lowers the opportunity cost of education by setting $w_C = 0$. If z is not too large (and/or if the cost of schooling is not too large), the effect of the loss of child-labor income on the opportunity cost of education prevails, and a ban increases investments in education.

The dynamics of the skill composition of the labor force is governed by the following law of motion:

$$N_{S,t+1} = \pi_1 \left(N_{S,t} + \frac{\hat{p} - p_l^U}{p_h^U - p_l^U} (N - N_{S,t}) \right),$$

where, recall, $N_{S,t} + N_{U,t} = N$. In steady state, we have:

$$\frac{N_S}{N} = \pi_1 \frac{\hat{p} - p_l^U}{p_h^U - p_l^U} \left(1 - \pi_1 \frac{p_h^U - \hat{p}}{p_h^U - p_l^U} \right)^{-1}.$$

The share of skilled workers increases in π_1 and decreases in \hat{p} . Since (for z not too large) we have $\hat{p}^B > \hat{p}^{LF} > \hat{p}^{IS}$, we find that B increases and IS decreases the ratio of skilled to unskilled workers relative to LF.

⁷This clear-cut result depends on the linear technology of the domestic sector. In Doepke and Zilibotti (2008), we extend the analysis to the case of decreasing returns to labor in the domestic sector. There, child-labor earnings fall after the introduction of IS, inducing an offsetting mechanism (lower w_C increases the incentives to educate children). Moreover, the result hinges on the lack of credit constraints. If unskilled workers were credit constrained, an increase in the unskilled wage might improve their ability to pay for their children's education.

3.3 Labor Standards and the Political Support for a Child-Labor Ban

We now move to political incentives, and study how the constituency for the introduction of a ban on child labor is affected by the external imposition of IS. Recall that, within each period, parents decide whether to send their children to school before policy regulation is implemented. For example, if a ban on child labor is introduced unexpectedly in period t , parents who had decided not to educate their children cannot change their minds: their children will not get an education and will remain idle. This timing assumption allows us to keep the model in the framework of a two-period OLG model while emphasizing that education decisions have irreversible elements. For instance, a child that has been kept at work and out of school until age 12 would likely confront a number of developmental and educational difficulties if it entered school at that age.⁸

We consider the political incentives regarding two possible policy transitions: (i) from the LF steady state to a child-labor ban B, and (ii) from the IS steady state to B. In each case, we want to know which groups would support a ban.

When a child-labor ban is proposed in an economy that is in the LF steady state, skilled workers tend to oppose the ban, as it would reduce the current skilled wage. In addition, a ban would induce more unskilled workers to educate their children, thereby shrinking the future skill premium.⁹ Unskilled workers who educate their children tend to support the ban, as it would increase their current wage, and these workers do not rely on child-labor income. Unskilled workers who do not educate their children oppose the ban: although their own wage increases, this is more than offset by the loss of child-labor income.¹⁰

If, in contrast, a child-labor ban is proposed in an economy where IS are already in place, the current income of skilled workers would not be affected by a ban. However, in most cases the imposition of B would still hurt skilled workers through the general equilibrium effect on future wages. Thus, skilled workers tend to oppose the ban, but less vigorously than if the initial condition were LF.

Crucially, unskilled workers who educate their children no longer have any reason to support the imposition of B either, since the ban leaves the adult unskilled wage initially unchanged. Moreover, B lowers the future skill premium

⁸In Doepke and Zilibotti (1995), we present a more general model where agents live for several periods and where education and fertility decisions are sunk at a particular time in the life cycle. Here, our timing assumption allows us to capture the same idea in the context of a simpler model.

⁹It is hard to establish in general the sign of this second effect on political incentives. In most cases, it reinforces the skilled workers' opposition to the ban, as skilled workers always educate their children. One can establish formally that skilled workers oppose the ban as long as z is sufficiently small. Numerical results illustrate the general case below.

¹⁰Once again, the results regarding the political incentives of unskilled workers can be proved formally for sufficiently small z . Generally, the political economy of the transition from LF to B is similar to Doepke and Zilibotti (2005), although here we ignore fertility decisions.

through the general-equilibrium effect on wages. Since these workers educate their children, the lower future skill premium makes them oppose the ban. Finally, unskilled workers with working children continue to oppose B, because of its negative effect on their household income.

In summary, the short-run effects of imposing a child-labor ban once IS are already in place do not generate any support for the ban, since they cause a loss of child-labor income for families with working children without any other effect on current wages. In addition, recall that $\hat{p}^{IS} < p^{LF}$, implying that the share of unskilled workers who do not educate their children is larger under IS. Since this is the group most opposed to a child-labor ban, the constituency against the ban will be even stronger. Both effects imply that the imposition of IS will lower domestic political support for B, undermining the prospects for eliminating child labor in the long run.

3.4 A Numerical Example

The theoretical analysis shows that imposing international labor standards tends to lower the domestic support for a ban. To illustrate the effects, we construct a numerical example. We use the following parameter values: $A^E = 2.9$, $A^D = 1$, $\alpha = 0.4$, $\lambda = 0.25$, $\pi_1 = 0.3$, $\pi_0 = 0$, $z = 0.53$, $p_l^U = 0.01$, $p_h^U = 0.02$, $p_S^h = 0$, $p_S^l = -0.01$, $N = 1$. Under these parameters, in the LF steady state we have $\hat{p}^{LF} = 0.017$, implying that two-thirds of the unskilled parents educate their children. Moreover, these parents form a 52% majority among the adult workers, including the skilled ($N_S^{LF} = 0.22$ and $N_U^{LF} = 0.78$). In contrast, in the IS steady state we have $\hat{p}^{IS} = 0.016$, and the unskilled parents who educate their children no longer form a majority ($N_S^{IS} = 0.20$ and $N_U^{IS} = 0.80$).

	Transition from LF to B			Transition from IS to B		
	Old SS	Transition	New SS	Old SS	Transition	New SS
w_S	2.663	2.461	1.929	2.659	2.659	1.929
w_U	1	1.054	1.24	1.001	1.001	1.24
w_C	0.25	0	0	0.25	0	0

Table 1: Wages during Transition Path after Introduction of Child-Labor Ban

Table 1 displays the wages under the two steady states (LF and IS) and during the transitions to B. Consider, first, the transition from LF to a child-labor ban. Suppose that the ban is imposed at $t = 0$. In this period, children are withdrawn from the labor force. As a consequence of the reduction of the unskilled labor input in the export sector, the adult unskilled wage increases by 5% and the skilled wage falls by 7.5%. In period $t = 1$ the wages are as in $t = 0$, because the ban was introduced after education decisions were taken at $t = 0$. However,

education decisions change at $t = 1$. Thus, from $t = 2$ onwards the economy is in a new steady state, where unskilled wages are 24% higher than in the LF steady state, and skilled wages are 27% lower. At $t = 0$, the lifetime utilities of skilled workers and unskilled workers with working children decline if B is imposed. In contrast, the lifetime utility of unskilled workers without working children (who are, recall, the majority of the population) increases. Thus, if LF is the initial condition, there is a pivotal constituency in favor of the ban.

Consider, next, the transition from IS to B. During the transition (i.e., both at $t = 0$ and $t = 1$) the adult unskilled wage and the skilled wage remain unchanged. Education decisions change at $t = 1$, and from $t = 2$ onwards the economy is in the new steady state. Here, unskilled wages are 24% higher than in the IS steady state, and the skilled wages are 27% lower. Starting from the IS steady state, all adult workers are opposed to the imposition of a child-labor ban at $t = 0$. Thus, the imposition of IS eliminates the constituency that otherwise would have supported the ban B.

Note that the differences in political incentives are not driven by the long-run effect of the ban (long-run changes in wages are about the same in the two cases). Instead, what matters is wage changes during the transition. In the transition from LF to a ban, the adult unskilled wage increases already in period zero. This tilts the preferences of the unskilled workers without working children in favor of the policy. In contrast, wages do not change until period $t = 2$ when IS are already in place at $t = 0$. Thus, the only effect on the lifetime utility of the unskilled workers without working children at $t = 0$ arises from the future reduction in the skill premium and the loss of future child-labor income.

4 Conclusions

The theoretical analysis in this paper suggests that actions such as consumer boycotts, trade sanctions, or the imposition of international labor standards may undermine the prospects for further child-labor reform in developing countries. These results partially rely on the assumption that children do not compete with adult unskilled workers in the domestic sector (i.e., the D technology is linear in adult and child labor). However, in Doepke and Zilibotti (2008), we show that much of the basic intuition derived here applies also in the more general case in which there is competition between child and adult workers in both sectors.

In such an environment, the skill premium varies smoothly in each political regime with the relative supply of skilled and unskilled labor. When a ban is introduced in the model of Doepke and Zilibotti (2008), the unskilled adult wage always increases and the skilled wage decreases. The size of the wage shift depends on whether the initial condition is LF or IS. In particular, the effect is smaller under IS, as the imposition of IS already achieves some of the effects that

would be caused by a ban. From a political-economy perspective, the rise in unskilled wages implies that unskilled workers who educate their children benefit economically from the ban even though IS are already in place. Yet, since the size of the wage shifts depends on the initial regime, the incentive for these workers to support a ban is weaker under IS than under LF, and may be fully offset by the long-run implications of the ban. In addition, IS tend to lower the fraction of unskilled workers who educate their children, which shrinks the constituency that is at least potentially in favor of banning child labor. Therefore, we still find that the imposition of international labor standards may weaken domestic support for a ban, thereby contributing to the persistence of the child-labor problem.

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