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Policy Dilemmas for Controlling Child Labor

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1. The Dimensions of the Problem

Starting from the early nineteenth century, when Britain began experimenting with policies to control child labor, we have learned a lot about policy interventions for controlling child labor. At the same time, the fact that child labor continues to be a major problem suggests that we may not have learned enough. The purpose of this essay is to show that this is one area where seemingly reasonable policy interventions can easily backfire. While the general possibility of pathological reaction to policy intervention will be discussed briefly, my aim here is to discuss one particular pathology in some detail because this is a problem that seems not to have been discussed in the literature and also because it provides a generic illustration of the hazard of using standard instruments for curbing child labor.

Thanks to improved data collection we now have a fair idea of the nature and extent of child labor in the world. According to data recently released by the ILO (2002), in the year 2000, there were 211 million children below the age of 15 years who were 'economically active'. Of these 73 million were below the age of 10; and the number goes up to 352 million if we consider children up to the age of 17 years. The ILO distinguishes 'child labor' from 'economically active children', by asserting that a child above the age of 12 who does light, part-time work that is not hazardous may be economically active but is not to be counted as a child laborer. By making this adjustment, and treating a child as someone below the age of 15, we find that in the year 2000 there were 186 million child laborers the world over.

Evidently, the problem is large. And there are researchers who claim that it is larger than what the ILO statistics suggest. For one, the ILO finds that boys are more likely to be laborers than girls. This is quite consistent with official data from around the world and from 19th century Britain, but in the few cases when data is collected with special attention given to include domestic work, as was done in India (see Cigno and Rosati, 2000), it turns out that girls do more work than boys. Hence, it is arguable that the

amount of girls work estimated by the ILO falls short of the true figure. Then there is the problem of ‘intermittent employment’. Analysts have for long suspected, and now we have formal statistics from Brazil showing that children are much more prone to being in and out of work than adults (Levison, Hoek, Lam and Duryea, 2002). Hence, if we try to find out how many children are working by simply tracking their work status during the previous week, as the ILO did, we get an underestimate of the *number* of children who do some work. Admittedly, this does not mean an underestimate of the *amount of work* done by children. But no matter which indicator one uses to describe the magnitude of labor performed by children, it must, by now, be amply clear that the phenomenon of child labor presents us with a staggeringly large policy problem.¹

2. The Policy Problem

In crafting policy in the domain of child labor, one has, first of all, to be careful to guard against what is best described as the ‘fallacy of single-mindedness’. While for a child to have to work is undoubtedly bad, it is easy for us to forget that worse things can happen to a child than having to work. Hunger, serious illness, malnutrition, abandonment by family and prostitution are all states of being or activities from which a child would readily switch to regular labor. Thus, when we try to eliminate child labor, we must be careful so as not to achieve this by driving children to these worse alternatives. Policy-makers and even academics at times make the mistake of being so single-minded in their aim to control child labor that they do not mind if this is achieved by reducing the welfare of the children.

Basu and Van (1998) had warned against this risk and shown that while there may indeed be occasions when a legal ban on child labor is called for, this is not always the case. In most people’s mind, an economist’s argument that we must not use legislative intervention somehow gets translated into the prescription that we must not use intervention. But that is a fallacy. There are economists and historians who have argued that child labor ought not to (and some believe it cannot) be removed by direct state

¹ In Basu (1999), I have discussed how the magnitude of child labor in today’s world compares with the situation in 19th century Britain.

intervention and that we will have to wait instead for the benefits of growth to trickle down and eventually eliminate child labor (e.g. Nardinelli, 1990). But to resist legal intervention (as I would in certain contexts) is not the same as resisting intervention. Indeed I would argue that the state has a great responsibility to improve the quality of schooling, give incentives such as school meals and improve adult labor market conditions, all of which are known to have a negative impact on the incidence of child labor (see, for instance, Ravallion and Wodon, 2000; Bourguignon, Ferreira and Leite, 2003; Grootaert and Patrinos, 1998). When child labor is removed via interventions of this kind, we can generally be sure that this happens while enhancing the welfare of the child. Legal interventions, on the other hand, even when they are properly enforced so that they do diminish child *labor*, may or may not increase child *welfare*. This is one of the most important lessons that modern economics has taught us and is something that often eludes the policy maker.

The reason why child labor policy turns out to be intricate is because of the somewhat unusual factors that cause child labor in the first place. Child labor is intricately linked to poverty. Of the 186 million child laborers in the world virtually all are located in poor countries. In the same developing country, where lots of children work, one would rarely find the child of a doctor, lawyer, professor or any middle class person working. The evidence is overwhelming that poverty is a major cause of child labor (see, for instance, Edmonds, 2001)².

When this is true, policies can have counter-intuitive effects (see, for instance, Basu, 2000, Jafarey and Lahiri, 2002; Singh, 2002). The policy with which I shall here illustrate the risk of pathological reaction is one where a firm is fined a certain amount if it is found to be employing children. India's **Child Labor (Prohibition and Regulation) Act, 1986**, has such a clause. Section 14 of this Act requires the government to charge a fine between Rs. 10,000 and Rs. 20,000 of a person or firm found employing children in contravention of the provisions of the Act (see Government of India, 1986).

² It must be clarified that to say that poverty causes child labor is not to deny that child labor can have other causes, such as greater opportunity for child work, lack of schooling opportunity, parental illiteracy (see, for instance, Emerson and Souza, 2002; Bhalotra and Heady, 2003), just as a fire being caused by the carelessly discarded cigarette stub does not preclude the spilled kerosene on the floor from being a cause.

At first sight it appears that such a policy must cause child labor to decrease since firms will now be reluctant to employ children. However, it will be shown in this paper that in certain situations exactly the opposite is true. Imposing a fine for using child labor or raising an already-existing fine can increase the amount of child labor. What is interesting is that this argument carries over to a larger range of policies. This will be obvious as soon as the intuition behind the result is spelt out. This is done in the next section where the formal argument behind the intuition is also elaborated upon with the help of a simple diagram.

3. A Note on a Possible Pathology

The reason why imposing a fine on firms for employing children can cause child labor to increase is intimately connected to the fact that poverty is a major cause of child labor. To see the intuition behind this, take the extreme case where a household chooses to send its children to work to escape extreme poverty or starvation³. When child labor is the product of trying to reach a target (such as a subsistence consumption), any policy that makes child labor less effective an instrument in reaching such a target will result in a more intensive use of this instrument. Now if there is a new law whereby firms are fined whenever they are caught using child labor, clearly this will cause the wage rate for child labor to drop. This is because children are now a less attractive input from the point of view of firms. But this in turn will mean children will have to work even harder to be able to earn the target minimum income that they are after.

The full analysis is a bit more complicated. Note that, if the fines are made so big that the firms no longer wish to employ any children, of course, child labor will fall (whether this is desirable from a welfare-consequentialist point of view is another matter). The general result that is established here is that as the fine for using child labor is increased, child labor will first rise and then fall.

The larger policy implications of this result are discussed after I have established it formally. The result that I am about to prove can be derived under fairly general

conditions but, since I wish to prove it without complex algebra, I shall use some strong simplifying assumptions. These assumptions are thus merely for reasons of expositional convenience. The assumptions that are more than mere simplifying ones and are central to my analysis are that (1) children are made to work only so as to achieve a certain target minimum consumption for the household and (2) child and adult labors are substitutes, subject to, possibly, an adult equivalency correction. Even these assumptions I am overstating for simplicity. We know, for instance, that when a relatively poor household comes to own more land (and this may be coincident with becoming a little richer), it tends to make its children work more (Bhalotra and Heady, 2003). This indicates that, while poverty is an important cause of child labor, it is not the sole cause. For instance, the ease with which a child can be employed, which no doubt increases as the household's landownership increases, can influence the incidence of child labor (Basu and Tzannatos, 2003). While it is possible to take these complications on board and still derive the result I am about to derive, I shall here work with the more extreme assumptions as embodied in (1) and (2), to get the main argument across simply.

Consider a labor market in which there are several households with each household consisting of one adult and several children. In the labor market adults and children are perfect substitutes. We could assume that a child can only do a fraction of what an adult does, but this complication would leave the results that this paper is focusing on unchanged and so is unnecessary. I shall assume that the adult always supplies labor perfectly inelastically, whereas children work only to the extent that this is necessary to achieve a subsistence level of consumption for the household. Let s be the amount of consumption that the household needs to subsist.

From these assumptions it immediately follows that children will work only when adult wage is below s . Let w be the adult wage. If w exceeds s , subsistence consumption is achieved without requiring the children work. Note next that, given the above assumptions, if adult wage is w , the wage rate for a child laborer must also be w , since children and adults are perfect substitutes. If we allowed for the fact that children are less productive than adults child wage would be a fraction of w .

³ The analysis in this paper is not predicated on households taking the decision concerning child labor. The results go through even if child labor is an autonomous decision of the child, which is empirically not as

Let us now bring government into the picture. Suppose government announces that each time a firm is found employing a child the firm will be fined D rupees. For every child employed by a firm let p be the probability of the firm being caught. In that case for every child employed, the firm has an expected punishment cost of pD . Hence, unless child wage is less than adult wage by pD , it does not make sense for a firm to employ children. It follows that child wage, w' , must now be equal to $w - pD$.

Therefore, child wage always moves in tandem with adult wage. As long as the legal regime remains unchanged (that is, p and d are unchanged), any change in adult wage will always be matched by the same change in child wage. In reality we expect child and adult wages to move in the same direction, since it stands to reason that child labor and adult labor are, by and large, substitutes. The stronger claim being made in this paper, namely, that they move *fully* in tandem, is merely a product of our simplifying assumptions, which in this context are however harmless.

Next note that if w falls short of s , the household will send the children out to work. Let e be the number of children sent out to work. Since households send children to work only so as to be able to reach subsistence, it must be the case that $e(w - pD) = s - w$. Recall that $w - pD$ equals child wage. Hence the term on the left is the total income earned by the children of the household. And this is equal to exactly the gap between subsistence need and adult income.

It follows from this condition that as adult wage drops, the household will send more children to work (that is, as w drops e will rise). Of course, this cannot go on endlessly since after sometime the household will run out of children. Then onwards as w drops there will be no further increase in supply of child labor. These facts can be captured pictorially, as shown in Figure 1 where the vertical axis represents w (adult wage) and the horizontal axis represents labor. If w is above s , then only the adult will work. Hence, the labor supply curve will be vertical as shown by the segment AB. As w drops below s , the children go out to work, chasing the subsistence target. Hence, the backward bending segment BC. As w keeps falling, as just argued, there will be a point beyond which there will be no more labor to supply. This explains the CF segment of the supply curve.

remote as some may have assumed (see Iversen, 2002).

Finally observe that if as w keeps falling $w - pD$ will eventually reach zero, that is, the child wage rate becomes zero. When that happens, making children work does not add to household consumption and so e will then fall back to zero and only the household adult will be working. Hence the supply curve of labor now reverts back to the GH segment. The full labor supply curve of labor is therefore given by ABCFGH. The sharp corners and angularity of the labor supply curve is caused by our simplifying assumptions. With more general assumptions the curve would smoothen out. But the main point is that it will have this basic feature of bulging out and then shrinking back again as the adult wage rate falls.

From the household supply curve to the aggregate supply curve simply entails aggregating horizontally the supply curve just derived. It will of course look the same as this curve, but for a horizontal magnification. We can therefore, without loss of generality, assume that this same curve is the aggregate supply curve of labor. So from now on we shall treat ABCFGH as the aggregate supply curve of labor in this economy.

Many of the peculiarities of the child labor market with which the literature has been concerned, such as the possibility of multiple equilibria (Basu and Van, 1998; Basu, 2002; Swinnerton and Rogers, 1999, Lopez-Calva, 2003) can be easily constructed by using this kind of supply characterization. But that is not the direction I wish to pursue here. To stay away from that, let me consider the case where the demand curve is sufficiently elastic so that there is only one equilibrium. This is illustrated by the demand curve for labor DD and the market equilibrium is given by the point E, where adult wage, w^* , is below subsistence and there is a small incidence of child labor.

My concern here is with policy interventions and to show how there can be an adverse reaction to certain seemingly reasonable interventions. Consider the case where the government starting from the case illustrated in Figure 1 decides to raise the fine for employing children. (We could, also, think of a switch from no fines ($D=0$) to some positive fine.) Let the new fine be D' and, we are assuming that D' exceeds D . The effect of this on the supply curve of labor is easy to work out. It is obvious that the segment BC will move up, to BC' , as shown. To understand this suppose adult wage is fixed at w^* . Clearly as the fine for child labor is raised, child wage will drop (otherwise firms will not

employ any children). Hence, each household will be forced to supply more children to the labor market in order to reach the subsistence target s .

Keeping in mind that e cannot exceed the total available child labor and e will be zero if w is less than pD' , it is evident that the new supply curve of labor is given by $ABC'F'G'H$ in Figure 1.

The important property to notice is that for some wage levels, namely, between s and pD' , the higher penalty for child labor increases the supply of child labor. And this leads to the pathological reaction that I discussed earlier, to wit, that child labor will increase as a consequence of a higher penalty for employing children: Observe that the new equilibrium is at E' , where adult wage (and, therefore, child wage) is lower and child labor is higher.

To trace the full range of possibilities, continue to raise D . Clearly child labor will rise, and then fall, eventually reaching zero. If, for instance, D is so high that pD exceeds, s , then, as is obvious from Figure 1, the supply curve of labor becomes a vertical line through point N and so child labor must be zero in equilibrium. To sum up, a small punishment for child labor may have quite the opposite effect of a large punishment.

It is worth emphasizing once again that I have here not evaluated policy from the point of view of child *welfare* but simply by studying its effect on the *incidence* of child labor. And, as I have cautioned above and elsewhere in my writings, a decline in child labor need not always coincide with a rise in child welfare.

Before moving on, I must attend to one seeming difficulty with the above analysis. Since, as we have just shown, in some cases the child labor problem is made worse by the imposition of a fine for employing children, it seems natural to wonder if it would not be the case that the problem of child labor can be mitigated by subsidizing firms for employing children. The answer is no. A subsidy does not work like the reverse of a tax or a penalty. So it would clearly be wrong policy to reward firms for employing children.

To see this we must understand something that was handled in the previous section by not explicitly talking about it. Suppose that a firm decides to use C units of child labor. Clearly it can do this by employing different numbers of children. It can, for

instance, employ $2C$ children with each child doing half-time work or C children with each child working full time and so on.

In most models of economics, it does not matter how the total is broken up, and it is implicitly assumed that firms make each worker do full time work so that for C units of labor it uses C laborers. In the above model, with a penalty for every child that is found working in the firm, a firm will have a clear preference for employing as few children as possible, since each child brings with him or her a possible penalty. So if the firm decides to have C units of child labor and gets this from n children, then the cost, child wage bill plus expected penalty, is given by $w'C + npD$. Clearly it will try to make n as small as possible; hence n will be C .

The trouble with a subsidy for employing children is that this implicit assumption (which is valid when there is a *fine* associated with child labor) in the above model, breaks down. In the presence of a *subsidy* for each child employed it will be in the interest of the firms to get the same volume of labor from many children and take these children to the local government office as proof of child labor and collect the subsidy. In other words, to announce a subsidy would cause a fiscal crisis with firms making notional use of child labor and collecting money.

4. Concluding Remarks

There has been a lot of discussion in the literature on what should be the right agency for controlling child labor. Should it be the national government or should it be some global body, such as the WTO or the ILO? Or should it be ordinary consumers, who discourage child labor by boycotting products made with child labor? There are indeed lots of complex issues involved in answering these questions, many mired in intricate matters of political economy and international law (see, for instance, Fung, O'Rourke and Sabel, 2001). Economists, like Bhagwati (1995), have rightly worried about empowering agencies such as the WTO, to which poor countries have inadequate access and which can quickly be converted to an instrument of Northern protectionism. Likewise, I have hesitation in turning this matter over to consumers in industrialized nations to exercise control through product boycotts, since this can also be an instrument

of protection and because we know—and Arthur Miller has immortalized this in drama—how witch-hunts can come easily to the laity with a little egging on by interested lobbies (Basu, 2001).

But even apart from these larger questions of political economy, we need to contend with narrow economics questions concerning the kinds of instruments (whoever implements them) that ought to be used. Should we try to control child labor by offering free meals to children who go to school instead or should we control child labor by creating better schools?⁴ Should we attempt to curb it by punishing the employers who employ children or parents who allow their children to be employed? And if we decide to do either, how much should the punishment be? Policy-makers, governments and international organizations often leave these matters at the level of sweeping exhortations to act. What this paper has tried to show with a simple example is that such exhortations, without closer commentary on exactly *how* we should act, may not be of much value and can even be counter-productive.

The formal exercise in this paper is undertaken not merely for its innate analytical interest but because it illustrates a general problem concerning policy for eradicating child labor. It shows that the design of good policy depends crucially on our understanding of what causes child labor. It depends, for instance, on whether child labor is caused by the simple urge to maximize consumption or the more limited, target-oriented objective of trying to reach a subsistence income or minimal income that enables the child and the household to escape extreme poverty. If the latter is true, which, I believe, is often the case, then seemingly reasonable policies can have pathological reactions, exacerbating the problem of child labor. The paper is written in the hope that awareness of this problem will help us design better policies to put an end to this urgent problem of our times.

⁴ This is exactly the dilemma addressed by Jafarey and Lahiri (2002).

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Figure 1

