What Happened to Child Labor in Indonesia during the Economic Crisis? The Trade-off between School and Work

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Abstract

The recent economic crisis has halted the declining trend in the incidence of child labor in Indonesia, which has been observed since the early 1970s. Confirming findings from other countries, this study concludes that there is a strong link between child labor and poverty. The profile of child labor largely mirrors the profile of poverty. Moreover, poverty is found to be an important determinant of child labor. However, child labor is not entirely a subset of poverty, as some dimensions of child labor are not related to poverty. This study has found that working does not completely eliminate a child’s opportunity to obtain a formal school education, as only one half of working children are not enrolled at school. Children from poor households can still go to school by undertaking part-time work to pay for their education. This implies that unless necessary measures are taken, prohibiting these children from working may instead force them to drop out of school.

* We are grateful to Statistics Indonesia (BPS) and UNICEF for providing access to the data. We thank Wenefrida Widyanti for research assistance and Rachael Diprose for editing the manuscript.
I. INTRODUCTION

Child labor is a troubling phenomenon and a serious problem in developing countries. According to the International Labour Organization (ILO), around 211 million children aged 5 to 14 years are active in labor markets all over the world. Around 119 million children or 56 percent of these working children are involved in the worst forms of child labor, comprising hazardous work and the unconditional worst forms of child labor. Among the latter, over eight million children are ‘trapped’ in slavery, prostitution, pornography, and illicit activities such as selling drugs (ILO, 2002).\(^1\)

The issue of child labor has regained attention in Indonesia during the recent economic crisis, which started in mid 1997. During the peak of the crisis in 1998, the Indonesian economy contracted by an unprecedented magnitude of more than 13 percent. This is a sharp turn around from the high economic growth averaging around seven percent annually over the previous three decades. As Indonesian households were forced to adjust to the substantial fall in real income, it was feared that parents would be forced to withdraw their children from schools and send them to work to supplement family income.

The evidence emerging so far has indicated that this has not happened. There was no evidence of a widespread increase in the child labor phenomenon. During the first year of the crisis, the proportion of children aged 10-14 years who worked increased slightly from around 7% in 1997 to around 8% in 1998. However, by 1999 the rate has fallen back to around 7%. Confirming this, school enrollment rates were relatively steady during the crisis and even increased slightly afterwards. Nevertheless, the crisis has halted the declining trend in the incidence of child labor in Indonesia, which has been observed since the early 1970s.\(^2\)

In general, child labor is defined as the regular participation of school-aged children in the labor market, either to earn a living for themselves or to supplement household income. Children who are involved in housekeeping activities and perform household chores - such as cleaning, cooking, or washing that may be conducted after school hours or in holidays - are not considered to be child labor because their activities are not strictly intended to generate income.\(^3\)

Recent studies on child labor have focused on the economic question of whether child labor is ‘efficient’ or not. The choice for parents is whether to send their children to school or to work. By sending children to school, they lose current income but gain through higher future income. On the other hand, if parents send

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\(^1\) Due to various conceptual, measurement, and data problems, these numbers should be taken as indicative only.


\(^3\) See Basu (1999) and Canagarajah and Coulombe (1997) for various definitions of child labor.
their children to work they gain in current income but, by hampering the human capital development of children achieved through education, they suffer with lower future income. Some conditions may force parents to demand too much labor from children, so that child labor becomes inefficient. Examples of such conditions include: when the private returns to education are lower than the social returns; or when the capital market is imperfect, meaning parents cannot borrow funds to either finance their children’s education or smooth consumption.4

Many empirical studies on child labor have discerned a strong relationship between child labor and poverty. Therefore, poverty is viewed as the main determinant of child labor.5 Furthermore, the ILO argues that child labor perpetuates poverty.6 This is because child labor interferes with the human capital development of children by either forcing children to drop out of schools or making learning process in schools ineffective.7 This has led some studies to examine the relationship between the child labor phenomenon and participation rate of children in schools. In general, the findings of these studies confirm that child labor has a negative impact on the level of school participation.8

Yet, other studies have found that, in some areas, both working and attending school are actually compatible. Studies conducted by the Delhi School of Economics and the Indian Social Institute demonstrate that child labor in rural areas is often ‘light’, so that children are able to obtain an education without seriously affecting their work commitments, that is if they have access to proper schools.9 In this case, education and work go together, so that there are positive effects from the child labor phenomenon. Child labor can assist poor families to fulfill their needs without sacrificing the children’s future. In fact, some children may not be able to go to school without working.

This study examines the trade-off between work and school for children, drawing from the experience of Indonesia during the recent economic crisis. The following parts of this paper are organized as follows: Chapter two, based on literature review, discusses the relationship between poverty and child labor. Chapter three describes the data used in this study. Chapter four explores the incidence, profile, and determinants of child labor in Indonesia. Chapter five analyzes the trade-off between work and school for children. Finally, chapter six provides the conclusion.

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6 The findings from Ravallion and Wodon (1999), however, do not support this hypothesis.
7 See Edmonds and Turk (2002).
8 See Ray (2000).
9 See Basu (1999).
II. CHILD LABOR AND POVERTY: A LITERATURE REVIEW

The reasons for children participating in the labor market are mostly related to economic hardship. Consequently, many children enter the labor market either to support their families in maintaining their consumption levels or to pay for their education. With a light workload, entering the labor market and attending school can be compatible. In Vietnam, for example, for the majority of working children it is possible to both go to school and simultaneously work in the agriculture sector.\(^\text{10}\)

As hours of work increase, work and school become less and less compatible. A working child may still be enrolled in school, but being enrolled in school does not ensure the time is spent in class. Moreover, despite school enrollment, working could reduce the children's energy to study properly. Hence, being in class is only a necessary but not a sufficient condition for learning.\(^\text{11}\) A part from school and work, children are also involved in other activities, which Ravallion and Wodon (1999) group together as 'leisure'. Therefore, in reality there is no one-to-one relationship between school and work.

Based on the results of the Ghana Living Standard Survey, Canagarajah and Coulombe (1997) have found that more than 90% of child labor exists in rural areas. They estimate that in 1987 around 30.5% of children between the age 7-14 years were working. The rate declined to 22.4% in 1988, but increased again to 28% in 1992. The fluctuation in the incidence of child labor corresponded with the trend in agricultural income. Most of the children who were working were involved in household level agricultural activities in family farms and enterprises.

By analyzing the determinants of child labor in conjunction with the decision to send children to school, Canagarajah and Coulombe have also found that in 1992, 66% of the total number of children who were working, were also going to school. Poverty was also found to be negatively correlated with the decision to send children to school. But there is no clear relationship between poverty and the incidence of child labor. It was also observed that there is a significant negative relationship between going to school and working, so that increasing the demand for schooling is believed to be the effective way to reduce child labor. Finally, fathers with very high levels of education are likely to have a negative effect on the probability of their children going into the labor market.

A study in Vietnam conducted by Edmonds and Turk (2002) explores the reasons behind the decline in the incidence of child labor experienced by Vietnam during the 1990s. Similar to the findings in Ghana, children in rural Vietnam are more likely to work than those in urban areas. Child labor participation tends to be mainly in the agricultural sector. However, in contrast to the findings in Ghana

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\(^\text{10}\) See Edmonds and Turk (2002).
\(^\text{11}\) See Edmonds and Turk (2002).
where poverty was observed to have a weak relationship with child labor, in Vietnam the improvement in living standards has enabled children to work less. Children enter to the labor market because their families are too poor to support the family's basic needs without the economic contribution of their children. Not surprisingly, most of the decline in child labor in Vietnam in the 1990s can be explained by the improvement in living standards.

Edmonds and Turk also analyze the effects of a household owning a family business on the tendency for children to work. Contrary to expectations, it was found that children from households not owning family businesses work more than children from households owning family businesses. This may be attributed to the fact that households owning family businesses are relatively more financially endowed than those not owning family businesses. The study also demonstrates that school enrollment rates are generally higher for children who are not employed. In 1993, 88% of children aged 12-13 years who were not working were enrolled at school, but only 71% of children aged 12-13 years who were working attended school that year.

Other useful lessons on child labor are evident in Côte d'Ivoire, which experienced an economic recession in the 1980s. Grootaert (1998) has found that households of all income levels responded to the recession by increasing the labor market participation of male adults. Meanwhile very poor households increased the participation of ‘secondary earners’, that is children and adolescents, in addition to the participation of male adults. The overall labor market participation rate of children increased from 18.5% in 1985 to 19.3% in 1988, while the increase in the participation rate of children from very poor households was much higher from 30.6% in 1985 to 43.9% in 1988 - one of the worst years of the recession. However, the participation rate of children from the not so poor and non-poor households actually fell slightly during the same period.

Although the incidence of child labor is higher in rural than urban areas, Grootaert (1998) has discerned that the labor hours supplied by child labor in urban areas are actually higher than labor hours supplied by child labor in rural areas. In urban areas, 7% of children work full-time for an average of 46 hours per week. Meanwhile, in rural areas, more than one-third of children work full-time for an average 35 hours per week. The share of child labor in total household labor supply for all income levels also increased, showing the widespread impact of the economic recession on child labor in Côte d'Ivoire. Only households from high-income quintile could afford for their children not to enter the labor market, where most of these families lived in urban areas and the access to education is better. In contrast, children who only worked (not attending school) came mostly from the two lowest income-quintiles and from rural areas.
III. DATA

According to Indonesian labor legislation, the minimum age of workers is 15 years old. Hence, in this study, child labor is defined as children aged 5 to 14 years who participate in the labor market. Hitherto, Sakernas (the National Labor Force Survey) is the source of national data on child labor in Indonesia. The survey is conducted annually by Statistics Indonesia (BPS). However, Sakernas only collects data on activities of individuals in the sampled households who are at least 10 years old. Therefore, it cannot capture the phenomenon of child labor for those aged less than 10 years. Consequently, this data underestimates the extent of child labor in Indonesia.

Fortunately, during the crisis in 1998 and 1999, BPS – with support from UNICEF – conducted four rounds of the ‘100 Village Survey’. Each round of this survey collected data from 12,000 households in 100 villages. All of these are located in 10 districts spread across eight Indonesian provinces. When Indonesia was struck by the economic crisis in mid 1997, during the first year, there was a lack of data on the social impact of the crisis. In order to overcome this, the four rounds of the ‘100 Village Survey’ were implemented over 14 months, in August 1998, December 1998, May 1999, and October 1999. This study only utilizes the data collected in the first round of the survey in August 1998 and the last round in October 1999 (hereafter referred to as the 1998 and 1999 data respectively).

One type of data collected in this survey concerned the activities of individuals aged 5 years and older. Hence, this provides a better and more comprehensive picture of child labor in Indonesia in terms of younger aged child labor than that provided by Sakernas. However, the ‘100 Village Survey’ has its own weaknesses. Firstly, while the sample was relatively large, it was not designed to be statistically representative of the country overall. Secondly, the intention of this survey was to focus on rural and relatively poor areas, therefore it is not representative of all social strata within the country.

In light of these weaknesses, it is necessary to test first whether the ‘100 Village Survey’ data can be reliably used as a source of data for analyzing the phenomenon of child labor in Indonesia. Table 1 provides a comparison on the incidence of child labor among children in the age bracket of 10-14 years, as indicated by both Sakernas and the ‘100 Village Survey’ data in 1998 and 1999.

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12 Law No. 20/1999 on The Ratification of ILO Convention No. 138/1973 concerning the Minimum Age for Admission to Employment.

13 This is not the only source of underestimation, as underreporting is thought to be prevalent in child labor data everywhere. See Basu (1999) and Manning (2000).

14 The sample is designed as a panel sample (Widyanti et al., 2001), but this study does not exploit the panel nature of the data.
Table 1. The Incidence of Child Labor Aged 10-14 Years Based on Sakernas and 100 Village Survey Data (%)

<table>
<thead>
<tr>
<th>Location</th>
<th>Sakernas 1998</th>
<th>Sakernas 1999</th>
<th>100 Village Survey 1998</th>
<th>100 Village Survey 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>3.84</td>
<td>3.12</td>
<td>4.83</td>
<td>3.45</td>
</tr>
<tr>
<td>Rural</td>
<td>11.11</td>
<td>9.64</td>
<td>12.48</td>
<td>11.70</td>
</tr>
<tr>
<td>Total</td>
<td>8.24</td>
<td>7.09</td>
<td>10.96</td>
<td>10.04</td>
</tr>
</tbody>
</table>

Table 1 shows that both Sakernas and the ‘100 Village Survey’ produce numerical data which is relatively close and similar pattern of the incidence of child labor. Both data sources indicate that the incidence of child labor in rural areas is roughly three times as higher than that in urban areas. The two data sources also indicate that the incidence of child labor slightly declined between 1998 and 1999. These results indicate that the 100 Village Survey data can be reliably used as a data source for analyzing the phenomenon of child labor in Indonesia.
IV. THE PROFILE AND DETERMINANTS OF CHILD LABOR

Consistent with the slight decline in the incidence of child labor among children aged 10-14 years (see Table 1), the 100 Village Survey data indicates that the incidence of child labor among children aged 5-14 years also slightly declined from approximately 6% in 1998 to approximately 5.4% in 1999. This decline in the incidence of child labor is in line with the stabilization of the general macroeconomic environment after the economic turbulence during the previous year, as well as some improvements in the economic conditions of the sampled households during the same period. To identify the factors that are associated with the child labor phenomenon in Indonesia, the first section of this chapter explores the profile of the child labor. In the second section, a more formal analysis of the determinants of child labor is employed.

A. The Profile of Child Labor

The child labor phenomenon is related to the characteristics of the individual children themselves, as well as the characteristics of their families and the communities where they live. This section explores these characteristics. Guided by findings from previous studies, the characteristics considered here are the age and gender of children, the gender and educational attainments of the household heads, the socio-economic level of households as measured by quintiles of per capita expenditure, urban-rural locations, and sectors of economic activity.

Child Demographics

Age

The labor market participation of children is a function of age. The older the child, the higher the potential income that can be earned by the child, and hence the higher the probability that the child will work. This is clearly shown in Figure 1, which indicates that labor market participation of children increases by age at an increasing rate. The figure shows that the incidence of child labor among children at the age bracket of 5-9 years is quite low. Among children aged between 5 and 7 years, the incidence of child labor never reached one percent. Likewise, among children aged 8 and 9 years, those employed still constitute less than two percent. Child labor is much more prevalent at the age bracket 10 to 14 years. The incidence of child labor increases exponentially from around four percent (among children aged 10 years) to around 20 percent (among children aged 14 years).

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15 Manning (2000) asserts that the incidence of child labor in Indonesia has always been relatively low compared to other Asian countries. ILO (2002) estimates that in the year 2000 the incidence of child labor among children aged 5-14 years in Asian and Pacific countries is around 19 percent, in Latin America around 16 percent, in Sub-Saharan Africa around 29 percent, while in developed countries only around 2 percent.
This pattern of the incidence of child labor by age demonstrates that more than 90 percent of the children who participated in the labor market were aged between 10-14 years. Figure 2 shows the distribution of child labor by age. Similar to the Figure 1, the distribution of child labor also seems to increase exponentially from approximately 3-4% among children aged 5-8 years to approximately 6-8% among children aged 10 years, and finally 32-35% among children aged 14 years.

16 See Widyanti et al. (2001).
Gender

Similar to the findings from other countries, the child labor phenomenon in Indonesia is not equal between boys and girls. Table 2 shows the incidence and distribution of child labor by gender. The table indicates that child labor is significantly more prevalent among boys than girls. The incidence of child labor among boys is approximately 7-8% while among girls it is approximately 4%. As a result, boys make up around 65% of all child labor and girls the remaining 35%.

Table 2. The Incidence and Distribution of Child Labor by Gender of Children (%)

<table>
<thead>
<tr>
<th>Gender</th>
<th>1998</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Child Labor Incidence</td>
<td>Distribution of Child Laborers</td>
</tr>
<tr>
<td>Male (Boys)</td>
<td>7.79</td>
<td>65.92</td>
</tr>
<tr>
<td>Female (Girls)</td>
<td>4.20</td>
<td>34.08</td>
</tr>
<tr>
<td>Total</td>
<td>6.03</td>
<td>100.00</td>
</tr>
</tbody>
</table>

N 11,822 713 11,892 647

Note: N in the incidence column shows the total number of children in the sample, while N in the distribution column shows the number of children who work.

This pattern of the incidence of child labor by gender shows that the higher tendency for boys to work compared with girls is consistent with the findings from Peru and Pakistan by Ray (2000). In these countries, the incidence of child labor is also higher for boys than it is for girls. However, this pattern contrasts Blunch and Verner’s findings (2000) in Ghana, where the incidence of child labor among girls is higher than among boys. They argue that this is the result of discrimination by favoring boys over girls for access to education in this country, so there is higher probability that girls will be sent to work.

Household Head Demographics

Gender

The child labor phenomenon is also related to the gender of the household heads. However, contrary to the pattern of child labor according to the gender of the children, child labor is more prevalent among households headed by females than by males. Table 3 shows the incidence and distribution of child labor by gender of household heads. While the incidence of child labor among male headed households is around 5-6%, the incidence among female headed households is significantly higher at around 9-10%. Nevertheless, since households headed by females make up only a small minority of the population, child laborers from male-headed households still make up more than 90% of total child labor.
Table 3. The Incidence and Distribution of Child Labor by Gender of Household Head (%)

<table>
<thead>
<tr>
<th>Gender of Household Head</th>
<th>1998</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Child Labor Incidence</td>
<td>Distribution of Child Laborers</td>
</tr>
<tr>
<td>Male</td>
<td>5.84</td>
<td>91.87</td>
</tr>
<tr>
<td>Female</td>
<td>9.45</td>
<td>8.13</td>
</tr>
<tr>
<td>Total</td>
<td>6.03</td>
<td>100.00</td>
</tr>
<tr>
<td>N</td>
<td>11,822</td>
<td>713</td>
</tr>
</tbody>
</table>

Note: N in the incidence column shows the total number of children in the sample, while N in the distribution column shows the number of children who work.

In qualitative studies, female-headed households are often identified as the poorest of the poor. However, this has been proved to be very difficult to corroborate in quantitative studies. Such studies usually find that the poverty rates among female headed households are more or less equal to the poverty rates among male headed households, or the two groups of households have a similar degree of vulnerability to poverty. The finding of this study, which demonstrates that child labor is more prevalent among female headed households than among male headed households, lends some support to the findings from qualitative studies that indeed female headed households are more vulnerable than male headed households.

**Education Level**

Studies in other countries have shown that the higher the level of education of the household head, the lower the incidence of child labor. This is also observed in the case of Indonesia. Table 4 shows the relationship between the level of education of the household head and the incidence and distribution of child labor. The table clearly demonstrates that the incidence of child labor quickly diminishes with higher education levels of household heads. This implies that households headed by persons with higher levels of education are less likely to send their children to work than households headed by persons with low levels of education. In fact, around 90% of all child labor come from households headed by persons who have at most primary school education.

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17 See for example Dreze and Srinivasan (1997), Glewwe and Hall (1998), and Suryahadi and Sumarto (2001).
Table 4. The Incidence and Distribution of Child Labor
By Level of Education of Household Heads (%)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Not completed primary school</td>
<td>7.89</td>
<td>62.83</td>
<td>7.45</td>
<td>59.20</td>
</tr>
<tr>
<td>Completed primary school</td>
<td>5.10</td>
<td>27.77</td>
<td>4.68</td>
<td>31.38</td>
</tr>
<tr>
<td>Completed junior secondary school</td>
<td>4.51</td>
<td>5.75</td>
<td>3.67</td>
<td>5.87</td>
</tr>
<tr>
<td>Completed senior secondary school</td>
<td>2.31</td>
<td>3.65</td>
<td>1.80</td>
<td>3.09</td>
</tr>
<tr>
<td>Completed tertiary education</td>
<td>0.00</td>
<td>0.00</td>
<td>1.12</td>
<td>0.46</td>
</tr>
<tr>
<td>Total</td>
<td>6.03</td>
<td>100.00</td>
<td>5.44</td>
<td>100.00</td>
</tr>
</tbody>
</table>

N 11,822 713 11,892 647

Note: N in the incidence column shows the total number of children in the sample, while N in the distribution column shows the number of children who work.

There are at least two explanations for this. Firstly, household heads with higher levels of education are more likely to be able to generate higher income for their families. Hence, there is less need for them to send their children to work. Secondly, highly educated parents have better understanding about the importance and benefits of education from their own personal experience. As a result, they are likely to put a higher weight on their children’s education than parents with lower levels of education.

Socio-Economic Level

As mentioned earlier, the literature often characterizes the phenomenon of child labor as a symptom of poverty. Hence it is often argued that child labor is a function of family income. Table 5 shows the incidence and distribution of child labor by quintiles of per capita expenditure (as a proxy to income). The table indicates that the higher the per capita expenditure quintile (which means the better off the households), the lower the incidence of child labor. While the incidence of child labor in the two poorest quintiles is around 6-7%, the incidence of child labor in the richest quintile is around 2-3%. Furthermore, around 60% of all child labor come from households in the two poorest quintiles.
Table 5. The Incidence and Distribution of Child Labor by Quintiles of Household Per Capita Expenditure (%)

<table>
<thead>
<tr>
<th>Quintile of Per Capita Expenditure</th>
<th>Child Labor Incidence</th>
<th>Distribution of Child Labor</th>
<th>Child Labor Incidence</th>
<th>Distribution of Child Labor</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>6.85</td>
<td>34.36</td>
<td>6.31</td>
<td>36.63</td>
</tr>
<tr>
<td>II</td>
<td>6.85</td>
<td>26.93</td>
<td>6.10</td>
<td>26.58</td>
</tr>
<tr>
<td>III</td>
<td>5.62</td>
<td>17.81</td>
<td>4.84</td>
<td>16.85</td>
</tr>
<tr>
<td>IV</td>
<td>5.71</td>
<td>15.15</td>
<td>5.56</td>
<td>15.46</td>
</tr>
<tr>
<td>V</td>
<td>3.18</td>
<td>5.75</td>
<td>2.29</td>
<td>4.48</td>
</tr>
<tr>
<td>Total</td>
<td>6.03</td>
<td>100.00</td>
<td>5.44</td>
<td>100.00</td>
</tr>
</tbody>
</table>

N 11,822  713  11,892  647

Note: N in the incidence column shows the total number of children in the sample, while N in the distribution column shows the number of children who work.

While Table 5 confirms the conventional wisdom that the child labor phenomenon is related to poverty, one might expect that the pattern would be sharper than suggested by this table. Hence, some possible explanations are warranted. First, as mentioned earlier, the 100 Village Survey focuses on rural and relatively poor areas. Therefore, households in higher quintiles in this data might still be considered relatively poor compared to the general population. Second, the total household expenditure calculated here includes those financed by income from child labor. Excluding this source of family income will lower the relative position of households with child labor in the higher quintiles and sharpens the pattern. Nevertheless, Table 5 indicates that child labor is not entirely a subset of poverty, as some dimensions of child labor are not related to poverty.

Location and Sector of Activity

As indicated by findings from many studies in other countries, child labor is mostly a rural phenomenon. This is also confirmed in the case of Indonesia. Table 6 highlights the incidence and distribution of child labor across urban and rural areas. The table indicates that the incidence of child labor in rural areas is approximately 6-7%, which is much higher than the incidence of child labor in urban areas at approximately 2-3%. In terms of the distribution of child labor, child labor in rural areas makes up more than 90% of all child labor. Since child labor is mostly a rural phenomenon, it is not surprising that most of child labor are absorbed mainly by the agricultural sector. Table 7 demonstrates that more than three-quarters of child labor is employed in the agricultural sector.

See Basu (1999).
Table 6: The Incidence and Distribution of Child Labor by Urban-Rural Location (%)

<table>
<thead>
<tr>
<th>Location</th>
<th>1998</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Child Labor Incidence</td>
<td>Distribution of Child Labor</td>
</tr>
<tr>
<td>Urban</td>
<td>2.67</td>
<td>8.84</td>
</tr>
<tr>
<td>Rural</td>
<td>6.87</td>
<td>91.16</td>
</tr>
<tr>
<td>Total</td>
<td>6.03</td>
<td>100.00</td>
</tr>
<tr>
<td>N</td>
<td>11,822</td>
<td>713</td>
</tr>
</tbody>
</table>

Note: N in the incidence column shows the total number of children in the sample, while N in the distribution column shows the number of children who work.

Table 7. Distribution of Child Labor by Economic Sector (%)

<table>
<thead>
<tr>
<th>Sector</th>
<th>1998</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>75.32</td>
<td>76.66</td>
</tr>
<tr>
<td>Industry</td>
<td>9.26</td>
<td>12.83</td>
</tr>
<tr>
<td>Trade</td>
<td>8.56</td>
<td>8.81</td>
</tr>
<tr>
<td>Services</td>
<td>3.51</td>
<td>1.39</td>
</tr>
<tr>
<td>Other</td>
<td>3.37</td>
<td>0.31</td>
</tr>
<tr>
<td>N</td>
<td>713</td>
<td>647</td>
</tr>
</tbody>
</table>

The profile of child labor as discussed in this section turns out to largely mirror the profile of poverty. Pradhan et al. (2000) have shown that poverty in Indonesia is largely a rural and agricultural phenomenon, as well as very much determined by the education levels of household heads. This confirms evidence from other countries, which also suggests that there is a strong link between child labor and poverty.19

B. The Determinants of Child Labor

The previous section explored some individual and household characteristics related to the child labor phenomenon. This section estimates a model of household level determinants of children's participation in the labor market. The purpose of this analysis is to identify the factors that influence the decisions of households to send

19 See Krueger (1996).
their children to the labor market. The model employed here is a limited-dependent-variable model, where the dependent variable is a dummy variable of whether or not a household has at least one child aged 5-14 years who works. Meanwhile, the independent variables include per capita household expenditure, household size, urban-rural location, gender of the household head, dependency ratio,20 education level of the household head, employment sector of household head, working status of the household head, and age of the household head.

Two estimation methods are employed in this analysis, i.e. probit and iv-probit. The instrumental variable (iv) probit method is employed to take into account the probability of endogeneity of the per capita expenditure variable. A child’s participation in the labor market may affect household income and hence household expenditure. The instrumental variables used in the estimation are household ownership of various assets. The estimations are implemented separately for the 1998 and 1999 data.

The estimation results are presented in Table 8. Using probit, the coefficient of per capita household expenditure in 1998 has a “wrong” sign, although statistically insignificant. However, using iv-probit all the coefficients have the expected signs and almost all of them are statistically significant. The only variable whose coefficient is not significant in both years is the working status of household head. Whether the household head is a wage-laborer or an unpaid family worker does not seem to have a significant effect on the tendency for their children to enter the labor market.

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20 Dependency ratio here is defined as the proportion of the number of household members not in the labor force to the number of household members in the labor force.
Table 8. The Determinants of Child Labor at the Household Level

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>1998 Probit</th>
<th>1998 IV-Probit*</th>
<th>1999 Probit</th>
<th>1999 IV-Probit*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per capita household expenditure</td>
<td>0.0122 (0.008)</td>
<td>-0.0467* (0.019)</td>
<td>-0.0063 (0.008)</td>
<td>-0.0539** (0.018)</td>
</tr>
<tr>
<td>Household size</td>
<td>0.0117** (0.002)</td>
<td>0.0073** (0.002)</td>
<td>0.0079** (0.002)</td>
<td>0.0043* (0.002)</td>
</tr>
<tr>
<td>Dependency ratio</td>
<td>0.1998** (0.022)</td>
<td>0.1726** (0.023)</td>
<td>0.1337** (0.019)</td>
<td>0.1125** (0.020)</td>
</tr>
<tr>
<td>Age of household head</td>
<td>0.0015** (0.000)</td>
<td>0.0014** (0.000)</td>
<td>0.0015** (0.000)</td>
<td>0.0015** (0.000)</td>
</tr>
<tr>
<td>Female household head</td>
<td>0.0611** (0.018)</td>
<td>0.0515** (0.017)</td>
<td>0.0455** (0.015)</td>
<td>0.0384** (0.014)</td>
</tr>
<tr>
<td>Education of household head: Senior secondary &amp; tertiary</td>
<td>-0.0400** (0.008)</td>
<td>-0.0288* (0.010)</td>
<td>-0.0349** (0.007)</td>
<td>-0.0262* (0.009)</td>
</tr>
<tr>
<td>Employment sector of household head: Agriculture</td>
<td>0.0471** (0.007)</td>
<td>0.0418** (0.007)</td>
<td>0.0331** (0.006)</td>
<td>0.0288** (0.006)</td>
</tr>
<tr>
<td>Working status of household head: Unpaid family worker</td>
<td>0.0122 (0.008)</td>
<td>0.0123 (0.008)</td>
<td>0.0137 (0.007)</td>
<td>0.0139 (0.007)</td>
</tr>
<tr>
<td>Rural</td>
<td>0.0255** (0.008)</td>
<td>0.0141 (0.009)</td>
<td>0.0367** (0.006)</td>
<td>0.0304** (0.007)</td>
</tr>
<tr>
<td>District dummies</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Pseudo R-squared</td>
<td>0.1283</td>
<td>0.1292</td>
<td>0.1494</td>
<td>0.1516</td>
</tr>
<tr>
<td>Number of households</td>
<td>7,013</td>
<td>7,013</td>
<td>7,106</td>
<td>7,106</td>
</tr>
</tbody>
</table>

Note: Number in parentheses are standard error
* The instrumental variables used are household ownership of assets
** = significant at 1 percent level
* = significant at 5 percent level

The rural dummy variable was a positive but statistically insignificant variable in 1998, but become significant in 1999. This can be explained in terms of the crisis period. The 1998 survey was carried out in August, the period around the peak of the crisis. The 1999 survey, meanwhile, was carried out in October, which can be categorized as a stabilization period. Therefore, not surprisingly, in the earlier period
urban households had the same tendency to send their children to work as rural households, while in the latter period a more normal pattern returned where rural households had greater tendency to send their children to work than urban households.

The coefficients of the other variables confirm that the child labor phenomenon is very much related to poverty. The higher the per capita household expenditure (meaning the better off the household), the less likely the children in the household will enter the labor market. The larger the size of household, the more likely the children in that household will become employed. Similarly, households with higher dependency ratio have a higher tendency to send their children to work. Households headed by older people, females, and those who work in the agriculture sector, are also more likely to have children who work. Confirming findings from studies in other countries, the education level of household head has a negative effect on the incidence of child labor. Better-educated household heads are less likely to send their children to the labor market.
V. THE TRADE-OFF BETWEEN SCHOOL AND WORK

The ILO argues that child labor perpetuates poverty. The link between current child labor and future poverty is lack of education. Children who spend most or a significant amount of their time working will have very little opportunity to obtain proper education. Consequently, these children will most likely to grow up as poorly educated adults with low skill levels, forcing them to work in low productivity and low wage jobs. Hence the children who were forced to work because of poverty will have little opportunity to escape poverty as adults. Furthermore, it is very likely that in turn their children will also have to work, which means that child labor leads to poverty and poverty produces child labor. To examine the relationship between attending school and working for children, this chapter analyzes the trade-off between the two activities.

A. School Enrolment

The first step for examining the trade-off between attending school and working is to look at the school enrolment status of all children who currently work. It is true that school enrolment does not provide much information about learning, but it is still useful to know to what extent work displaces formal schooling. Table 9 shows the school enrolment status of child labor across age groups. Approximately half of the working children were still enrolled at school in 1998-1999. This indicates that – at least for these age groups – working does not always completely eliminate the opportunity to obtain a formal education. Amongst the remaining child labor, that is those who do not attend school, around 45% are school drop outs while the rest 5% have never or not yet enrolled at school. Among this latter group, some might eventually enroll at school, but others might never obtain any formal education at all.

<table>
<thead>
<tr>
<th>School Enrolment Status</th>
<th>1998</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5-9 yr</td>
<td>10-14 yr</td>
</tr>
<tr>
<td>Never/not yet enrolled</td>
<td>19.61</td>
<td>3.32</td>
</tr>
<tr>
<td>Still enrolled</td>
<td>72.55</td>
<td>49.24</td>
</tr>
<tr>
<td>No longer enrolled</td>
<td>7.84</td>
<td>47.43</td>
</tr>
<tr>
<td>Total</td>
<td>100.00</td>
<td>100.00</td>
</tr>
<tr>
<td>N</td>
<td>51</td>
<td>662</td>
</tr>
</tbody>
</table>

Table 9: School Enrolment Status of Child Labor by Age Group (%)

ILO (2002).
In interpreting the figures provided in Table 9, it is important to bear in mind that they do not imply causality. It is not always the case that working prevents a child from obtaining an education. It is true that for some children the need to work for income causes them to drop out of school or delay enrollment. For others, however, it could be the case that for various reasons, children drop out of school and later take up some work to utilize idle time.

To examine to what extent working actually reduces school enrolment rates, Table 10 compares the rate of school participation between child labor and children who do not work. Each cell in this table has two numbers. The top number shows the row percentage and the bottom number shows the column percentage. For example, in 1998, among the children who attended school, 96% were classified as non-child labor and 4% were classified as child labor. Meanwhile, among non-child labor, 79% attended school and 21% did not attend school.

Table 10: School Participation Rates of Child Labor & Non-Child Labor (%)

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th></th>
<th>1999</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-child</td>
<td>Child</td>
<td>Total</td>
<td>Non-child</td>
</tr>
<tr>
<td></td>
<td>labor</td>
<td>labor</td>
<td></td>
<td>labor</td>
</tr>
<tr>
<td>Attending school</td>
<td>96.03</td>
<td>3.97</td>
<td>100.00</td>
<td>96.42</td>
</tr>
<tr>
<td></td>
<td>79.07</td>
<td>50.91</td>
<td>77.37</td>
<td>79.20</td>
</tr>
<tr>
<td>Not attending school</td>
<td>86.92</td>
<td>13.08</td>
<td>100.00</td>
<td>88.10</td>
</tr>
<tr>
<td></td>
<td>20.93</td>
<td>49.09</td>
<td>22.63</td>
<td>20.80</td>
</tr>
<tr>
<td>Total</td>
<td>93.97</td>
<td>6.03</td>
<td>100.00</td>
<td>94.56</td>
</tr>
<tr>
<td></td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
</tr>
<tr>
<td>N</td>
<td>11,109</td>
<td>713</td>
<td>11,822</td>
<td>11,245</td>
</tr>
</tbody>
</table>

Note: In each cell, the top number is a row percentage and the bottom number is a column percentage.

Table 10 indicates that while approximately 50% of child labor attend school, approximately 80% of children who do not work also attend school. Hence there is a difference of approximately 30% in the enrolment rates between the two groups of children. This 30% difference more or less indicates the extent of reduction in school enrolment among children who work. In other words, a child who works has 30% less probability to attend school than a child who does not work.

B. Time Allocation

The extent of the trade-off between working and attending school among child labor also depends on how much time is spent working. Table 11 compares the number of working days and working hours between working children who still attend school and those who do not. Even though these two groups of child labor
have a similar average working day of six days per week, the average working hours of working children not attending school is clearly much higher than those still attending. Child labor attending school on average work approximately 17 hours per week, or less than three hours per day. Meanwhile those who do not attend school on average work 29-30 hours per week, or approximately five hours per day.

Table 11: Child Labor Working Days and Working Hours Per Week

<table>
<thead>
<tr>
<th></th>
<th>Working days</th>
<th>Working hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>1998</td>
<td>All child labor:</td>
<td>713</td>
</tr>
<tr>
<td></td>
<td>- Attending school</td>
<td>363</td>
</tr>
<tr>
<td></td>
<td>- Not attending school</td>
<td>350</td>
</tr>
<tr>
<td>1999</td>
<td>All child labor:</td>
<td>647</td>
</tr>
<tr>
<td></td>
<td>- Attending school</td>
<td>331</td>
</tr>
<tr>
<td></td>
<td>- Not attending school</td>
<td>316</td>
</tr>
</tbody>
</table>

Table 11 implies that working full-time is not compatible with attending school. However, working part-time may still provide some room for children to pursue their education. In fact, it is quite possible that without taking the part-time work, these children will not be able to attend school. This, however, has to be discounted by the probability that working children have less time to study and do homework outside school hours compared to those who do not work. Nevertheless, a combination of attending school and part-time work may still be considered more desirable than not attending school at all.

C. The Role of Poverty

Table 12 outlines the reasons for child dropouts from school according to the survey. The data strongly suggests that poverty is the main reason for children dropping out of school. It indicates that “costs and other financial reasons” dominates the reasons for both child labor and non-child labor dropping out of school. In both years, approximately 60-69% of child labor and 71-74% of non-child labor dropouts cite this reason. Meanwhile, another closely related reason, “helping parents work” becomes the variable that distinguishes non-child labor from child labor to drop out of school. As indicated in the table, this reason was chosen by 12-16% of child labor, while only around 1% of non-child labor considers this as a reason for leaving school. Obviously, the necessity to help parents work is due to more severe poverty.
Table 12: Reasons for Dropping Out of School (%)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs and other financial reasons</td>
<td>68.55</td>
<td>74.44</td>
<td>59.65</td>
<td>71.09</td>
</tr>
<tr>
<td>Helping parents work</td>
<td>12.26</td>
<td>1.20</td>
<td>16.49</td>
<td>1.44</td>
</tr>
<tr>
<td>Doing household chores</td>
<td>0.31</td>
<td>1.72</td>
<td>0.35</td>
<td>1.08</td>
</tr>
<tr>
<td>Too long distance to school</td>
<td>6.60</td>
<td>7.38</td>
<td>7.72</td>
<td>14.36</td>
</tr>
<tr>
<td>Enough education</td>
<td>4.09</td>
<td>4.12</td>
<td>7.02</td>
<td>4.13</td>
</tr>
<tr>
<td>Getting married</td>
<td>0.63</td>
<td>1.20</td>
<td>0.35</td>
<td>0.36</td>
</tr>
<tr>
<td>Academically unable</td>
<td>7.55</td>
<td>9.95</td>
<td>8.42</td>
<td>7.54</td>
</tr>
<tr>
<td>N</td>
<td>318</td>
<td>583</td>
<td>285</td>
<td>557</td>
</tr>
</tbody>
</table>

Other variables that are related to poverty are “doing household chores” and “too long distance to school”. Doing household chores is obviously not an important reason for children to drop out of school, as less than 2% selected this reason. Distance to school, on the other hand, seems to be a major obstacle for a significant number of children in attending school. Providing school facilities closer to the residences of these children will certainly be of assistance. Providing cheaper transportation for them is another alternative. However, subsidizing these children (or their families) to attend school may provide a more practical and cheaper alternative for the government at present. In the long run, this should be accompanied by improvement in the quality of schooling to raise the return to education.

Table 13 verifies that poverty is an important reason for children to take up work. It compares the means of per capita household expenditure of various groups of children. As expected, the mean of real per capita expenditure of child labor is always lower than that of non-child labor. Similarly, children who do not attend school have lower real per capita expenditure than those who attend school. Furthermore, the table shows that child labor not attending schools are indeed the poorest group of children. Slightly above this group are child labor who still attend school. These two groups of child labor have around 5% difference in their means of household per capita expenditure. Interestingly, the mean of household per capita expenditure of child labor who still attend school is even lower than the mean of household per capita expenditure of non-child labor who have dropped out of school. This implies that indeed child labor are the poorest among children.
### Table 13: Mean of Household Real Per Capita Expenditure of Various Groups of Children (Rp/month)

<table>
<thead>
<tr>
<th>School Enrollment Status</th>
<th>1998</th>
<th></th>
<th>1999</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-child labor</td>
<td>Child labor</td>
<td>Total</td>
<td>Non-child labor</td>
</tr>
<tr>
<td>Attending school</td>
<td>80,266</td>
<td>68,376</td>
<td>79,794</td>
<td>87,448</td>
</tr>
<tr>
<td>Not attending school</td>
<td>71,024</td>
<td>65,453</td>
<td>70,295</td>
<td>79,619</td>
</tr>
<tr>
<td></td>
<td>(40,030)</td>
<td>(29,508)</td>
<td>(38,857)</td>
<td>(41,232)</td>
</tr>
<tr>
<td>Total</td>
<td>78,332</td>
<td>66,941</td>
<td>77,645</td>
<td>85,820</td>
</tr>
<tr>
<td></td>
<td>(46,846)</td>
<td>(31,728)</td>
<td>(46,154)</td>
<td>(45,674)</td>
</tr>
<tr>
<td>N</td>
<td>11,109</td>
<td>713</td>
<td>11,822</td>
<td>11,245</td>
</tr>
</tbody>
</table>

Note: Numbers in parentheses are standard deviations.
VI. CONCLUSION

Although the recent economic crisis has not resulted in a widespread increase in the child labor phenomenon in Indonesia, nevertheless it has halted the declining trend in the incidence of child labor in Indonesia, which has been observed since the early 1970s. Historically, the incidence of child labor in Indonesia has always been relatively low compared to other developing countries at similar stage of development.

Confirming findings from other countries, this study demonstrates that there is a strong link between child labor and poverty. The profile of child labor largely mirrors the profile of poverty, and poverty is found to be an important determinant of child labor. Furthermore, other determinants of child labor are similar to the determinants of poverty. Both child labor and poverty in Indonesia are largely rural and agricultural phenomena, and both are very much related to the education levels of household heads. This study finds that indeed child labor are the poorest among children. However, this study also finds child labor is not entirely a subset of poverty, as there are some dimensions of child labor which are not related to poverty.

The findings of this study also support the notion that there is a vicious cycle of poverty and child labor. The supply of child labor mostly comes from households headed by persons with no, or very low levels of formal education. To the extent that working hampers children’s schooling, working children are likely to grow up as poorly educated adults themselves and will remain poor. Hence, there is a high probability that when working children become adults, their own children will also enter the labor market.

However, this study finds that working does not completely eliminate the children’s opportunity to obtain a formal education, as only a half the number of child labor are not enrolled at school. The difference between the number of child labor enrolled at school and those who are not, is also related to poverty. The latter group of children apparently comes from poorer households than the former. This implies that more severe poverty is the reason for children taking up full-time work.

Another interesting finding is that children who dropped out of school but do not take up work come from households which are less poor than children who work but are still enrolled at school. This suggests that a proportion of children who come from poor households can still attend school by taking part-time work to pay for their education. This in turn implies that, unless necessary measures are taken, prohibiting these children from working will not be of assistance. Instead, it may force them to drop out of school.
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