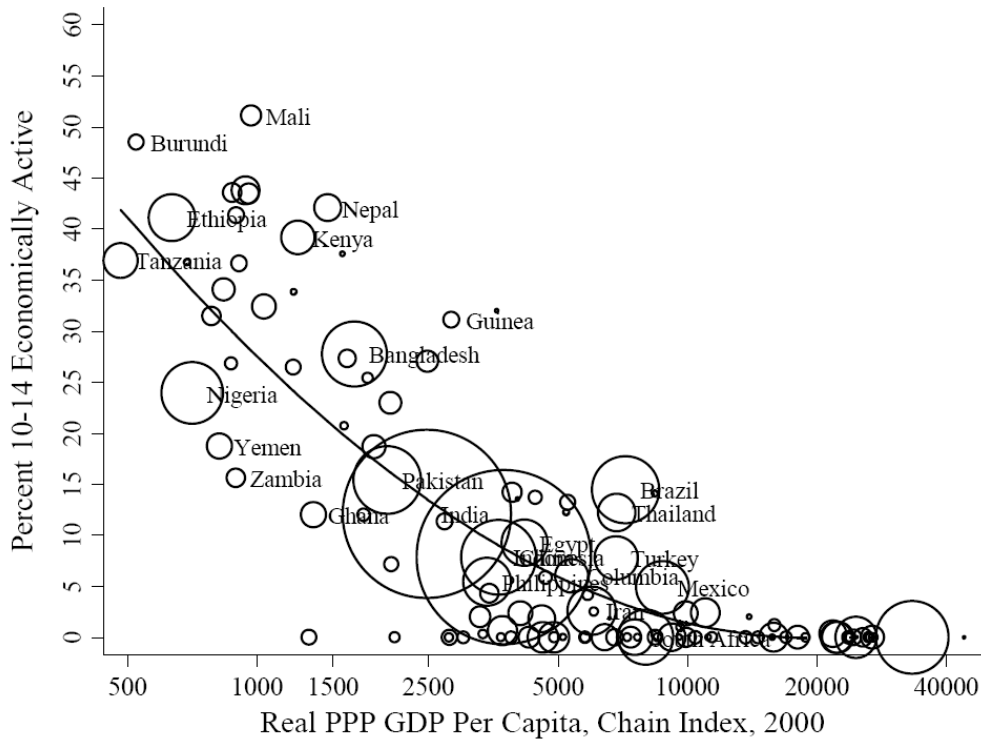# Child Labor

The issue of working children and child labor has received a great deal of attention from both researchers and policy makers in recent years. Child labor is an extremely important economic and social issue for many reasons. It deprives children of their childhood. In addition, it can adversely affect their physical, mental, and cognitive development. In 2004, the number of working children was estimated to be 218 million in 2004 (ILO 2006). About 14% of the world's 5-14 year old children were engaged in child labor in 2004. The incidence of child labor (proportion of child labor to number of children) varies across regions with the incidence of child labor being much higher in developing countries.

Child labor is fundamentally a reflection of poverty and weak economic and social institutions. There is strong negative association between poverty and the incidence of child labor.   Child labor is almost unheard of in the developed countries. Figure 1 below depicts the relationship between the incidence of working children and per-capita income. It shows a strong negative association between the proportion of economically active (working) children of age group 10-14 and real per-capita income (base year = 2000). It show that less than 5 percent of children in age group 10-14 were working in countries with real per-capita income of $5,000 and more.

In popular opinion, child labor is often equated with child abuse: children working in very unsafe and exploitative environment. This has led to widespread demand for banning child labor and consumer boycott of goods and services produced by child labor. As we will see in this lecture that the term ``child labor" covers a wide range of economic activities in which children participate and most of the children do not work in unsafe and exploitative environment. Fortunately, the incidence of children engaged in the worst forms of child labor such as prostitution, bonded labor etc. is relatively small. Understanding the varied nature of child labor and its causes are extremely important for policy interventions. As we will see limiting employment opportunities of children by banning child labor and consumer boycott may be misplaced and may do more harm than good.

Rest of the lecture is structured as follows. In section 1 discusses the concept of child labor and some measurement issues. Section 2 describes the characteristics of child labor using International Labor Organization (ILO) data. Section 3 describes the various facets of child labor using UNICEF data. Section 4 analyzes relationship between   child labor and schooling. Section 5 analyzes major determinants of child labor. Section 6 provides empirical evidence on determinants of child labor. This is followed by policy implications.

Figure 1

Source: Edmonds (2007)

1. What is child labor?

The term "child labor" is often used to cover a multitude of situations: from bonded labor to part-time work on the family farm. It is useful to clarify who classifies as a "child" and what activities count as "labor". Neither of these turns out to be simple.

The International Labour Organisation's (ILO) Convention No. 138 specifies 15 years of age as the age at which a person, under normal circumstances, may participate in economic activities. Most studies therefore define children as individuals of less than 15 years of age. It is presumed that children of less than 5 years are unable to work productively and so statistics often show child labour for 5-14 year olds. However, in some cases individuals under the age of 18 years also count as children and the ILO sets more specific thresholds for some types of work e.g. light work from the age of 12 years is permissible in a developing country context (IPEC 2006).

The International Labour Organisation (ILO) and in particular the International Programme on the Elimination of Child Labor (IPEC) are the main international bodies for dealing with child labor. The ILO produces estimate of child labor for different countries under their program called ``Statistical Information and Monitoring Programme on Child Labour " (SIMPOC). The ILO defines any individual between ages 5 to 17 years as child. It distinguishes among three terms: (i) economically active children; (ii) child labor; and (iii) children in hazardous work.

Economically Active Children: A child is economically active if he/she has worked for at least one hour on any day in a seven-day reference period. What working or economically active means? ``Economic activity" is a broad concept that includes productive activities undertaken by children: at home or outside, whether for market or not, paid or unpaid, casual or regular, part-time or full time, legal or illegal. However, it does not include household chores or domestic work undertaken by children. Thus, activities such as cooking, sweeping, fetching water, looking after siblings etc. are not counted as economic activity.

Child Labor: Child labor is a subset of economically active children. ILO defines child labor as ``work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development". Child labor consists of all economically active children excluding all those children aged 12 years and older who are working only few hours a week in permitted light work and those aged 15 years and above whose work is not classified as ``hazardous".

According to this definition all economically active children in age group 5-12 are counted as child labor. However, economically active children in age group 12-14 are counted as child labor only when they work more than a specified minimum number of hours in the reference week. Finally, economically active children in the age group 15-17 are counted as child labor only when they are engaged in hazardous activities.

Hazardous Work: Hazardous work by children is any activity which adversely affects child's safety, health (physical and mental), and moral development. Hazards can derive from excessive workload, unsafe work environment, or exploitative relationship. For examples of hazardous activities please see ILO (2002). Hazardous activities do not include bonded labor, child trafficking, soldiering etc. They are considered to be unconditional worst forms of child labor.

Table 1 below describes the thresholds used by the ILO to categorize working children

Table 1

Various Categories of Activity for Categorizing Working Children

Age groups	Forms of work			
	Non-hazardous work (in non-hazardous industries & occupations and <43 hrs/week)		Worst forms of child labour	
	Light work (<14 hrs/week)	Regular work ($\geq$14 hrs/week and <43 hrs/week)	Hazardous work (in specified hazardous industries & occupations plus $\geq$43 hrs/week in other industries and occupations)	Unconditional worst forms (Trafficked children; children in forced & bonded labour, armed conflict, prostitution & pornography, and illicit activities)
5-11	▓	▓	▓	▓
12-14		▓	▓	▓
15-17			▓	▓

The blue areas are considered as child labour in need of elimination as per ILO Conventions No. 138 and 182.

Source: ILO 2002.

2. Characteristics of Child Labor (SIMPOC Data)

Table 2 below provides   estimated number of working children for various categories over the period 2000-2004.

Table 2

Estimates of Different Categories of Child Work by Age, 2000 and 2004

	Age group (years)	Child population		Of which: economically active children		Of which: child labourers		Of which: children in hazardous work	
		2000	2004	2000	2004	2000	2004	2000	2004
5-17	Number (millions)	1 531.4	1 566.3	351.9	317.4	245.5	217.7	170.5	126.3
	Incidence (% of age group)	100.0	100.0	23.0	20.3	16.0	13.9	11.1	8.1
	% change from 2000 to 2004	–	2.3	–	-9.8	–	-11.3	–	-25.9
5-14	Number (millions)	1 199.4	1 206.5	211.0	190.7	186.3	165.8	111.3	74.4
	Incidence (% of age group)	100.0	100.0	17.6	15.8	15.5	13.7	9.3	6.2
	% change from 2000 to 2004	–	0.6	–	-9.6	–	-11.0	–	-33.2
15-17	Number (millions)	332.0	359.8	140.9	126.7	59.2	51.9	59.2	51.9
	Incidence (% of age group)	100.0	100.0	42.4	35.2	17.8	14.4	17.8	14.4
	% change from 2000 to 2004	–	8.4	–	-10.1	–	-12.3	–	-12.3

Source: Statistical Information and Monitoring Programme on Child Labour (SIMPOC).

Table 2 shows that there were 317.4 million children who were economically active in 2004 of which 217.7 million were child labor. About 126 million children were engaged in hazardous economic activities. Table also shows that 190.7 million children in age-group 5-14 were economically active of which 165.8 million children were working as child labor and 74.4 million of these children were engaged in hazardous activities. This suggests that 39 percent of economically active children in age group 5-14 were engaged in activities highly detrimental to their health and mental development. Table shows that 126.7 million children in the age group 15-17 were economically active of which 51.9 million can be classified as child labor or children engaged in hazardous activities. Thus, 41 percent of economically active children in age-group 15-17 were engaged in activities   highly detrimental to their health and mental development in 2004.

 The incidence of economically active children (proportion of economically active children to their population) was 20.3 percent in 2004. The incidence of child labor and children in hazardous work were 13.9 percent and 8.1 percent respectively in 2004. Table 2 also shows that the incidence of working children increases with age. In 2004,

15.8 percent of children in the age group 5-14 were economically active. The corresponding figure for the age-group 15-17 was 35.3 percent. The incidence of child labor does not vary much across age group. The incidence of child labor was 13.7 percent for age-group 5-14, while it was 14.4 percent for the age group 15-17. However, the incidence of children in hazardous work was two times higher among age-group 15-17 compared to age group 5-14 in 2004.

Over 2000-2004, the incidence of all forms of working children declined substantially. Table 2 shows that the incidence of economically active children and child labor declined by 9.8 percent and 11.3 percent respectively over 2000-2004. The incidence of children in hazardous work declined quite dramatically by 25.9 percent over the same period.

ILO also provides estimates of children engaged in illegal and morally degrading activities such as prostitution, bonded labor, wars etc. These can be considered as the worst forms of child labor. It is estimated that a total of 8.4 million children were involved in child trafficking, in forced or bonded labor, are soldiers, are prostitutes or involved in pornography or participate in illicit activities in 2000 (Edmond and Pavcnik 2005). This estimate suggests that relatively small percentage of children were involved in the worst forms of child labor.

Figure 2 below depicts the percentage change in the number of working children by age group.

Figure 2

Percentage Changes in Child Population and Working Children, 2000 to 2004
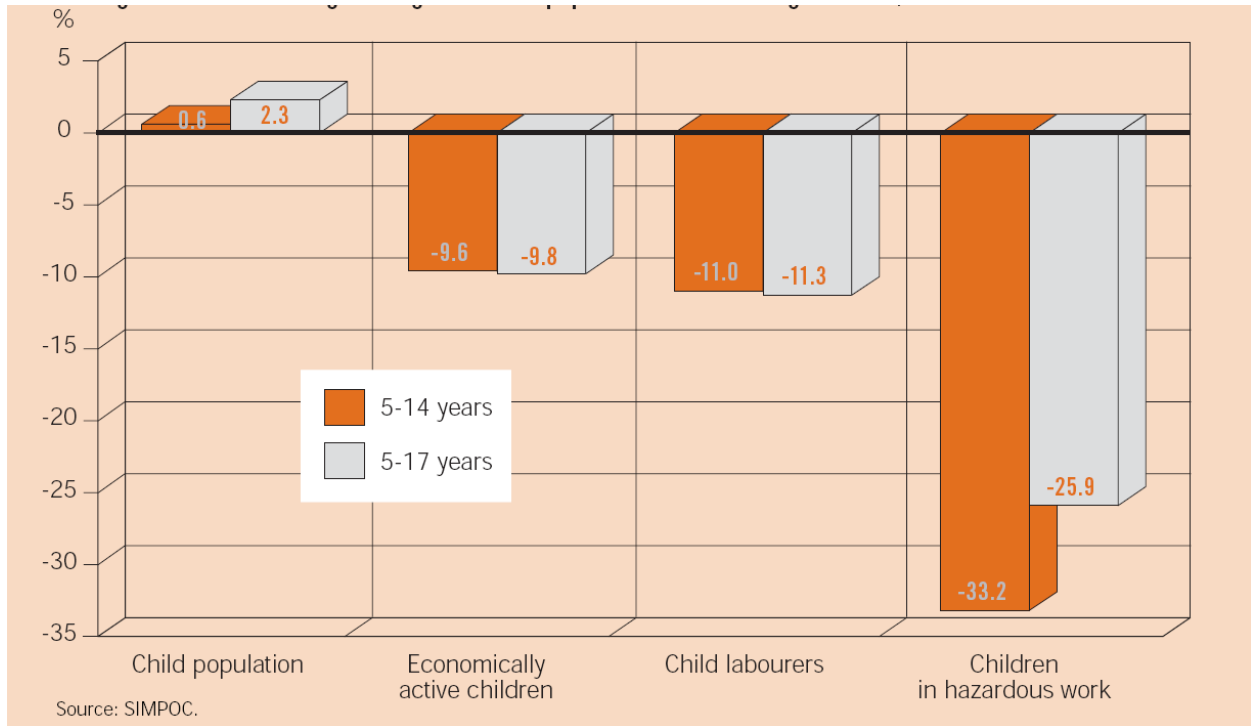
Figure 2 shows that the incidence of economically active children, child labor, and children in hazardous work declined for all age groups. The decline in the incidence of children engaged in hazardous activities for the age group 5-14 has been particularly sharp. Over 2000-2004, the incidence of children engaged in hazardous activities in age group 5-14 declined by 33.2 percent.

Figure 3 depicts the distribution of child labor and children in hazardous work by gender and age as a percentage of economically active children for 2004.

Figure 3

Child Labor and Children in Hazardous Work, Distribution by Sex and Age, 2004 (%)
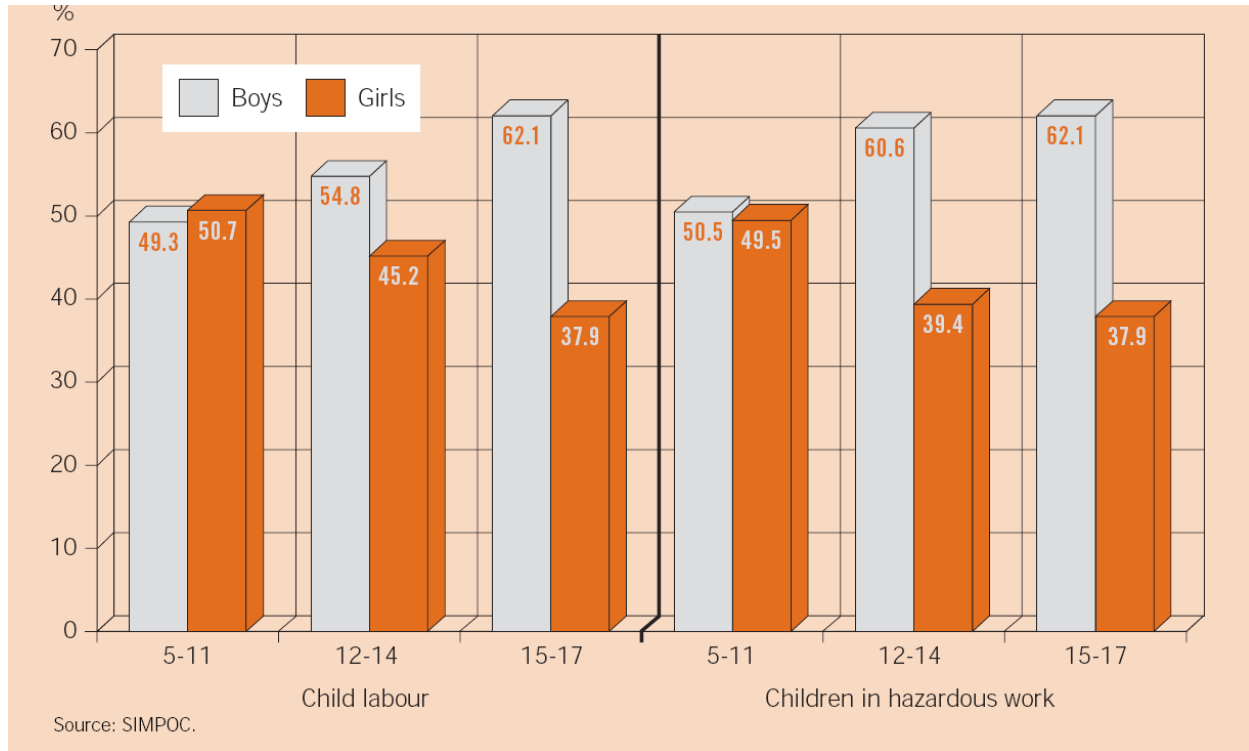

Source: SIMPOC.

Figure 3 shows that child labor and children in hazardous work as a proportion of economically active children increases with age for boys but declines for girls. In 2004, 49.3 percent of economically active boys in age group 5-11 were classified as child labor, while the corresponding figure for age-group 15-17 was 62.1 percent. On the other hand, 50.7 percent and 39.9 percent of economically active girls were classified as child labor in age groups 5-11 and 15-17 respectively.

Figure 4 shows the distribution of working children by sector. It shows that most of the children work in agriculture. In 2004, agriculture accounted for 69 percent of the working children. On the other hand, industry accounted for only 9 percent of working children.

Figure 4

Working Children, Distribution by Sector, 2004

Services (22%)

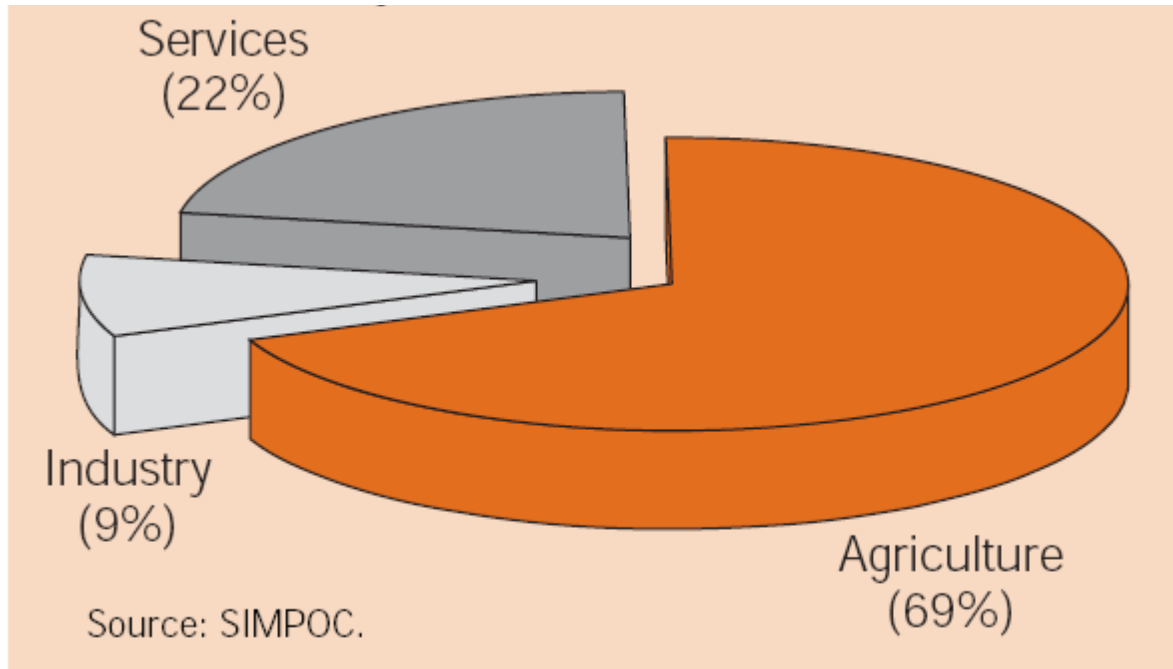Industry (9%)

Agriculture (69%)

Source: SIMPOC.

Table 3 below shows the global distribution of working children. It shows that the Asia-Pacific and Sub-Saharan regions account for bulk of the working children. In 2004, number of working children in the Asia-Pacific and Sub-Saharan regions was 122.3 million and 49.3 million respectively. These two regions, together, account for about 90 percent of the working children in the world. Table also shows that the incidence of working children is highest in the Sub-Saharan region. The incidence of working children in this region was 26.4 percent in 2004. The incidence of working children was 18.8 percent in the Asia-Pacific region.

Table 3

Global Trends in Children's Economic Activity by Region, 2000 and 2004
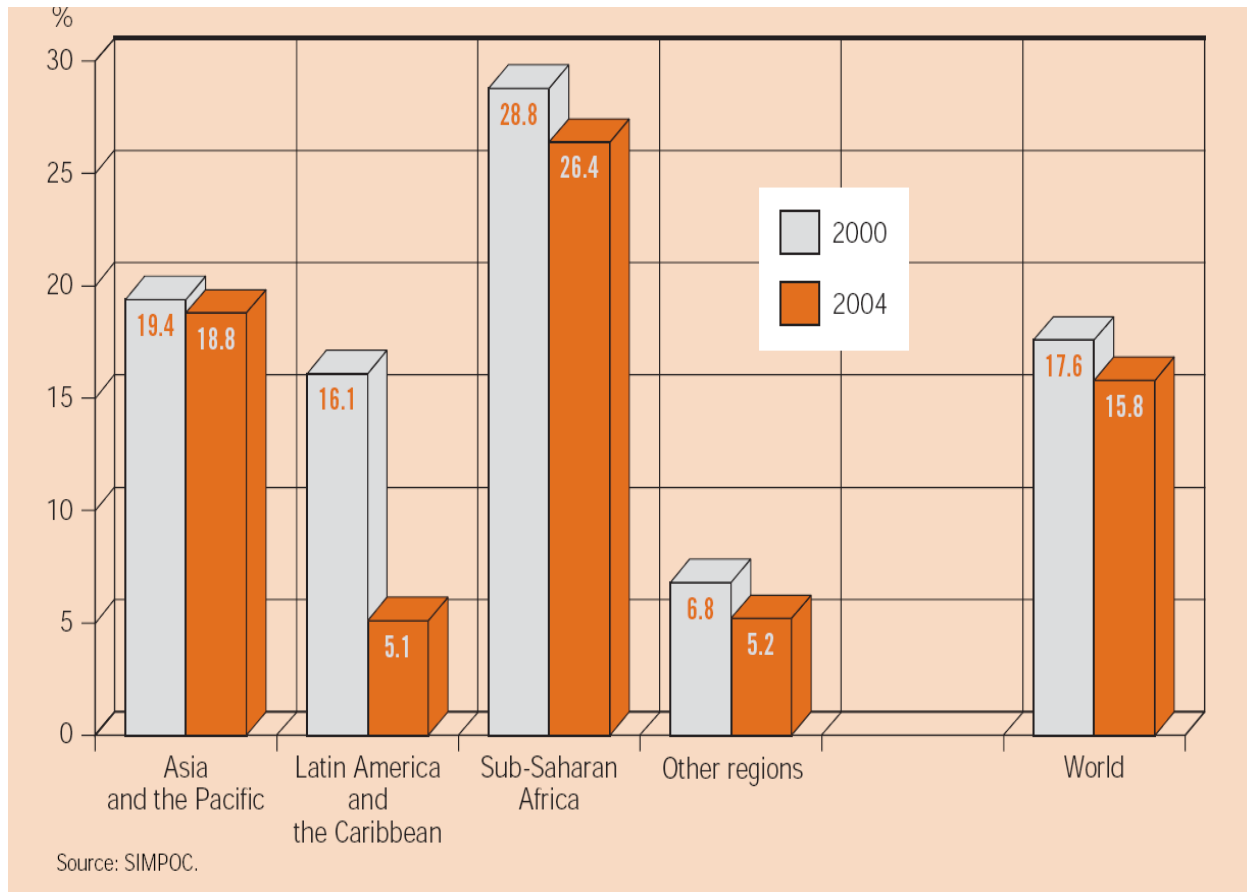
(5-14 Age Group)

Region	Child population (million)		Economically active children (million)		Activity rate (%)	
	2000	2004	2000	2004	2000	2004
Asia and the Pacific	655.1	650.0	127.3	122.3	19.4	18.8
Latin America and the Caribbean	108.1	111.0	17.4	5.7	16.1	5.1
Sub-Saharan Africa	166.8	186.8	48.0	49.3	28.8	26.4
Other regions	269.3	258.8	18.3	13.4	6.8	5.2
World	1 199.3	1 206.6	211.0	190.7	17.6	15.8

Source: SIMPOC.

Figure 5 below shows the global trend in the incidence of working children across different regions. Figure shows that the incidence of working children declined across all regions over 2000-2004. However, the decline was quite moderate in the Asia-Pacific and Sub-Saharan regions, the two regions with the highest concentration of working children.   The incidence of working children declined quite dramatically in the Latin American and the Caribbean countries.   Over the period 2000-2004, the incidence of working children declined from 16.1 percent to 5.1 percent in these countries.

Figure 5

Children's Activity Rates by Region, 2000 and 2004 (5-14 Age Group, %)

%

30
28.8
26.4
25
20
19.4 18.8
17.6
16.1
15.8
15
10
6.8
5.1
5.2
5
0

Asia and the Pacific   Latin America and the Caribbean   Sub-Saharan Africa   Other regions   World

2000
2004

Source: SIMPOC.

So far we have looked at the various facets of working children using ILO definition. However, this definition does not provide complete picture of working children. There are two main problems with this definition. Firstly, it does not take into account time spent by children on domestic or household chores.   If working adversely affects children, then engagement in both domestic work and market work is harmful to children. Secondly, it does not tell us about the intensity of work or how many hours' children spend working in a week. Again working longer hours is more likely to adversely affect children. To get better picture of child labor, one needs to look at time allocation of children in various activities.

In 2000 and 2001 UNICEF undertook survey of time allocation of children in various activities including domestic work in 36 countries. The list of countries covered

is given in the footnote of table 3. This survey is known as ``Multiple Indicator Cluster Survey" (MICs). This survey provides comprehensive information on various facets of working children.   Major limitation of this data set compared to ILO data set is that it is available only for 36 countries. ILO data covers all countries in the world. In the next section, we summarize the main findings of MICs data set.

3. Working Children and Domestic Work

The UNICEF survey defines children as any individual in age group 5-14. A child is classified as working if he/she has been engaged in domestic or market work for at least an hour in the reference week.   This survey estimates that 124 million children were working in these countries. A summary of its findings are reported in table 3.

  Table 4 shows that 68.4 percent of children in age group 5-14 were working in 2000-01. This percentage is much higher than one reported by the ILO. The large discrepancy between these two estimates is basically due to inclusion of domestic work in the UNICEF survey. Table 3 shows that 64.6 percent of children in age group 5-14 were engaged in domestic work. Only 25 percent of children were engaged in market work, which is in line with the ILO estimate.   If we include both domestic and market work, the incidence of working children was as high as 68.4 percent.

Table 4

Participation Rates in Various Activities for 124 Million Children 5–14 from 36 Countries in 2000

	All children	Age		Gender		Location	
	5–14	*5–9*	*10–14*	*Male*	*Female*	*Urban*	*Rural*
Market work (MAR)	25.0	15.3	35.2	26.6	23.3	18.9	30.5
Paid	2.4	1.0	4.0	2.8	2.0	2.2	2.5
Unpaid	5.8	4.4	7.3	5.6	5.9	4.0	7.3
Family	20.8	12.4	29.7	22.4	19.1	14.8	26.2
Domestic work (DOM)	64.6	50.8	79.2	59.3	69.9	60.7	67.4
Any work (MAR + DOM)	68.4	53.5	84.3	64.8	72.1	64.1	71.7
20 or more hours per week	20.7	10.3	31.8	19.4	22.1	14.1	26.4
40 or more hours per week	6.4	2.7	10.3	6.1	6.7	3.6	8.8

Notes: Each cell contains participation rates in indicated activity in the last week. Children may participate in multiple activities. *Paid* refers to children who worked outside of their household for wages in the last week. *Unpaid* refers to children who worked outside of their household in the last week without pay. *Family* refers to children that worked in their family business or farm in the last week. *Market work* indicates that the child participated in paid, unpaid or family work. *Domestic work* indicates that the child participated in household chores in her own household in the last week. *Any work* indicates that the child participated in market work or domestic work in the last week. UNICEF's summary statistics available at ⟨http://www.childinfo.org⟩ report a higher incidence of unpaid work outside of the child's household. The discrepancy may owe to a missed change in coding in the Angolan and Kenyan data and shows up as a slightly higher incidence of working children in UNICEF summary statistics than those presented.

Source: Authors' calculations from UNICEF Multiple Indicator Cluster Survey End of Decade Assessment microdata: ⟨http://www.childinfo.org/MICS2/MICSDataSet.htm⟩. Countries included are Albania, Angola, Azerbaijan, Bolivia, Bosnia and Herzegovina, Burundi, Cameroon, Central African Republic, Chad, Comoros, Cote d'Ivoire, Democratic Republic of Congo, Dominican Republic, Gambia, Guinea Bissau, Guyana, Kenya, Lao People's Democratic Republic, Lesotho, Madagascar, Moldova, Mongolia, Niger, Philippines, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Sudan, Swaziland, Tajikistan, Togo, Trinidad and Tobago, Uzbekistan, Venezuela and Vietnam. Individual country means are weighted to reflect survey design and are weighted by 5–14 population totals in computing cross-country means. Population 5–14 estimates are from ⟨http://esa.un.org/unpp/index.asp?panel=2⟩, medium variant, 2000.

Source: Edmonds and Pavcnik (2005)

Table 4 shows that the incidence of working children increases with age. The incidences of working children were 53.5 percent and 84.3 percent for age groups 5-9 and 10-14 respectively.

Table 4 also shows that most of the working children work at home. The incidence of wage employment outside home is quite low. Less than 3 percent of children aged 5-14 worked outside their home for pay in 2000-01. Also about 80 percent of working children worked less than 20 hours a week. Only 6.4 percent of working children worked 40 or more hours in a week. There are significant regional differences in the incidence of working children. The incidence of working children was much higher in rural areas (71.4%) compared to urban areas (64.1%). Also the proportion of working children working 20 hours and more was significantly higher in rural areas (26.4%) compared to urban areas (14.1%).

Gender Differentials in Child Labor

There is also substantial gender differential in the incidence and nature of working children. Table 4 shows higher participation rates for male children in market work, but far higher participation rates for female children in domestic work. If one includes both types of work (i.e. market and domestic) the participation rate for girls (72.1%) is higher compared to boys (64.8%). It also shows that girls are more likely to work longer hours than boys. For example, 22.1 percent of working girls worked 20 hours and more per week, while the corresponding figure for working boys was 19.4 percent. The analysis shows that if we just include market work in the definition of child labor, we will seriously underestimate the time spent by girls working.

A great deal of evidence suggests that the types of work economically active girls and boys are engaged can be quite different even within a sector. For example, in the agricultural sector boys and girls often undertake separate tasks. Edmonds (2007) suggests Bangladeshi girls are more involved in growing vegetables and poultry where as boys are involved in growing cereal crops. He also finds that boys are more likely to work in construction site preparation and furniture manufacture while girls are more likely to work in textiles and handicrafts. It therefore seems that not only the participation and intensity of work differ across children of different genders, but also the types of work.

Cross-Country Differences in Child Labor

Table 5 below gives country-wise break-up of the participation rates in various activities by children. Table shows that there are significant differences in participation rates across countries. The incidence of working children was highest in North Sudan (93.7%) and lowest in Madagascar (29.2%). In all countries, working children were predominantly engaged in domestic work. In all countries, except for Cameron, Central African Republic, Chad, Niger and Sierra Leone, less than 20 percent of children worked outside their households.

Table 5

Participation Rates in Various Activities by Country for Children 5-14

	Schooling	Market Work			Domestic Work	Any Work	Any Work, No School	No Work, No School
		Any	Inside Hh	Outside Hh				
Sampled Countries	89.2	22.7	18.2	8.4	64.6	68.0	6.4	4.4
Albania	54.7	31.3	29.5	3.5	56.1	62.7	32.6	12.7
Angola	93.2	25.7	20.4	8.8	77.0	78.2	5.9	1.0
Azerbaijan	99.1	8.6	4.0	5.3	61.4	63.3	0.7	0.2
Burundi	88.1	31.2	27.6	6.9	84.3	87.3	11.2	0.7
Cameron	94.5	55.0	42.7	30.8	81.1	85.2	5.0	0.4
Central African Republic	85.5	62.2	50.3	37.3	85.0	88.9	13.6	0.8
Chad	95.0	62.6	55.2	26.7	82.5	88.3	4.6	0.3
Comores	77.1	38.1	32.2	16.3	61.1	66.8	15.9	6.3
Cote d'Ivoire	93.2	37.7	35.3	6.2	68.6	76.7	5.5	1.2
Democratic Republic of the Congo	53.5	19.2	12.9	10.4	50.3	52.3	17.4	29.1
Equatorial Guinea	94.9	33.7	31.0	5.4	84.9	85.8	3.1	0.6
Gambia	93.1	25.1	20.6	6.1	49.4	57.6	4.6	2.3
Guininea-Bissau	93.0	65.5	62.4	15.3	77.3	87.2	6.3	0.6
Guyana	97.4	26.3	15.9	14.7	72.8	75.2	2.3	0.3
Kenya	95.9	2.8	1.0	2.2	66.3	66.8	2.8	1.0
Laos	93.1	31.1	29.3	3.9	69.7	71.3	6.3	0.5
Lesotho	96.6	20.4	17.1	6.1	70.2	72.7	2.6	0.8
Madagascar	88.9	12.0	8.8	3.8	20.5	29.2	5.8	5.3
Moldova	97.3	30.5	23.2	11.8	86.3	88.0	2.1	0.6
Mongolia	95.2	21.4	20.6	1.4	91.2	91.7	4.6	0.2
Niger	88.1	67.1	44.4	42.9	88.7	93.7	11.4	0.4
North Sudan	86.0	16.4	14.2	4.1	52.8	56.7	10.1	4.0
Philippines	95.4	15.5	12.1	4.7	80.9	81.8	4.3	0.2
Rwanda	86.5	27.4	22.7	7.9	82.1	84.3	12.3	1.2
Sao Tome	88.7	15.5	10.0	7.8	80.0	81.3	9.5	1.7
Senegal	89.6	33.7	20.6	17.9	86.9	91.1	9.7	0.4
Sierra Leone	93.5	72.1	59.0	51.4	86.3	89.8	5.9	0.4
South Sudan	95.9	13.1	11.2	3.8	35.2	39.8	2.3	3.2
Swaziland	93.7	10.2	7.9	2.7	83.3	81.7	4.9	1.1
Tajikistan	97.2	12.4	10.0	3.4	72.5	74.6	2.6	0.3
Trinidad	98.0	3.2	2.3	1.1	56.3	56.6	1.1	0.8
Uzbekistan	96.4	15.2	10.6	5.8	78.1	79.8	3.4	0.3
Venezuela	92.0	8.1	3.9	4.5	62.4	64.6	3.8	4.2
Vietnam	95.1	24.4	23.4	1.9	51.7	57.8	4.3	0.6

source: Author's calculation from the 2000 MICS microdata: http://www.childinfo.org/MICS2/MICSDataSet.htm.

Source: Edmonds (2007)

Table 6 below gives industrial composition of working children for various countries.

Table 6

Industrial Composition of Economically Active Children

Country	Age Group	Agr. & Forestry	Fishing	Mining & Quarry.	Manufact.	Construct.	Hotel & Rest.	Trade	Transport, Storage, Comm.	Social & Community Service	Private House.	Other
Bangladesh	5-17	53.6	2.8	0.2	14.4	3.1	2.5	13.9	4.5	4.4		0.4
Cambodia	5-17	72.7		0.5	6.3	1.0		16.0	0.7	2.3		0.4
Costa Rica	5-17	43.4			9.0	7.0	4.8	21.7			5.9	8.0
Costa Rica	5-14	56.6			7.3	4.8	4.9	19.5			2.8	4.1
El Salvador	5-17	48.3	0.8	0.3	16.0	2.4		23.0	2.1	2.1	4.8	2.2
Ethiopia	5-9	97.7			0.4	0.1	0.6	0.4	0.0	0.3	0.3	0.2
Ethiopia	10-14	90.6			2.0	0.3	1.7	3.0	0.1	1.0	1.0	0.3
Ethiopia	15-17	80.7			4.3	0.7	3.2	6.4	0.2	2.0	2.0	0.5
Ghana	5-9	70.4	2.7	0.4	4.3		2.5	18.4	0.3	0.5	0.3	0.3
Ghana	10-14	62.3	2.1	0.5	5.9		5.2	23.1	0.2	0.3	0.3	0.2
Ghana	15-17	57.1	2.9	0.5	8.7		3.7	22.4	0.9	1.5	1.0	1.2
Honduras	5-9	54.3		0.0	8.5	1.5		35.5	0.2	0.0		0.0
Honduras	10-14	59.8		0.0	6.9	1.4		27.3	0.6	3.9		0.1
Honduras	15-17	53.6		0.3	9.3	4.5		21.0	1.4	9.5		0.4
Kenya	5-9	88.9	0.0	0.5	1.1	0.0	0.0	0.8	0.3	5.9	2.4	0.0
Kenya	10-14	78.9	0.1	0.5	1.8	0.4	0.7	1.9	0.1	6.1	8.8	0.7
Kenya	15-17	70.4	0.3	0.5	1.4	0.5	1.4	2.1	1.3	4.7	16.7	0.6
Namibia	6-10	80.6	0.0	0.0	0.1	0.0		0.1	0.9	5.2		13.0
Namibia	11-15	79.2	0.0	0.1	0.7	0.0		0.4	0.8	4.8		14.0
Namibia	16-18	71.8	0.1	0.1	1.3	0.7		4.9	1.5	7.5		12.1
Nicaragua	5-9	60.4			8.4			24.8		4.3		2.1
Nicaragua	10-14	58.2			9.7			23.0		7.0		2.0
Nicaragua	15-17	51.4			13.1			16.5		11.4		7.5
Pakistan	5-14	67.0			10.8	1.8		8.7	3.7	8.0		0.0
Panama	5-17	47.0	2.3	0.2	3.5	3.1	2.3	16.6	3.7	11.1	7.8	2.4
Phillippines	5-9	58.1	2.8	0.0	3.6	0.0	2.0	22.2	2.0	2.0	3.6	3.6
Phillippines	10-14	59.5	4.7	0.5	4.2	0.5	1.7	20.4	1.3	1.4	3.3	2.6
Phillippines	15-17	46.1	5.9	0.5	5.3	2.7	3.2	16.2	3.9	2.2	8.6	5.1
Phillippines	5-17	53.3	5.2	0.4	4.6	1.4	2.4	18.6	2.5	1.8	5.7	3.7
Sri Lanka	5-17	63.6		1.3	14.8	2.0		10.8	0.9	5.4		1.1
Tanzania	5-17	79.9	0.1		0.3	0.0		2.2	0.0		17.4	0.0
Tanzania	5-9	71.3	0.0		0.1	0.0		0.8			27.8	0.0
Tanzania	10-14	81.0	0.0		0.2	0.0		1.9	0.0		16.8	0.0
Tanzania	15-17	86.9	0.2		0.7	0.1		4.2	0.1		7.8	0.0
Turkey	6-17	57.6			21.8			10.2		10.4		0.0
Ukraine	5-17	43.0		8.0		9.0		21.0		19.0		0.0
Zambia	5-9	91.3	0.9	0.0	0.2	0.2	0.0	2.2	0.0		3.8	1.5
Zambia	10-14	92.9	0.5	0.0	0.4	0.1	0.1	3.3	0.0		2.1	0.7
Zambia	15-17	73.3	1.8	0.1	2.0	0.4	0.5	10.7	1.0		8.7	1.4
Zimbabwe	5-17	82.4		0.3	1.9	1.7		2.1	0.2		10.8	0.6

Age categories determined by availability in report. Industry groupings determined by availability in report. A missing reflects that industry was not available in report.
Sources: Bangladesh - Bangladesh Bureau of Statistics (2003); Cambodia - National Institute of Statistics (2002); Costa Rica - Trejos and Pisoni (2003); El Salvador - ILO-IPEC (2004); Ethiopia - Central Statistical Authority (2003); Ghana - Ghana Statistical Service (2003); Honduras - Cruz (2002); Kenya - Central Bureau of Statistics (2001); Namibia - Ministry of Labour (2000); Nicaragua - Silva (2003); Pakistan - Federal Bureau of Statistics (1996); Panama - Cornejo, Rodriguez, Adames, and Castillo (2003); Phillippines - National Statistics Office (2003); Sri Lanka - Department of Census and Statistics (1999); Tanzania - National Bureau of Statisistics (2001); Turkey - State Institue of Statistics (1999); Ukraine - State Statistics Committee (1999); Zambia - Central Statistical Office (1999); Zimbabwe - Ministry of Public Service, Labour and Social Welfare (1999).

Source: Edmonds (2007)

Table 6 shows that in most of the countries majority of working children were engaged in agriculture and forestry. In the countries covered, at least 43 percent of working children were engaged in agriculture. The other important sectors with significant share of working children were trade and manufacturing.

Intensity of Work

Table 7 shows average number of hours worked in various activities by working children.

Table 7

Total Hours Worked in Last Week, Conditional on Activity, for 124 Million Children 5–14 from 36 Countries in 2000

	All children	Age		Gender		Location	
	5–14	5–9	10–14	Male	Female	Urban	Rural
Market work (MAR)	26.1	21.1	28.5	25.3	27.1	21.7	28.3
Paid	30.9	21.0	33.5	30.0	32.2	27.3	33.6
Unpaid	26.9	20.9	30.6	26.3	27.4	20.6	29.6
Family	27.2	22.6	29.2	26.3	28.3	22.3	29.2
Domestic work (DOM)	15.8	11.6	18.6	15.4	16.1	12.4	18.5
Any work (MAR + DOM)	16.1	11.9	18.9	15.9	16.2	12.8	18.6
Schooling status							
Not attend school	11.6	6.3	23.7	10.3	12.9	8.0	13.4
Attends school	10.7	6.4	14.1	10.3	11.1	8.2	13.3

Notes: Each cell contains total hours worked (in both market and domestic work) in the last week for individuals that report participating in the indicated (row) activity. Children may participate in multiple activities. See Table 1 for row descriptions. *Attends school* indicates that the child attended school during the last year.

Source: Edmonds and Pavcknik (2005)

Each number in the table represents number of hours worked by children engaged in particular category of activity. The second column shows that children of age group 5-14 engaged in market work on average worked for 26.1 hours in a week. On the other hand, children engaged in domestic work on average worked for 15.8 hours in a week. On average children engaged in any activity worked for 16.1 hours in a week. Table shows that average number of hours worked increases with age. Also girls on average worked for higher number of hours than boys. Also working children in rural areas work for larger number of hours per week than working children in urban areas.

## 4. Child Labor and Schooling

The issue of relationship between child labor and acquisition of human capital and more particularly participation in schooling has received a great deal of attention. The main focus has been on whether child labor adversely affects school attendance of children their scholastic performance and the acquisition of (formal) human capital.

The first column of table 4 gives the school attendance rate of children in age group 5-14 for various countries. It shows that 89.2 percent of children in age group 5-14 attended school. This suggests that overwhelming majority of working children attend school.

Figure 6 below depicts the relationship between school attendance rate and total hours worked for children 10-14. It shows a negative relationship between school attendance rate and total number of hours worked. However, school attendance rate falls significantly only for children working 30 hours and more.

Figure 6

School Attendance and Total Hours Worked, Children 10-14
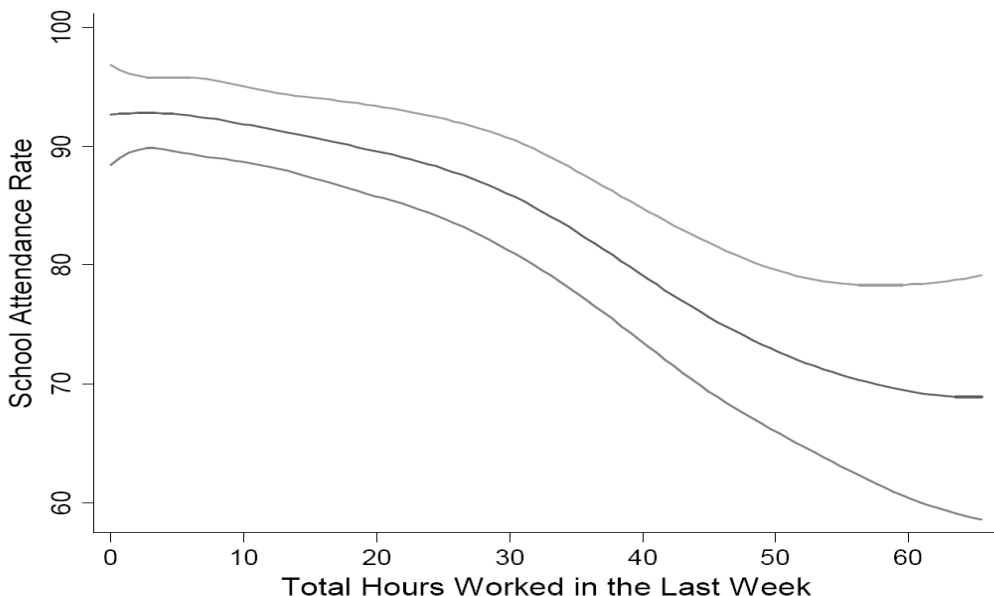
Source: author's calculations from the pooled MICS data. Each child in the MICS countries is weighted to reflect the number of individuals they represent. Hence, the picture is representative for the pooled populations of the MICS countries. The pictured curve is from a nonparametric regression: an indicator for whether a child attends school is regressed on total hours, total hours squared, and a series of the form sin(j*total hours) and cos(j*total hours) j=1,2,3 where total hours is transformed to range between 0 and 2*π. Fitted values (*100) and the 95 percent confidence interval are pictured. Only fitted values between 0 and 2.5 standard deviations above the mean are pictured.

Source: Edmonds (2007)

The human capital acquisition of children depends not only on school attendance, but also on time devoted on studying in school and outside. A child who works for long hours may not be able to devote sufficient time and attention to studying. Table 3 shows that the working children who do not attend school on average work for larger number of hours compared to working children who do attend school. Working children 5-14 who did not attend school on average worked for 11.6 hours per week. On the other hand, working children who attended school on average worked for 10.7 hours. This difference is much larger for working children 10-14. The working children 10-14 who did not attend school on average worked for 23.7 hours in a week compared to 14.1 hours for working children who attended school.   Thus, data suggests that child labor may adversely affect the (formal) human capital acquisition by children.

5. Determinants of Child Labor

Economic literature has identified a large number of determinants of child labor. Basu (1999) and Edmonds (2007) provide a comprehensive summery of this literature.

Low Income and Poverty

Many explanations of child labor are based on the prevalence of poverty and suggest that increased income may reduce the existence of child labor. Edmonds and Pavcnik (2005) outline four ways improvements in family incomes can potentially affect child labor. Firstly, child labor may be a bad in the family's welfare function, so as incomes improve, parents will choose to have their children work less. Secondly, with diminishing marginal utility of income, the value of the marginal contribution made by the child will fall. This will induce parents to choose less amount of child labor. Thirdly, higher family incomes may facilitate the purchase of substitutes to child labor e.g. agricultural machinery, which would lower the return to child labor within the household. Fourthly, children's productivity in schooling may increase if increased income allows the purchase of more and better quality educational materials.

Access to Credit

Children may be sent to work, because their family needs their contribution of income. If parents would prefer their children did not work, but cannot manage this in their economic environment, then credit may greatly affect children's outcomes. This situation could arise for many reasons. A family's permanent income may be too low, so they may have few assets to borrow against. Alternatively, there may be a lack of institutions that allow families to borrow. One situation where access to credit could be

particularly useful is when there is a temporary shortfall in income, e.g. due to crop failure or the household head being made unemployed.

Return on Human Capital and Schooling

If one takes a simple cost-benefit approach to a parent's decision over their children's time allocation, then assuming a school of the right grade exists and education and work are the two possible uses of a children's time, then the decision can be simply described as follows. Attending school imposes direct costs on the family, for example, transportation costs to get to school and the purchase of educational materials. These direct costs will depend largely upon how close the nearest school is and the infrastructure or transport available. There are also indirect costs of schooling through the child's foregone wage income or use by the family. The indirect costs could depend upon a number of factors. For example they can depend on: the child's ability; the job opportunities available to them in the market; or their use on the family farm which could depend upon land size and crop seasonality amongst other things.

The benefits on the other hand can be seen as the return to schooling. This can differ according to the level of education undertaken; the quality of the school or the teachers; what is taught; and the impact on job opportunities or marriage opportunities as a result. In summary, there are a wide number of factors that are likely to be important. In particular children are more likely to work if there is not a school nearby, or the wage differential for educated compared to less well educated children is low. If the return to schooling is very low then there will be very little incentive to send children to school.

International Trade

International trade can also affect the incidence of child labor. One common argument is that opening of trade (or globalization) increases the demand for goods and services produced by child labor. Thus, opening of trade is likely to increase the incidence of child labor. This argument underlies the demand for ban on trade or consumer boycott of goods produced by child labor. Consumers who do not wish to consume goods produced by child labor can do so by buying ``child labor free goods" (e.g. FIFA approved soccer balls, RUGMARK approved hand knotted rugs and carpets). The counter argument is that opening of trade increases income, which reduces supply of child labor.

Social Norms

Social norms may underlie many of these factors and so the effects of particular features will differ across countries and even across regions of the same country. In some areas there may be a stigma attached to having children work. Basu (1999) suggests this stigma can reduce the parent's utility when their child works. However, the

loss of utility will be smaller if many other children work, since the stigma cost is lower. This, Basu (1999) suggests, can yield the result that if all parents send their child to work then it is worth-while for each parent to send their child to work; and if no one sends their child to work each parent may not find it worth-while to send their child to work, as the stigma cost is so high.

Importantly, there are a number of gender issues which can come into play. Traditional gender roles may, for example, make it more likely that girls will be depended upon for undertaking domestic chores or providing childcare for younger siblings. If there is gender discrimination in the labor market, so earnings for females are lower, then this can have two affects: it reduces the opportunity cost of schooling a girl now, but it also reduces the return to their education. The balance of these effects will depend upon the degree of discrimination in wages for children and adults. Cultural practices over marriage may be significant too. If a girl joins her husband's family upon marriage then her own parents may find little return to their investment in her education.

High Fertility and Mortality Rates

High fertility and mortality of children can also lead to higher incidence of child labor. This is particularly true in countries where parents rely on their children to support them when they are old. High mortality rate among children may induce parents to have large number of children in order to ensure that children survive until adulthood to support them in old age. The large number of children born can stretch a family's resources further and so make it more likely some of the children will need to work.

Labor Market Imperfections

Labor market imperfections such as oligospony or monopsony in the labor market which reduces wage earnings can also increase child labor due to two reasons. Firstly, low wage earnings reduce family income. Secondly, it reduces the return from schooling. Both of them will lead to higher child labor. Labor market imperfections can also lead to gender differentials in child labor. It has been observed that there is gender bias in labor market against women. They earn less than male workers for similar work. Also, employment opportunities outside home for women in many developing countries are quite limited. Such biases may lead to girl children working longer hours, particularly in domestic work.

6. Empirical Evidence

Low Income and Poverty

The cross country data on per-capita income and the incidence of child labor shows a strong negative association (Figure 1). Figure show that the incidence of child labor in countries with real per-capita income (base year 2000) of $5000 and more is very low. In countries with per-capita real income of $8500 and more the incidence of child labor is negligible.

Beegle et. al. (2003) studied the effects of unexpected loss in harvest on child labor in Tanzania. They find that children tend to work when households experience an unexpectedly poor harvest and that children stop working when households recover from the bad harvest. Yang (2004) studied the effects of remittances on child labor in families affected by 1997 Asian financial crisis in Philippines. He finds that child labor is significantly lower in households receiving remittances. Edmonds (2005) studied the effects of rising living standards on child labor in Vietnam for period 1993-98. He finds about 40% of decline in the incidence of child labor in this period can be attributed to rising living standards.

International Trade

As discussed earlier, international trade can have conflicting effects on the incidence of child labor. There are number of empirical studies which examine the effect of trade liberalization on child labor (Edmond and Pavcnik 2005b, 2006a,b). They find that trade liberalization has strong negative impact on the incidence of child labor. Empirical evidence suggests that trade liberalization has beneficial effect on child labor on average.

Credit Market Imperfections

As already discussed, temporary fall in income due to unexpected loss in harvest or financial crisis increases the incidence of child labor. This suggests that better access to credit market which will allow families to tie over temporary setbacks income or wealth can reduce the incidence of child labor. Also, imperfect credit market is one of the most important causes of low growth and income. Improvement in the credit market can increase growth rate and income and thereby reduce the incidence of child labor.

One of the worst manifestations of lack of access to credit is children in bondage. The United Nations (1998) estimates that some 20 million people around the world are held in bondage. The ILO (2002) estimates that nearly one-third of people held in bondage are children. The main cause of the prevalence of bonded laborers is the lack of

accessibility to credit market. Poor households, who do not possess any productive asset which they can pledge as collateral, are forced to pledge their labor as collateral to moneylenders or landlords. Bonded workers are not free to negotiate their employment contracts and wages. Thus, once a worker becomes bonded, it becomes very difficult to him/her to exit debt bondage. Improving the credit market can greatly reduce the incidence of such exploitative institutions.

Educational Reforms

There is a great deal of evidence that increasing the accessibility to schools and improving their quality significantly reduce the incidence of child labor. Foster and Rosenzweig (2004) find that the school construction accompanying the Green Revolution in India significantly increased school attendance rate and reduced child labor. There is also a great deal of evidence which suggests that programs such as cash transfer (or scholarships) to poor students conditional on attending school, mid day meal scheme for children in schools etc. have large positive impact on school attendance and negative effect on child labor.

7. Policy implications

Child labor is quite pervasive in low income countries. It is largely the manifestation of poverty and weak economic institutions. The best way to reduce the incidence of child labor is to increase the living standards of people and reduce poverty i.e. economic development. However, we have seen that economic development is a long drawn process. One can use many policies to mitigate the incidence of child labor.

Firstly, targeted income transfers to poor households can reduce child labor. This is particularly true when children are forced to work due to unexpected income loss of families. Secondly, one can increase the attractiveness of attending school by giving cash transfers or scholarship to poor children. Thirdly, expanding number of schools and improving their quality are going to increase school attendance and reduce child labor. Fourthly, reducing the cost of attending school by subsidizing the cost of text book or transportation etc. is also likely to reduce child labor. Fifthly, improving the coverage and quality of credit market can also reduce child labor. Finally, trade liberalization can reduce child labor.

Outright banning child labor or compulsory schooling may not be effective in reducing child labor for variety of reasons. Firstly, enforcement of such laws in developing countries may be difficult. Most developing countries lack good legal and administrative

system and resources to enforce such laws. In the absence of good and efficient legal and administrative system such laws can in fact become a source of corruption and harassment of poor households. Secondly, monitoring child labor particularly in domestic work is very difficult. If child labor is banned in certain activities, children may start working in other activities where earnings and working conditions may be even worse. Thirdly, any loss of family income may lead to higher child labor rather than lower child labor.

It is not to argue that worst forms of child labor such as child trafficking and prostitution should not be banned. However, banning of all types of child labor without proper alternatives in place is likely to be ineffective and counter-productive.

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