

# Supply-Side Determinants of Child Labor: Evidence from Urban Bangladesh

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## Abstract

The paper reinvestigates the supply-side determinants of child labor relying on field survey data conducted in 2012 within urban area of Dhaka. To estimate the determinants, a logit regression model has incorporated. The results show that per capita income of household, mother's income, parental education level adversely affect the likelihood of child working while children's own income, adult male unemployment level and female household head, and farm holding positively influence the likelihood. Nevertheless, adult female unemployment level diminishes the probability of child working of girls. However, it is evident that banning child labor alone will not guarantee abolishing child labor in developing countries like Bangladesh. Moreover, it is essential to weaken the 'push' factors that force the child to economic activities.

**Keywords:** Child Labor, Logit Model, Marginal Effect, Bangladesh

**JEL Classification:** J13, C35

## 1. Introduction

Since child labor is usually exploitive in nature, detrimental to health and proper development, eliminating child labor is essential for sustainable development.<sup>1</sup> The existence of child labor causes the labor market imperfection through deteriorating the bargaining power of adult labor (Basu 1998, 2000). The child labor problem appears in severe form in developing countries.<sup>2</sup> Therefore, it is a crucial task of finding out the determinants of child labor and its possible way out to eliminate child labor.

The demand-side and the supply-side factors collectively determine the size of child labor and its patterns. The demand-side factors appear from employers' decision-making options, which are influenced by the available technology, relative wage rate of child labor, rules and regulation of the countries. Conversely, the supply-side factors are reflected by the characteristics of children and their households, local customs and traditions and other socioeconomic factors (Kis-Katos and Schulze 2011, Rahman 2005). Employers like to occupy child labor, since they are comparatively cheaper, more amenable and obedient than adults. Even in some particular industries, for instance, in hand-knotting carpet producing industry, producers think that child labor is indispensable (Rahman *et al.* 1999:994, ILO and IPU 2002:27). Conversely, they may be reluctant to employ such type of labor if nationally and internationally people ban their products and boycott them for the use of child labor. However, subsequently, what will be the ultimate effect on the children who are losing their jobs? It may force the children more hazardous works, for instance, prostitution or underground activities.<sup>3</sup> Basu and Van (1998) considered children's leisure or non-work as luxurious goods in the household's consumption basket in the sense that a poor household cannot afford children's leisure until their income increases sufficiently. Such consequences attract policymakers undertaking robust actions that may perpetually resolve the supply-side determinants. Subsequently, the supply-side factors are imperative in nature to abolish child labor without any sort of unfavorable shock.

The framework of this paper is as follows: after inaugurating the notion of child labor and its influential factors in the first section, the second section represents literature review and the third section provides data source and description of data. Child labor scenario is portrayed in the fourth section. The methodology and empirical results are discussed in the fifth and sixth sections. Finally, the seventh section explores summery of the findings and policy recommendations.

## 2. Literature Review

After the implementation of Child Labor Deterrence Act (Harkin's Bill 1993) in 1995, child labor phenomenon

has concentrated attention of academicians and policy makers as well.<sup>4</sup> Basu and Van (1998) developed a theoretical framework where they postulated that a poor household could not afford to consume the luxurious good of child's leisure. Rammohan (2000) also developed a theoretical model postulating that an increment of child wage rate diminishes schooling investments and increases higher fertility levels. Basu and Ray (2002), by using a collective model of the household, theoretically prove that as woman's power rises, child labor will initially fall but eventually rise. They confirm that a household with a balanced power between husband and wife is least likely to employ their children in work. They found strong empirical support using data from Nepal.

However, Wiener (1991) argues that cultural attitudes are the key determinants of child labor rather than poverty. Grootaert (1999), by using the Côte d'Ivoire data, separately examined the determinants of child labor in urban and rural areas. The author found that financial constraints affecting the poorest households were among most important determinants of child labor while households' poverty rarely influenced the choice to work in rural areas. Ray (2000a, b) examined that there is an inverse relationship between family income and children's work in Peru and Pakistan. He found a significant positive relationship between children's working hours and income poverty in Pakistan but not in Peru. Nielsen and Dubey (2002), using data from 1983 to 1999-2000, found that household income and parental education influenced two-thirds of increase in school enrolment in India. Edmunds (2005) found empirical evidence from Vietnam that eighty percent of reduction of child labor can be explained by expansion of per capita expenditure adequately.

A large number of studies have also been commenced on the issue of child labor in Bangladesh. Rahman *et al.* (1999) made an assessment on the ultimate effect of Harkin's Bill on Bangladesh. They concluded that only legislation alone was not sufficient to determine the child labor situation in Bangladesh. They advocated socioeconomic development and cultural change to eliminate child working. Delap (2001) found that socio-cultural factors are more influential than economic factors. Nevertheless, Amin *et al.* (2004), using the 1995-96 Household Expenditure Survey (HES) of Bangladesh data, found that household poverty is a key factor in children's labor force participating decision. They separately examined the determinants of child labor based on different demographic group. Salmon (2005), using the Bangladesh Labour Force Survey (LFS) data published in 2000, supported the notion that children are the last economic resource of the household. Rahman (2005) provided evidence that poverty has a significant positive impact on child labor while father's education has an inverse impact. She also found the type of parent's occupation and ownership pattern influenced child labor working decision. Kabeer and Mahmud (2005) argued that usually once a child had dropped out of school for working; it became difficult for him to return school. They argued that banning child labor would not be an effective measure for ensuring universal education. By using multinomial logit model Khanam (2006) found that parental education had a significant negative impact on the likelihood of child working. However, the present study attempts to encompass earlier research experiences, incorporates other relevant determinants of child labor, and uses recent data, which may contribute to effective policy formulation.

### 3. Data Source and Data Description

To find out the supply-side determinants of child labor, a household survey was conducted in the slum areas of Dhaka, particularly, in Agargoan, Kollyanpur, Mirpur, and Savar from March to June 2012. The households were selected in random basis. Data were collected using a structured questionnaire. From the randomly chosen households, only children age 5-17 years are selected for this study. Therefore, sample size was 1676 children. Among them 60.86 percent are male and 53.22 percent are involved in economic activities. Due to financial and time constraints, it was not possible to cover the survey throughout the country. Table 1 (in the Appendix) summaries the sample characteristics of the selected variables.

### 4. An Overview of Child Labor Scenario

#### 4.1 Historical Trend of Child Labor in Bangladesh: 1983-84 to 2005-06

This section presents the trend of children's participation in economic activities in Bangladesh from 1984 to 2006. Children in the age group 5-14 years are selected for comparative analysis (Table 2 in the Appendix).

Although children participation rate in economic activities declined to some extent in 1984-1985, gender wise change was less than one percent compared to previous fiscal year. Although, the absolute number of economically active children augmented in fiscal year 1995-1996, after that particular period, the participation rate and its absolute value declined. It should highlight that the declining trends were not identical for both boys and girls. It declined faster for girls compare to boys.

#### 4.2 Reasons behind Drop out from Attending School and Involvement in Economic Activities

##### 4.2.1 Why Children Drop out from Attending School

A large number of children aged between 5 to 17 years are either never attend school or do not continue study, while they involve in economic activities or enjoy leisure. Although, according to the National Education Policy 2010, education is free of charge and obligatory up to class eight, it has been found that more than one million children have never been to school. Many children terminate schooling before completing their primary education and begin to work.

The present household survey has found some reasons that force the children dropping out from attending school (Table 3 in the Appendix). Among the selected children, 33.6 percent said that they left school since they could not meet the educational expenses. Although many formal as well as informal schools in Bangladesh provide education free of cost, the households face a significant level of opportunity cost. Secondly, unattractive school infrastructure, fear of teacher's punishment, low quality teaching methodology impeded children's attraction in study. Because of insufficient household income, 13 percent children left school and involved in work. Migrations from village to urban area and from one slum to another hindered 8.7 percent children to continue study. Due to parent's disinterest 7.0 percent students dropped out from school. Most of the uneducated and low-educated parents think that education is good but not essential. However, 6.5 percent dropped out from school because of failure in the examinations. Another 4.1 percent dropped out from schooling since their institute was far away from residence.

##### 4.2.2 Why Children Involve in Economic Activities?

There are some 'pull' factors as well as 'push' factors behind the involvement of children in economic activities. Generally, the first one represents demand-side determinants whilst the later represents supply-side determinants that are main concern of the paper.

Table 4 ( in the Appendix) presents the reasons why children involved in labor force. In the field survey, 32.2 percent children said that they involved in labor force for survival of their household. Another 15.5 percent said that they involved in labor force due to parent's illness or unable to work or unemployment. 14.5 percent children said that they involved in labor force to help their family businesses that are specially relied on family labor. 9.5 percent said that they are forced to involve in income generating activities to repay their parent's debt. 12 percent said that they involved in working to accrue their job oriented knowledge and expertise. 4.1 percent said that since they have no guardian or parents, they involved in labor force for their survival.

## 5. Methodology

To Estimate the supply side determinants of child labor, the following function is considered:

$p(\text{work}) = f(\text{Age, Child income, Siblings, Sex of HHH, Age of HHH, Per capita income, HH own farm, HH own nonfarm, NGO, Male unemployed, Female unemployed, Father's education, Father's income, Father involved in farm activities, Mother's education, Mother's income})$

Due to binary dependent variable, the logistic regression technique is incorporated in the study. To estimate the coefficient values of the logistic regression model, the subsequent steps are followed:

For simplicity, suppose, the dependent variable is  $Y_i$  which can be either 0 or 1, where  $i = 1, 2, 3, \dots, N$ . The regressor  $X_i$  is a  $1 \times k$  row of observed regressor values at the  $i^{\text{th}}$  observation point, and  $\beta$  is a  $k \times 1$  column of parameters. Therefore, the logit model may be formulated as follows:

$$\ln\left(\frac{P_i}{1 - P_i}\right) = X_i\beta$$

Or,  $P_i = \text{Pr}[Y_i = 1|X_i] = E[Y_i|X_i]$  (1)

Now it is need to convert the model into natural logarithm function and incorporate a scalar disturbance  $\varepsilon_i$  in equation (1) to develop an econometric model:

$$Y_i = P_i + \varepsilon_i = \frac{e^{X_i\beta}}{1 + e^{X_i\beta}} + \varepsilon_i$$
 (2)

Usually, such non-linear model is estimated by maximum likelihood (ML) approach i.e.,

$$P = F(X\hat{\beta}) = \frac{e^{X\hat{\beta}}}{1 + e^{X\hat{\beta}}}$$
 (3)

Since equation (3) presents a cumulative density function for the logit model, the estimated value  $\hat{Y}_i = \hat{P}_i$  must fall within the range (0, 1), while the conditional success probability will be  $Pr[Y = 1|X]$ .

However, the value of estimated coefficient of the logit model is not sufficient to measure the influence of a particular regressor on the conditional success probability. To overcome this shortcoming, marginal effect of discrete change of independent variable ( $X_d$ ) is very useful rather than continuous change of independent variable ( $X_c$ ). Ceteris paribus, impact can be found from the marginal effect of discrete change while all other regressors ( $X_d$ ) remain constant at their reference points.

The marginal effect of a discrete change ( $X_d$ ) is estimated in the following way:

$$\frac{dP(Y = 1|X)}{dX_d} = P(Y = 1|X_{-d}, X_d = 1) - P(Y = 1|X_{-d}, X_d = 0)$$

Contrasting the discrete change, the marginal effect of a continuous change of  $X_c$  is estimated using partial derivative formula, i.e.,

$$\frac{\partial P(Y=1|X)}{\partial X_c} = \frac{e^{X\beta}}{(1+e^{X\beta})^2} = P(1 - P)\hat{\beta}_c$$

Where  $\hat{\beta}_c$  is the estimated coefficient of  $X_c$ .

## 6. Empirical Results

The empirical results of the logistic regression for both demographic groups, boys and girls are compiled in Tables 5, 6 and 7 (in the Appendix) respectively, which presents the logit coefficients, its standard errors, odd ratio, and the marginal effects of discrete as well as continuous change of regressors at their margin. Here, only the values of marginal effect of discrete change are interpreted. In an analogous manner, the values of marginal effect of continuous change can be interpreted. However, to test the overall statistical reliability, log likelihood, chi-square test and pseudo  $R^2$  have also been incorporated.

### 6.1 Child Characteristics

The coefficients of children's age are significant in all three cases. Result shows that older children are more likely to work than younger children are. One possible explanation is that as year of schooling increases, educational expenses grow faster and poor household cannot afford such additional expenses. Another explanation is that, since most often, child labors are involved in wage earning activities; older children are likely to get higher wages. Consequently, both implicit and explicit costs of schooling increases repeatedly along with age. However, the marginal effect shows that for each additional year, the probability of child labor is higher for boys. Child's income has a positive significant impact on the likelihood of child labor. The reason is that child's income truly reflects the opportunity cost of schooling.

### 6.2 Household Characteristics

Apparently, it seems to be true that large number of siblings has a positive influence on the probability of child labor; but it is case sensitive. A large number of prior empirical studies do not support the hypothesis. In case of both demographic groups and girls, number of siblings has negative significant impact on the likelihood of child work. Empirical results show that each additional sibling decreases the probability 0.14 for all samples and 0.06 particularly for girls. One explanation is that large number of girls is usually involved in home care services. Hence, as number of sibling's increases, it generates some prospect of sharing domestic work and enhances the likelihood of attending school.

Sex of the household head is a crucial determinant of child labor supply function. Most often, female household head represents higher dependence ratio. The presence of a female household head increases the probability of working in all three cases. The marginal effect is larger for girls than boys. Age of household head is not a significant determinant. Although the coefficient is statistically significant only for boys, its marginal effect is almost zero.

Per capita income of household is an influential determinant of child labor decision. The variable is statistically as well as theoretically significant in all three cases. When per capita income increases by one thousand taka, the probability of child labor decreases 0.35, 0.10 and 0.14 for all children, boys and girls respectively. This is because poor households have limited capacity or even no capacity at all for insuring themselves when their

economic condition deteriorated. Most often, children's involvement in economic activities are essential for survival of their households.

It is expected that a household, which owns a farm and/or nonfarm enterprise, have absorbing power of adverse income shock. They are not supposed to be more reliant on their child's income for survival. However, the logistic regression results are contrary to the hypothesis. Household own farm is statistically significant and the ownership positively influences the probability of being child labor in all three cases. It implies a wealth paradox effect for farm holding.<sup>5</sup> Since, according to the project area, most of the owners own small farm, they operate it occupying household members. Nevertheless, the ownership of nonfarm enterprise is not statistically significant.

The involvement with NGOs has no significant impact on child labor decision. However, adult male unemployment positively influences the likelihood of child labor. For each additional unemployed male member the likelihood of working increases 0.22 0.03 and 0.09 for full sample, boys and girls respectively. On the contrary, there is a significant positive relationship between unemployed adult female member and the probability of working for girls. The argument is that as the number of unemployed female member increases, girls of that household get rid of the pressure of domestic activities.

### 6.3 Parents Characteristics

Parental education is statistically significant and inversely influences working decision of children in all three cases. However although coefficient of mother's income is statistically significant and decreases the likelihood of working, the coefficient of father's income is not statistically significant. Father involves in farm activities has no significant influence on child labor decision.

## 7. Summery, Conclusion and Policy Recommendations

In this paper, a logistic regression model is developed by using field survey data conducted in the slum areas. The paper separately estimates the supply-side determinants of child labor for boys, girls, and both demographic groups together. Empirical evidence shows that relatively older children are more likely to involve in economic activities instead of attending school than younger children. Therefore, stipend provided by the government should be gradually enhanced in significant volume at each higher level of schooling to reduce the drop out tendency. Child's own wage rate or income largely increases the likelihood of child working. It is considered as a 'pull' factors. Rammohan (2000) recommended that a reduction of child wage rate along with compensation for household could be an effective measure to diminish child labor and fertility.

The results support that per capita income of household is a key determinant of child labor decision making function. Minimum wage law may be implemented so that employer likes to occupy adult labor instead of child labor at higher wage. Such initiative will increase household's income as well. A wealth paradox effect has emerged for farm holding in the paper i.e., a positive relationship between household's farm holding and the probability of child labor. Sex of household head is also a dominant factor of child labor supply function. Number of sibling declines the probability of child working. Adult male unemployment level augments the likelihood of being child labor. However, in case of girls, there is an inverse relationship between female unemployment and the likelihood of child working.

Mother's income also declines the likelihood of child working. Therefore, income-generating work should be enlarged for women. Besides, parental education largely influences child labor supply decision. Children do not study since their parents are illiterate. Adult Literacy and Non Formal Education programs should be widely operated so that parents' attitude improves toward education and it promotes the probability of children's attendance in school.

Consequently, the paper postulates that banning child labor itself will not ensure universal education in developing countries like Bangladesh. Since, there is a number of 'push' factors those force children to economic activities, the government and other development agencies should undertake appropriate initiatives to eradicate child labor from the economy.

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**Table 1. Definitions, Means and Standard Deviations of Variables**

Name of the Variables	Definitions	Total (N=1676)	Boys (N=1020)	Girls (N=656)
<b>Dependent Variable</b>				
Child labor	1 if child labor, 0 otherwise	0.53 (0.50)	0.57 (0.50)	0.47 (0.50)
<b>Independent Variables</b>				
<i>Child's Characteristics</i>				
Age	Age of child labor in year	12.37 (2.73)	12.95 (2.10)	11.46 (3.29)
Child's income	Child's monthly income in thousands BDT	1.39 (1.24)	1.42 (1.26)	1.35 (1.22)
<i>Household Characteristics</i>				
Siblings	No. of siblings of the child	3.54 (1.39)	3.50 (1.41)	3.61 (1.36)
Sex of HHH	1 if household head is female, 0 otherwise	0.15 (0.36)	0.12 (0.32)	0.20 (0.40)
Age of HHH	Age of household head in year	48.41 (8.03)	48.11 (8.01)	48.87 (8.05)
Per capita income	Total household income in thousand BDT divided by number of household members	2.51 (1.31)	2.17 (1.20)	3.04 (1.29)
HH own farm	1 if household owns farm, 0 otherwise	0.21 (0.41)	0.20 (0.40)	0.22 (0.42)
HH own nonfarm	1 if household owns nonfarm enterprise, 0 otherwise	0.03 (0.17)	0.03 (0.17)	0.03 (0.17)
NGO	1 if any household member involved with NGO, 0 otherwise	0.27 (0.45)	0.30 (0.46)	0.23 (0.42)
Male unemployed	No. of male unemployed in household	0.45 (0.75)	0.32 (0.55)	0.66 (0.94)
Female unemployed	No. of female unemployed in household	0.28 (0.52)	0.17 (0.38)	0.45 (0.65)
<i>Parents Characteristics</i>				
Father's education	Schooling years of father	3.47 (3.68)	3.60 (3.50)	3.27 (3.90)
Father's income	Monthly father income in thousand BDT	10.36 (5.72)	8.57 (5.11)	13.15 (5.48)
Father involved in farm	1 if father involved in farm activities, 0 otherwise	0.11 (0.32)	0.14 (0.35)	0.07 (0.26)
Mother's education	Schooling years of mother	2.63 (3.20)	2.93 (2.98)	2.17 (3.38)
Mother's income	Mother's monthly income in thousand BDT	1.44 (2.68)	1.39 (2.57)	1.52 (2.85)

**Table 2. Economic Participation Rates of Children Age 5-14 Years by Gender from 1983-84 to 2005-06**

Economically Active Children (in Thousands)				Child Labor Force Participation Rate (in Percentage)		
Year	Total	Male	Female	Total	Male	Female
1983-84*	3782	3104	674	15.9	21.8	4.9
1984-85*	3774	3098	676	13.3	21.5	4.7
1995-96**	6455	3856	2599	18.7	21.6	15.7
2002-03***	4692	3372	1319	13.4	18.5	7.8
2005-06*	3717	2829	888	10.7	15.0	4.9

Note: \*, \*\*, and \*\*\* indicate the data sources of Labor Force Survey, Child Labor Survey and National Child Labor Survey respectively which were published by Bangladesh Bureau of Statistics.

**Table 3. Reasons for Drop out from Attending School**

Cause	Percent
Could not Meet Educational Expenses	33.6
Personal Disinterest	23.7
Involvement in Working Activities	13.0
Unstable Residence	8.7
Parent's Disinterest	7.0
Failure in the Examination	6.5
Institute far away	4.1
Others	3.4
Total	100.0

Source: Authors' Calculation from Field Survey, 2012.

**Table 4. Why Children Involve in Labor Force?**

Cause	Percent
For Survival of the Household	32.2
Due to Parent's Illness or Unable to Work	15.5
To Help Family Business	14.5
Due to Parent's Debt	9.5
To Acquire Skill	12.0
No Guardian or Parents	4.1
Others	12.2
Total	100.0

Source: Authors' Calculation from Field Survey, 2012.



**Table 5. Logistic Regression Result of Full Sample**

Variables	Both Demographic Groups				
	Logit Coefficient	Standard Error	Odd Ratio	$\frac{\partial P(Y = 1 X)}{\partial X_c}$	$\frac{dP(Y = 1 X)}{dX_d}$
<i>Child Characteristics</i>					
Age	0.69***	0.15	1.99	0.17	0.17
Child's income	4.95***	0.55	141.13	1.24	1.23
<i>Household Characteristics</i>					
Siblings	-0.58**	0.25	0.56	-0.15	-0.14
Sex of HHH	3.63***	0.98	37.84	0.91	0.56
Age of HHH	-0.03	0.03	0.97	-0.01	-0.01
Per capita income	-1.42**	0.58	0.24	-0.36	-0.35
HH own farm	3.17***	0.85	23.82	0.79	0.56
HH own nonfarm	3.07	2.22	21.58	0.77	0.45
NGO	-0.04	0.52	0.96	-0.01	-0.01
Male unemployed	0.88***	0.32	2.40	0.22	0.22
Female unemployed	0.36	0.50	1.44	0.09	0.09
<i>Parents Characteristics</i>					
Father's education	-0.43**	0.09	0.65	-0.11	-0.11
Father's income	-0.15	0.11	0.86	-0.04	-0.04
Father involved in farm	0.51	0.79	1.67	0.13	0.12
Mother's education	-0.66***	0.11	0.52	-0.16	-0.16
Mother's income	-0.88***	0.18	0.41	-0.22	-0.22
Intercept	-2.89	2.31			
Log likelihood	-69.53				
Chi-square	2172.57***				
Pseudo R <sup>2</sup>	0.94				

Note: \*\*\* Significant at 0.01 level, \*\* significant at 0.05 level, and \* significant at 0.10 level.

**Table 6. Logistic Regression Result of Boys**

Variables	Boys				
	Logit Coefficient	Standard Error	Odd Ratio	$\frac{\partial P(Y = 1 X)}{\partial X_c}$	$\frac{dP(Y = 1 X)}{dX_d}$
<i>Child Characteristics</i>					
Age	0.34*	0.24	1.41	0.20	0.20
Child's income	7.32***	1.44	1503.59	0.44	0.44
<i>Household Characteristics</i>					
Siblings	-0.35	0.47	0.71	-0.02	-0.02
Sex of HHH	6.80**	2.49	901.32	0.41	0.13
Age of HHH	-0.06*	0.05	0.94	-0.00	-0.00

**Table 6. Logistic Regression Result of Boys (Continued)**

Variables	Boys				
	Logit Coefficient	Standard Error	Odd Ratio	$\frac{\partial P(Y = 1 X)}{\partial X_c}$	$\frac{dP(Y = 1 X)}{dX_d}$
Per capita income	-1.72*	1.19	0.18	-0.10	-0.10
HH own farm	4.56*	2.58	95.65	0.27	0.15
HH own nonfarm	0.04	1.87	1.04	0.00	0.00
NGO	0.66	0.94	1.94	0.04	0.04
Male unemployed	0.47*	0.67	1.60	0.03	0.03
Female unemployed	-0.58	0.95	0.56	-0.03	-0.03
<i>Parents Characteristics</i>					
Father`s education	-0.49**	0.49	0.61	-0.03	-0.03
Father`s income	0.23	0.26	1.25	0.01	0.01
Father involved in farm	0.53	1.49	1.70	0.03	0.03
Mother`s education	-0.65**	0.23	0.52	-0.04	-0.04
Mother`s income	-1.17**	0.39	0.31	-0.07	-0.07
Intercept	-2.37	4.31			
Log likelihood	-26.89				
Chi-square	1338.16***				
Pseudo R <sup>2</sup>	0.96				

Note: \*\*\* Significant at 0.01 level, \*\* significant at 0.05 level, and \* significant at 0.10 level.

**Table 7. Logistic Regression of Girls**

Variables	Girls				
	Logit Coefficient	Standard Error	Odd Ratio	$\frac{\partial P(Y = 1 X)}{\partial X_c}$	$\frac{dP(Y = 1 X)}{dX_d}$
<i>Child Characteristics</i>					
Age	1.59***	0.45	4.88	0.05	0.07
Child`s income	5.00***	1.41	148.43	0.17	0.21
<i>Household Characteristics</i>					
Siblings	-1.39**	0.63	0.25	-0.05	-0.06
Sex of HHH	6.78**	2.25	881.27	0.23	0.90
Age of HHH	-0.05	0.07	0.95	-0.00	-0.00
Per capita income	-3.31**	1.53	0.04	-0.11	-0.14
HH own farm	4.54**	1.56	93.94	0.15	0.59
HH own nonfarm	7.25	315.03	1406.47	0.25	0.95
NGO	0.30	1.15	1.35	0.01	0.01
Male unemployed	2.03**	0.84	9.34	0.08	0.09
Female unemployed	-0.55*	1.12	0.58	-0.02	-0.02

**Table 7. Logistic Regression of Girls (Continued)**

Variables	Girls				
	Logit Coefficient	Standard Error	Odd Ratio	$\frac{\partial P(Y = 1 X)}{\partial X_c}$	$\frac{dP(Y = 1 X)}{dX_d}$
<i>Parent`s Characteristics</i>					
Father`s education	-0.61**	0.22	0.54	-0.02	-0.03
Father`s income	-0.17	0.25	1.19	-0.01	-0.01
Father involved in farm	-0.20	2.25	0.82	-0.01	-0.01
Mother`s education	-1.24***	0.34	0.29	-0.04	-0.05
Mother`s income	-0.75**	0.35	0.47	-0.03	-0.03
Intercept	-7.32	5.21			
Log likelihood	-19.05				
Chi-square	866.97***				
Pseudo R <sup>2</sup>	0.96				

Note: \*\*\* Significant at 0.01 level, \*\* significant at 0.05 level, and \* significant at 0.10 level.

### Notes

<sup>1</sup> According to ILO, 250 million children are working children in the world. Among them, 110 million children under age 15 years of age do hazardous work and some 73 million children are under the age of 10 years. Moreover, more than 20,000 children die in each year because of work-related accidents (Todaro and Smith 2009:379). In some cases, the hazardous working conditions also appear in family enterprises (ILO and IPU 2002:26).

<sup>2</sup> Abusing and exploiting child labor are more common phenomena in developing countries than in the developed ones. It includes, for instance, child slavery, exploiting children for begging, large scale sexual harassment, illicit activities and hazardous work in certain areas (Blyth 1990, ILO and IPU 2002:11).

<sup>3</sup>For details see Bachman (1995), Bissell and Sobhan (1996), and Wasserman (2000).

<sup>4</sup> In 1995, the U.S. Congress commenced the Child Labor Deterrence ACT (Harkin`s Bill 1993), which was presented by Senator Tom Harkin. Harkin`s bill proposed a ban on the import of product to US made with involvement of labor under the age of 15 years at any stage of production. The supporters of the bill in the U.S. expected that these children would return to school if they got relief from working activities. However, just after the introduction of the bill, garment employers in Bangladesh immediately fired more than 50,000 children from their factories, which was approximately 75 percent of all children in the industry. Afterward of the displacement, White (1996) found that none of the dismissed children had returned to school. UNICEF, NGOs, and ILO conducted a series of follow-up studies. They also found that the dismissed children were looking for or involved in such economic activities that were more hazardous and exploitive works than garment factories. Hence, the bill failed to attain its ultimate goal (Rahman *et al.* 1999, Pierik 2007).

<sup>5</sup> There are some theoretical and empirical supports to the results obtained in this paper e.g., wealth paradox effect, inverted-U hypothesis. For instance, see Bhalotra and Heady (2003), Basu, Das and Dutta (2009).

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