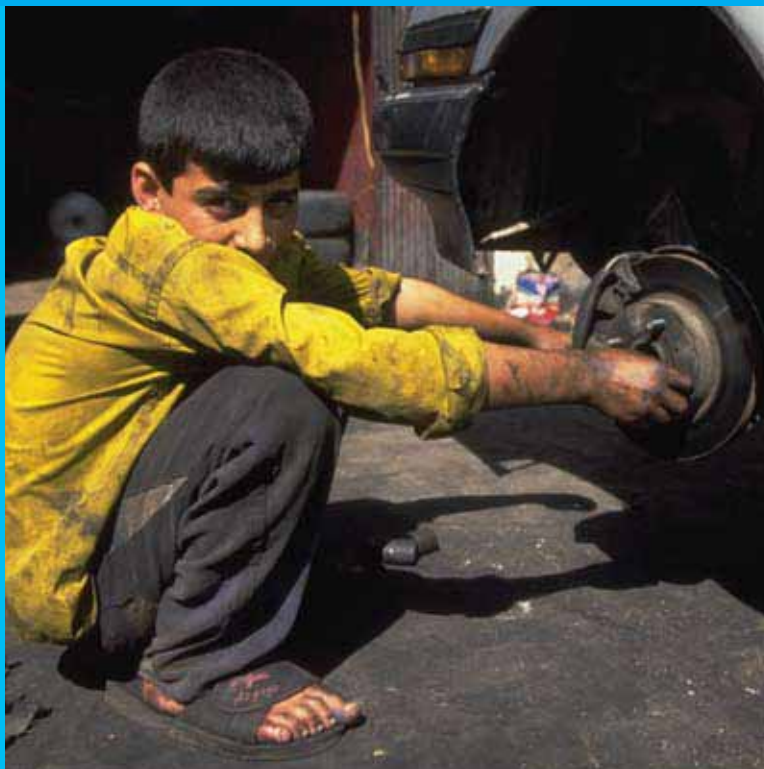


# CHILD LABOUR, EDUCATION AND POLICY OPTIONS

WORKING PAPER



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**CHILD LABOUR, EDUCATION  
AND POLICY OPTIONS**

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## Executive Summary

This paper presents various definitions of child labour and based on definitions and data availability, selects the UNICEF definition and data to analyze a set of research questions. It therefore uses the UNICEF data for analysis while recommending the need for further research on issues concerning definition of child labour and data.

The paper identifies causes of child labour and school attendance based on the literature review and on a very preliminary data collation between child labor on the one hand and various likely causal variables on the other. It poses three questions: which factors influence family's decision to subject the child to work, which factors contribute significantly to child not attending school as a result of its occupation, and are there policy options for Government to intervene effectively in this area? To analyze these questions, the paper postulates two sets of causality: one influencing child labour per se and the other influencing the decision of families to send their children to school.

The foregoing analysis presents evidence from the selected 175 countries that child labour is a dominant variable explaining primary and secondary enrolments. Girls' enrolments are consistently more sensitive to child labour and other determinants of education. Child labour in turn is largely a poverty phenomenon driven directly by poverty and economic conditions but also by female literacy representing socio-cultural acceptance of child labour practices. Again, there is a gender dimension in the child labour phenomenon, making girls more vulnerable than boys.

Policy recommendations are several which are presented in the earlier section. First, to root out child labour income support to vulnerable families seems essential. This support is more critical for girls than for boys. Second, there is clearly a role for educating mothers through awareness building, especially emphasising the risks of child labour and benefits from education.

Third, a whole host of education supply factors need to be addressed. This calls for significant stepping up of public spending for correcting supply gaps but also for advocacy and awareness building.

Fourth, the paper recommends areas for further research: it emphasizes research on defining child labour, it suggests further analysis of why secondary enrolments are less sensitive to public spending than primary enrolment; it asks whether the under-funding of the secondary education is the reason for this apparent ambiguity? It further finds that primary education is highly responsive to public education spending, suggesting the need for a step up of education allocations in order to get all children to school, as is committed under the millennium development declaration.

## Resumen Ejecutivo

Este documento presenta varias definiciones del trabajo infantil y, sobre la base de definiciones y datos disponibles, selecciona las definiciones y datos de UNICEF para analizar una serie de cuestiones relativas a la investigación. Por tanto, utiliza los datos de UNICEF para analizarlos, al mismo tiempo que recomienda la necesidad de intensificar las actividades de investigación en cuestiones relativas a la definición del trabajo infantil y de los datos.

El documento define las causas del trabajo infantil y de la asistencia a la escuela sobre la base de un examen de las publicaciones especializadas y de un cotejo muy preliminar de los datos entre el trabajo infantil por una parte, y distintas probables variables causales por otra. En el documento se plantean tres preguntas: ¿cuáles son los factores que influyen en la decisión de la familia de someter al niño al trabajo, cuáles son los factores que contribuyen sustancialmente a que el niño no asista a la escuela como resultado de su ocupación, y si el gobierno dispone de opciones normativas para intervenir eficazmente en esta esfera? A fin de analizar estas preguntas, el documento enuncia dos series de causalidades: una que influye en el trabajo infantil en sí mismo y la otra que influye en la decisión de las familias de enviar a sus hijos a la escuela.

El análisis precedente ofrece pruebas, recopiladas en 175 países seleccionados, de que el trabajo infantil es una variable dominante que explica la matriculación en la enseñanza primaria y secundaria. De manera uniforme, la matriculación de las niñas es más vulnerable al trabajo infantil y a otros determinantes de la educación. A su vez, el trabajo infantil es sobre todo un fenómeno relacionado con la pobreza, impulsado directamente por la pobreza y las condiciones económicas, pero también por la alfabetización de las niñas, que representa la aceptación sociocultural de las prácticas de trabajo infantil. De nuevo, hay una dimensión de género en el fenómeno del trabajo infantil, que hace que las niñas sean más vulnerables que los niños.

Hay varias recomendaciones de política que se presentan en la sección inicial. En primer lugar, parece esencial erradicar el apoyo en materia de ingresos que el trabajo infantil representa para las familias vulnerables. Este apoyo es más decisivo para las niñas que para los niños. En segundo lugar, está clara la necesidad de educar a las madres por medio del fomento de la concienciación, haciendo especialmente hincapié en los riesgos del trabajo infantil y los beneficios de la educación. En tercer lugar, es preciso abordar numerosos factores relacionados con la oferta de educación. Esto exige aumentar considerablemente el gasto público para corregir los déficits en la oferta, pero también para las tareas de promoción y de fomento de la concienciación.

En cuarto lugar, el documento recomienda otras esferas para intensificar las actividades de investigación: hace hincapié en la investigación sobre la definición del trabajo infantil, sugiere nuevos análisis para establecer por qué el gasto público influye menos en las matriculaciones en la escuela secundaria que en las matriculaciones en la enseñanza primaria; se pregunta si la insuficiente financiación de la educación secundaria es la razón que explica esta aparente ambigüedad; además, descubre que la educación primaria es en gran parte responsable del gasto en educación pública, lo que sugiere la necesidad de aumentar las asignaciones en la educación a fin de lograr que todos los niños vayan a la escuela, un compromiso que figura en la declaración de desarrollo del milenio.

## Résumé analytique

Ce rapport présente diverses définitions du travail des enfants et, sur la base des définitions existantes et de la disponibilité des données, choisit la définition et les données utilisées par l'UNICEF pour analyser une série de questions qui orienteront les travaux de recherche. Il se sert donc des données de l'UNICEF dans son analyse tout en soulignant le besoin d'une recherche plus approfondie sur les questions relatives à la définition du travail des enfants et aux données qui s'y rapportent.

Ce rapport identifie les causes du travail des enfants et de la fréquentation scolaire sur la base d'une étude de documents écrits et d'une collecte de données très préliminaire sur le travail des enfants d'un côté, et diverses variables de causalité possibles de l'autre. Il pose trois questions : quels facteurs influent sur la décision prise par une famille de faire travailler un enfant, quels facteurs contribuent de façon significative au fait qu'un enfant manque l'école du fait de son travail, et les pouvoirs publics disposent-ils d'options stratégiques pour intervenir de façon efficace dans ce domaine ? Pour analyser ces questions, ce rapport adopte le principe de deux ensembles de causes, la première influant sur le travail des enfants proprement dit, et la deuxième sur la décision prise par les familles d'envoyer leurs enfants à l'école.

L'analyse présentée plus haut présente des éléments en provenance des 175 pays choisis prouvant que le travail des enfants est une variable dominante servant à expliquer les taux de scolarisation aux niveaux primaire et secondaire. La scolarisation des filles répond toujours de façon plus immédiate au travail des enfants et à d'autres facteurs déterminants de l'éducation. Le travail des enfants, quant à lui, est en très grande partie un phénomène de pauvreté qu'affectent directement le dénuement et les conditions économiques, mais aussi le degré d'alphabétisation des filles, reflet de l'acceptation socio-culturelle des pratiques en cours concernant le travail des enfants. Là aussi, il existe une dimension sexospécifique dans le phénomène du travail des enfants qui fait que les filles sont plus vulnérables que les garçons.

Comme on l'a vu dans la section précédente, il existe plusieurs recommandations en matière de politique. Premièrement, il semble essentiel d'éliminer le revenu du travail des enfants qui soutient les familles vulnérables. Ce soutien est plus crucial pour les filles que pour les garçons. Deuxièmement, il importe de sensibiliser les mères, surtout pour souligner les risques du travail des enfants et les avantages de leur éducation.

Troisièmement, il faut s'attaquer à toute une série de facteurs qui affectent l'obtention de ressources éducatives. Il s'agit d'augmenter considérablement les dépenses publiques pour rectifier les lacunes de ce type d'approvisionnement, mais aussi pour développer le plaidoyer et la sensibilisation.

Quatrièmement, ce rapport recommande certains secteurs où la recherche doit s'intensifier : il insiste sur la recherche à mener sur la définition même du travail des enfants, suggère une analyse plus approfondie des raisons pour lesquelles les chiffres de scolarisation dans le secondaire ne sont pas autant affectés par les dépenses publiques que ceux du primaire, demande si le manque de financement de l'éducation secondaire est la raison de cette ambiguïté apparente. De plus, il conclut que l'éducation primaire réagit très nettement aux dépenses de l'éducation publique, ce qui laisse à penser qu'il faut augmenter les dépenses allouées à l'éducation afin que tous les enfants puissent être envoyés à l'école, conformément aux engagements de la Déclaration du Millénaire pour le développement.



# CHILD LABOUR, EDUCATION AND POLICY OPTIONS<sup>1</sup>

## 1. Concepts and definitions

There is no single universally accepted way to define ‘child labor.’ Concepts and definitions are varied and sometimes vague. Some authors argue that child labor is such a complex phenomenon that a single definition that captures all its facets is simply not possible. Child labor is regarded as a social construct which differs by actors, history, context and purpose (Weston 2005). Thus defining child labor is an exercise as much rooted in a culture or political discipline as in an economic or scientific analysis. As a result, researchers find it difficult to provide a justification for any comprehensive definition of child labor or to prove that one definition is better than another.

There are differences in concepts and definitions even between the key organizations working on the issues of child labour. For example, the World Bank describes child labor as a ‘serious threat’ from the point of view of the harm it can do to long term national investment (Weston 2005). The ILO relates the phenomenon to the harm done to children by their current engagement in certain types of economic activity. UNICEF emphasizes that the issue goes way beyond the concerns of investment or its relation to economic activity, and includes several aspects of domestic work which conflicts with the best interest of the child (Huebler 2006). However, a convergence of what constitutes child labor is important as it has implications for the type and scope of policies that are promoted. By and large, the definitions by ILO and UNICEF dominate the discussion in the literature.

### 1.1. The ILO concept and definition of child labor

The ILO concept of child labor is derived from the ILO Minimum Age Convention No. 138 of 1973, which sets 15 years as the general minimum age for employment. Any work in violation of Convention No. 138 is considered illegal child labor that should be eliminated. ILO introduces a distinction between child work, which may be acceptable, and child labor, which needs to be eliminated. In this regard, four groups of children engaged in work/labor are identified:

1. Children at work
2. Children engaged in child labor, including all economically active children 5 to 11 years of age; economically active children aged 12 to 14 years, except those doing light work only for less than 14 hours per week; and, children aged 15 to 17 years engaged in any type of hazardous work.
3. Children in hazardous work, that is, work that will likely harm the health, safety, or moral development of a child. In addition to children working in mines, construction or other

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<sup>1</sup> The Authors of this paper would like to acknowledge the contribution of Mr. Ngagne Diakhate for the statistical estimation and Friedrich Huebler for data on child labour.

hazardous activities, this group includes all children below 18 years of age who work 43 hours or more per week.

4. Children in unconditional worst forms of child labor, as defined by ILO Convention No. 182. This includes children in forced or bonded labor, armed conflict, prostitution and pornography, and illicit activities.

There are two points to note in this view of the ILO. Firstly, the first group covers activities that might be regarded as positive from an ILO perspective. The second and third groups cover child labor that deserves to be eliminated, and the fourth group requires an urgent action for elimination. Children under five years of age who are not included in these four groups are generally considered too young to be working. Secondly, the ILO definition covers only economic activity, that is, work related to the production of goods and services. Domestic work – such as cooking, cleaning, or caring for children – is ignored. The major criticism of this definition is that it is narrow as it underestimates the burden of work on children, especially for girls, who are more likely than boys to perform work in a household (Gibbons, Huebler, and Loaiza 2005).

## **1.2. The UNICEF concept and definition of child labor**

UNICEF has expanded the ILO definition of child labor by emphasizing the importance of domestic work by children, that is, in addition to economic work. UNICEF defines child labor as follows:

1. Children 5 -11 years engaged in any economic activity, or 28 hours or more domestic work per week;
2. Children 12-14 years engaged in any economic activity (except light work for less than 14 hours per week), or 28 hours or more domestic work per week;
3. Children 15-17 years engaged in any hazardous work.

The UNICEF definition has the advantage of theoretically capturing all work that children do. A study of 18 countries in sub-Saharan Africa shows that this improved indicator reveals work by children, especially girls that would otherwise remain hidden. As a result, as many girls as boys are found to be engaged in child labor, which contradicts the statement of the ILO that boys are more likely to work (Gibbons, Huebler, and Loaiza 2005).

Huebler (2006) however points out some limitations of UNICEF's definition on several grounds. Child labor, from Huebler's perspective, is of concern for two reasons: (a) it can be harmful to the health of a child; (b) it can interfere with a child's education. The definition of UNICEF provides a good indicator of child labor that is harmful to a child's physical or mental development. However, it is of limited value for an analysis of the trade-off between work and school attendance. The fact that a certain number of children in a country are engaged in child labor, as defined by UNICEF, does not mean that the remaining children are free to attend

school. A third concern is a potential bias against girls. There is a flaw in UNICEF's definition regarding the number of hours children are allowed to spend on certain activities before they are considered laborers. Assume that boys only do market work while girls only do household work. A 10-year-old boy would have to work only 1 hour to be counted as a child laborer while a girl of the same age must work at least 28 hours per week before she is counted. Additionally, it would be useful to know the timing of hours that the child works and whether this interferes with school attendance and achievement, regardless of the legality of such work.

For the reasons outlined above, Huebler (2006) argues that UNICEF should reconsider the way estimates for child labor is presented. First, it is necessary to report statistics for all work done by children, not only the work that falls under the existing definition of child labor. Second, UNICEF should search for ways to improve the consideration of domestic work because the currently applied limit of 28 hours per week seems to be too high and thus introduces a bias against girls.

Nevertheless, we rely extensively on UNICEF data for our analysis in subsequent sections of the paper. We acknowledge the concerns of Huebler (2006) regarding the limitations of UNICEF's definition of child labor and consequently its data. We however note that UNICEF's definition and data are an improvement over ILO's, particularly in capturing domestic work that is harmful for a child's growth and development. The involvement of girls in child labor is also better captured in the UNICEF's data. Obviously, one of the conclusions of this paper is to request UNICEF, ILO and other major players to address Huebler's concerns in their definition of child labor, and collection and compilation of data. Arguably, we do not rule out more than one measure of child labor in population, provided that each measure has its unique relevance and impact on the child. Or, there can perhaps also be incremental measures, capturing the complex phenomena as we move from one definition to another.<sup>2</sup> We do not go into these definitional issues and limit the analysis based on UNICEF definition and data on child labor.

### **1.3. Child labor and the MDGs**

The link between child labor and the MDGs is that of cause and effect. As we will discuss below, the causes of child labor are related to issues that the MDGs seek to address. Dominant among these are poverty (MDG 1), food insecurity (MDG1), lack of education (MDG2, MDG3), lack of other basic services (MDG4, MDG 5, MDG 6, MDG 7) and failure of economic policy (MDG 8). In addition, the growing phenomenon of child labor undermines the achievement of the MDGs since many of the children engaged in child labour are not visible in national statistics and plans as a result they are not the target of programmes and policies. In countries where child

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<sup>2</sup> A parallel can be found in the way "money supply" is defined in economics. At the very base is the supply of cash in the economy, but the definition becomes more comprehensive when we include bank credit and other instruments which directly or indirectly create money in the economy. Each definition has different impact and is used selectively depending on the nature of analysis.

labor exists, public policy to achieve the MDGs and other poverty reduction objectives should be designed to address the challenges faced by this vulnerable group.

The rest of the paper is organized as follows. The following section –section II - presents a literature review of causes that influence child labor, for both female and male child, and schooling of children. Section III presents key research questions the paper seeks to analyze. Section IV presents the hypotheses on causality of child labor and school enrolment, as derived from the literature survey but also from a large variety of connected data from 175 countries (see the list of countries and data at Annex1). The hypotheses have been constructed to answer the research questions identified in Section III. Section V explains the model and method of analysis applied and presents results and derived policy conclusions. Section VI presents the conclusions of the paper very briefly.

## **2. Literature Review**

### **2.1. Magnitude of the Problem**

Child labor remains a globally widespread, complex and multi-faceted phenomenon. A recent estimate of the International Labour Organisation is that worldwide over 350 million children work (ILO, 2004). That means that over one fifth of the world's children aged 5-17 years are exploited in child labour of different forms. Of these 218 million child laborers, 126 millions are engaged in hazardous work. The Asian-Pacific region continues to have the largest number of child workers, 122 million in total. It is followed by Sub-Saharan Africa (49.3 million) and Latin America and the Caribbean (5.7 million). Due to data gaps there are no new estimates for the Middle East and North Africa and the group of industrialized countries (ILO, 2004b). Still large numbers of children toil in appalling conditions and are ruthlessly exploited to perform dangerous jobs with little or no pay, and as a result of these conditions, oftentimes suffer severe physical and emotional abuse (Weston, 2005).

### **2.2. Causes of child labour**

#### **Poverty**

Marcus (1998) sees “child labor as a product of market forces – supply and demand, taking in the behavior of employers, as well as of individual households”. Marcus further notes that wide-scale poverty is among the most reasons why children work<sup>1</sup>. The importance of poverty as a cause and effect of child labour has been explored by the World Bank and ILO. They demonstrate that early entry into the labor force reduces lifetime earnings by 13-20 per cent, increasing significantly the probability of being poor later in life (ILO, 2006).

ILO (2006) further observes that while poverty is almost always a context for the early entry of children into regular work and into child labor, poverty can also be a function of: a) access to

labor markets and income-raising activities; b) family members of working age not having appropriate skills to match market needs in the area where they live; c) family members low educational levels; d) unemployment in the area where the family lives; e) conflict, illness or natural disaster having taken away the breadwinner of the family leaving a dependent household with no-one to depend on.

### **Inequality**

Save the Children Alliance (1997) also notes that other structural social inequalities based on gender, ethnicity, age, class and caste, influence which children work, the kinds of work they do, and their working conditions. Perceptions of what constitutes childhood vary widely between cultures and full-time work may be considered the most appropriate activity for a poor, low caste, or minority child. Likewise, girls may be expected to work while their brothers attend school. The inequalities in social and educational service provision and in economic opportunities between rural and urban areas can also create particular pressures on rural children to work and not attend school, as well as, sometimes, to migrate voluntarily or forcibly to urban areas to take up these legal and illegal ‘opportunities’<sup>2</sup>. Urban children, too, take advantage of particular economic ‘opportunities.’<sup>3</sup>

In many contexts, economic crises, resultant market-oriented adjustment and transition policies tend to exacerbate inequality, often increasing the supply of and demand for children’s labour. At the same time, trade liberalization and the increasing internalization of production have created new markets for unskilled, cheap labour, often including that of children. Economic inequalities, and unregulated rapid growth of market economies, have contributed to child labour by increasing the vulnerability of poor households on the one hand and reducing the resources available for state educational and welfare provision on the other. In such contexts, sometimes children’s work makes a critical contribution to household income and food security, and may thus become more attractive an option for children and parents than under-funded, low quality education.

### **Access to education**

Fyfe (1999) points out that child labour and education need not be mutually exclusive but a “host of defects in education play an important part in contributing to the child labour problem, and must therefore be part of any solution” (Fyfe, 1999). Both the education status and achievement are far below desirable levels among known child workers. Although many countries provide free compulsory education, it does not mean that education is totally free. Associated fees for schooling, such as costs for uniforms, text books, transportation and sometimes teachers’ own insinuations, are a huge burden for people who are poor. Many children have looked for work or were forced to drop out from school due to economic reasons, including the cost of schooling (Matsuno and Blagbrough, 2005).

There appears to be an indication that appropriate investment in primary and lower secondary education significantly decreases child laborer participation rates. In Latin America and the

Caribbean, 94 per cent of all primary school-age children are in school. The region has made also great strides towards increasing secondary schooling in the last few years. In contrast, Sub-Saharan Africa has the highest prevalence of primary school-age children out of school. Almost half of the children in West and central Africa and more than one third in East and Southern Africa are out of school. Therefore, in terms of incidence of child labor, Sub-Saharan Africa ranks highest and Latin America and the Caribbean lowest. About 1 in 4 children younger than 15 years works in the region, compared to 1 in 20 in Latin America and the Caribbean. In cases of extreme vulnerability families may see little or no benefit from sending children to school while recognizing the critical use of child income to help the family survive. It is also likely that poorest and most vulnerable families may also see child work as training of the child to survive, given their rational fear that vulnerability and poverty may perpetuate intergenerationally.

Also, in countries where gender discrimination is high and the status of women and girls is of concern, girls are more susceptible to join the work force. Indeed, the UNICEF State of the World Children 2007 indicates that “for every 100 boys out of school, there are 115 girls in the same situation” (UNICEF, 2006). Parents are also reluctant to send their girl child to school because educating them is not viewed as a good investment.

### **Culture**

Norms, values and cultural practices to favoring boys over girls, especially regarding access to education, are changing and progress has been made in providing equal access to girls and boys to basic education. Still, some hurdles remain. Girls continue to have less access to education and training, especially at the secondary and tertiary levels. Often educating a girl is seen as a poor investment because the girl will marry and leave home, bringing the benefits of education to the husband’s family rather than her own.

The other reasons for sending girls to work are cultural and traditional. Almost 50 per cent of the parents interviewed in a Dhaka-Bangladesh study said that the most important consideration for sending girls to domestic work was the cost of marriage, especially the dowry (UNICEF, 2004). Parents sent girls to work in order to save towards their dowry.

### **Parents’ education**

Qualitative assessments by the ILO in Dominican Republic, Ecuador, Ghana, the Philippines, South Africa and Turkey indicate that the level of parents’ education has influence over children’s involvement in hazardous form of labor. Most parents of exploited children had not completed formal education; many of them were illiterate. Other factors identified by the qualitative assessments in Lebanon were large family size and mothers’ education.

Low parental education is found to be a factor in this phenomenon. A situation analysis of child domestic workers in Dhaka city, Bangladesh carried out by UNICEF in 2004 showed that nearly 70 percent of the heads of households of child domestic workers (CDWs) were illiterate. Though

about 25 percent of the heads of households had 1 to 5 years of schooling, they were functionally illiterate.

### **Gender discrimination**

Children most vulnerable to child labor are often those who are also subject to discrimination and exclusion, including girls, ethnic minorities and indigenous and tribal people, those of low class or caste, people with disabilities, displaced persons and those living in remote areas (ILO, 2006). According to UNICEF (2004), “girls often start working at an earlier age than boys, especially in the rural areas where most working children are found”. As a result of adherence to traditional gender roles, many girls find themselves caught in a variety of in child labour activities.

Gender plays a significant role in determining the different types of work done. Girls predominate in domestic work, while boys are heavily represented in mining and quarrying (ILO, 2006). Often girls’ work remain hidden or un-accounted in some sectors such as planting, weeding or harvesting – where the vast majority of children’s work is concentrated - as they are perceived Boys are similarly hidden in prostitution which is often believed to be a girls’ domain alone. A careful and gender sensitive assessment can lead the way for more in-depth studies and formulation of effective policies to tackle child labor.

### **Vulnerability**

Another important determinant of child labor is social risks to families and their risk management strategy. The lack of accessible and relevant alternatives such as social safety nets can exacerbate the “push” factors of child labour.

Poor families also turn to child labor in times of constrained access to credit or unexpected income shocks. Impoverished households believe that the returns from child labor activities are significantly higher than those from education.

We also note from qualitative assessments in several countries, the link between the family survival strategies and child labor<sup>4</sup>. Parents who are struggling to make ends meet for family survival may resort to child labor if they have no other alternative. Often, family survival strategies identify some of the following situations as possible causes for family’s decision to involve child in labor activities: big families, single headed household, working mothers. Families with many children often find themselves unable to provide adequately for all of them and as a result, the children end up having to work to help their parents. Adults who are in charge of a poor single headed-household who is unable to find work are to perform duties for health or other reasons, then their only option often is to resort to child labor for survival purposes. Many women work in agriculture or on the market. When child care for young children and schooling for older children are not available or affordable, mothers will often take their children to work and gradually these children will start helping their mothers. Children will end up in the worst

forms of child labor as the parents ‘give them away’ or ‘sell’ them to intermediaries with false promises to give them a better life than they had at home.

Other factors that push children into the worst forms of child labor are dysfunctional families, female-headed household, personal problems, gender discrimination, traditional marriage practices or children’s desire to make quick money. Children’s own curiosity and pervasive consumerism often determine the ways in which boys and girls work, migrate or are trafficked. Research findings also suggest that boys tend to be more prone to peer pressure, while girls are driven by family and peer pressure (ILO, 2004).

In many cases children are pushed into labour due to context of crises and insecurity, conflicts and natural disasters, such as the tsunami of 2004 or the earthquake in Pakistan in 2005 and HIV/AIDS affected communities (Marcus, 1999). Children are often the most affected by crises, which place them at increased risk of entering child labour (ILO, 2006). Conflict and economic crisis have led to a growing incidence of some of the unconditional worst forms of child labor, such as the use of children in armed conflict and trafficking of children to feed an expanding international sex industry.

### **Economic crisis**

Marcus (1999) notes that economic decline and/or austerity programs result in squeezed livelihoods for poor families and reduced public investment in education and its quality, thus reducing its attractiveness to children and increasing its cost. Economic decline also means stagnation or decline in average incomes. The impact is even more adverse when sectors that employ the poor are affected, in particular, agriculture and labor intensive industries.

## **3. Research questions**

In view of the above discussion, we pose three questions that our paper will seek to address:

- Which factors influence family’s decision to subject the child to work?
- Which factors contribute significantly to child not attending school as a result of its occupation?
- Are there policy options for Government to intervene in this issue? If so, which policy options are recommended?

## **4. Searching for hypotheses to address the research questions**

Our literature survey has shown that a large number of factors influence families’ decision to send children to work. Not all these variables are easily measurable or have data easily available,

requiring the analysis to seek variables that may stand proxy in some cases. Also, we recognize that several variables are inter-related. For instance poverty and vulnerability factors could be reflected with the help of variable such as GDP per capita, poverty level in a country, growth opportunities available for families to earn income, and the level of public services. Therefore, we first examine the relationships of child labor with a large set of possible factors with data on 175 countries. The data used for all the 175 countries is presented at Annex I. It may be noted that the size of the sample was constrained by availability of data. No other criterion was used to include or exclude a country for which child labor data is available with UNICEF.

It may be seen from the Table at Annex I that the child labor data is divided in three ways, namely male, female and total. The variables considered in the search of causal relationships between child labor on the one hand and a host of explanatory variables on the other, as suggested in the literature review, are presented below.

Objective variables	Explanatory variables	
1. Child labor total ( <b>clt</b> ) 2. Child labor male ( <b>clm</b> ) 3. Child labor female ( <b>clf</b> )	A. Poverty variables	4. Proportion of population living with less than dollar a day ( <b>lt1do~r</b> ) 5. Stunting ratio (stunting) 6. Diet deficiency in population ( <b>diet</b> )
	B. Economic variables	7. Gross national income per capita ( <b>gnipc</b> ) 8. Rate of growth of GDP ( <b>dgdg</b> )
	C. Education variables:	9. Literacy male ( <b>litm</b> ) 10. Literacy female ( <b>litf</b> ) 11. Gross primary enrollment ratio for male ( <b>pgerm</b> ) 12. Gross primary enrollment ratio for female ( <b>pgerf</b> ) 13. Net primary enrollment for male ( <b>pnerm</b> ) 14. Net primary enrolment ratio for female( <b>pnerf</b> ) 15. Primary net attendance rate for male( <b>pnarm</b> ) 16. Primary net attendance rate for female ( <b>pnarf</b> ) 17. Reaching grade five - based on administrative data( <b>rg5a</b> ) 18. Reaching grade five – based on survey data( <b>rg5s</b> ) 19. Secondary gross enrollment rate male( <b>sgerm</b> ) 20. Secondary gross enrollment rate female ( <b>sgerf</b> ) 21. Secondary net enrollment rate for male ( <b>snerm</b> ) 22. Secondary net enrollment for female

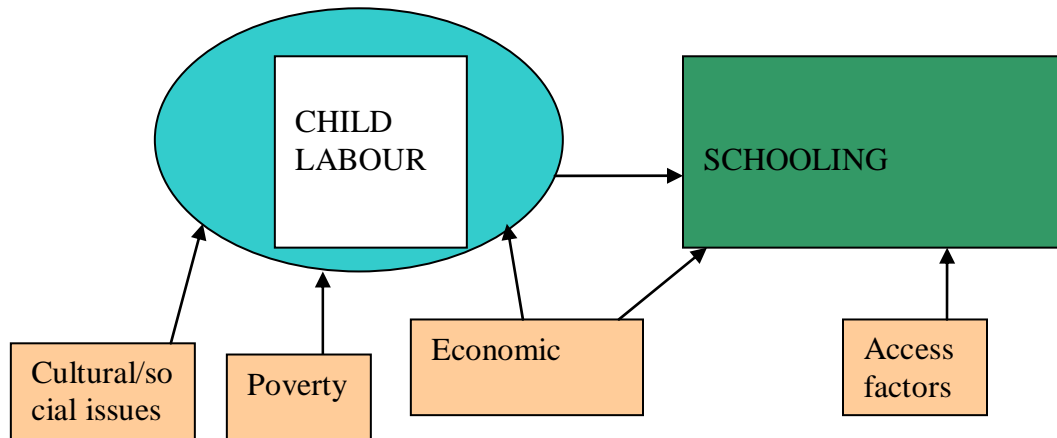
		<p>(<b>snerf</b>)</p> <p>23. Secondary net attendance rate male</p> <p>(<b>snarm</b>)</p> <p>24. Secondary net attendance rate female</p> <p>(<b>snarf</b>)</p>
	D. Public social spending	<p>25. Health expenditure as proportion of GDP (<b>hlthexp</b>)</p> <p>26. Education expenditure as proportion of GDP (<b>edexp</b>)</p> <p>27.</p>
	E. Cultural factors:	<p>28. Phone density (<b>phones</b>)</p> <p>29. Internet access (<b>intent</b>)</p>

A simple correlation among the above variables (presented at Annex II) shows that not all explanatory variables are equally strongly correlated with the child labor phenomenon in any of its three facets. Also, several of the explanatory variables are themselves highly correlated. This led us to examine different sets of relationships separately and helped us formulate the following hypotheses to address the three questions mentioned above.

*Two-step causality:* The above initial exploratory exercise made us assume that the decision of a family to engage a child as a worker and to send him or her to school is taken in two steps. This means that child labor and schooling may not always have one-to-one correspondence. A child engaged in worked may or may not attend school. Therefore, causes for using children in work and those for sending or not sending to school are investigated separately considering that these may not always be mutually exclusive decisions that families have to make.

The above two decision steps are shown in the following diagram. This diagram also depicts our hypotheses and the structure of the model applied in this analysis.

## 5. Structure of the model, analysis and results



The above diagram identifies three sets of factors influencing families to engage their children in work. These are social and cultural factors, poverty, and economic environment they live in. The socio-cultural beliefs play a part in communities accepting child labor as a normal practice.

The first set of factors relate to socio-cultural conditions. Both the parents who use or send their children to work and those who employ them do not recognize the harm they are doing and there is no effective social or moral sanction against this practice. If a family lived in a more advanced socio-cultural setting, then moral sanctions would operate against this practice and would, on the margins, have a resistance. How do we measure the socio-cultural factors that make communities accept this practice? We have assumed that these factors are well captured by the level of female literacy. This implies that other things being equal, countries with highest female illiteracy would also have the highest tolerance for child labor practices. Female literacy works through several underlying channels, such as poverty, lack of information and knowledge about future benefits of education and the future opportunities that a child in work will be denied. Besides, low literacy will not allow individuals to question traditional practices

The second set of factors relate to family poverty. As the literature review has shown. Poor families depend on the earnings from child employment to meet their food and other essential needs. We use proportion of population below dollar a day as an indicator of poverty in countries selected for analysis. We also tried food deficiency index and stunting (reported in the data set at Annex 1) also to represent poverty status, but these variables did not give significant results and were thus dropped. There is of course no obvious reason why these two variables should be

insignificant. It may be that the data is not reliable or the aggregation of data at the national level may have hidden the differentiating power of these variables. These issues would deserve closer scrutiny through further research.

The third set of factors in families' decisions to engage their children in work may arise from economic conditions in the country. If the size of the economy is large (offering greater employment opportunities) and/or the economy is growing fast, then there might be an expectation on the part of the families that child education could improve their future earnings. It may make investing in education to look more attractive. Families may then be ready to undertake even hardships for sending their children to school and not keep them working. We looked at several factors in this category as likely explanatory variables, but found the rate of growth as the best proxy to represent overall economic factor in this context.

The fourth set of factors relates to access to education: Child employment and its reward themselves may be a factor in decision to send or not to send a child to school. Thus, if there is a no school within a reasonable distance, a family would hesitate to withdraw a child from work which is meant to hedge the entire family against seasonal poverty. A family may like to send its children to school but there may be no access, which may then result in the family keeping the child engaged in work. The supply factors therefore play a role in schooling.

There can be several supply factors influencing schooling decisions, such as distance of school, fees and charges, quality of education generally measured by student-teacher ratio, female teachers, school environment and curriculum, as well as the prospects of sending the child to higher classes when, as family may believe, returns on education become more significant. Data on these variables are not easily available. Therefore, supply factors have been summarized by public social spending as a proportion of the national income. It is believed that where the government spends more on social services, particularly education, then supply factors are more favorable.

Based on the above assumptions we have postulated the following causal relationships. The parental decision to engage the children in work is assumed to be based on the following consideration.

$$CL = a + b*litf + c*dgdp + d*lt1dollar \dots (1)$$

Where

*CL* is the ratio of children employed in their total population,

*litf* is female literacy rate in the country,

*dgdp* is growth rate, and

*lt1dollar* is the proportion of population with income less than dollar a day.

The decision to send or not to send children to school is assumed to be captured by the following relationship.

$$EDUCATION = k + m * edexp + n * clf + p * gnipc$$

... (2)

Where

*EDUCATION* represents education variables

*Clf* is child labor female or male as the case may be,

*Edexp* represents the supply side effort reflected in the share of public spending on education, and

*Gnipc* is gross national income per capita.

The results of the analysis are presented as follows.

**Table 1: Child labor and explanatory variable coefficients and their t-statistics (in parenthesis)**

Objective or y-variable	Constant	<i>litf</i>	<i>dgdg</i>	<i>lt1dollar</i>
Clf (female child labor)	39,469 (4,225)	-0.305 (-3.150)	-1.119 (-1.306)	0.153 (1.333)
Clt (total child labor)	34,432 (4,470)	-0.256 (-3,056)	Not significant	0.213 (2,170)

Interpretation of the results: The above results show that the dominant factors that influence child labor for girls include: female literacy, poverty, economic growth and level of economic opportunity as reflected by economic growth. A 1 percentage point rise in female literacy can reduce female child labor by 0.3 percent and reduce total child labor in a country by 0.25 percent. Similarly, a 1 per cent point reduction in population below dollar a day can reduce 0.21 per cent point in total child labor. Economic growth is quite an effective factor, especially in reducing female child work.

Clearly, female literacy is critical in the female child labor phenomenon. Poverty and economic factors also influence these decisions, but with lower levels of statistical significance. We may say that at the heart of this phenomenon is the mother's education. Family poverty also has a critical role in the phenomenon, and it can become very powerful where female literacy is low as well.

The results suggest broadly two policy options, namely to provide income support to poor families vulnerable to child labor and to target poor mothers for education or awareness building for investing in their daughter's education, including increased awareness of the risks of child labor. The results for the male child labor were found to be similar to the total child labor *clt* reported in the above table.

Girls more vulnerable to economic downturns: It may be noted that economic factors were not significant in the case of male child labor, but quite significant for female child labor. This suggests that male child work is not dependent significantly on how the economy is doing. For boys it is more a structural problem. However, a girl child while facing the structural causes also has vulnerability from economic factors. When there is a sudden economic downturn, say as a result of an economic crisis, economic adjustment or drought; girls become more vulnerable to child labor than boys. This difference may suggest the need for better targeting of girls for economic support during seasonal or catastrophic poverty.

**Table 2: Education and explanatory variable coefficients and their t-statistics (in parenthesis)**

Objective variable	Constant	CLF/CLM	EDEXP	GNIPC
GERPF (gross Primary Enrollment - Female)	96,121 (13,203)	-,577 (-3,285)	,870 (2,229)	Not significant
GERPM (gross primary enrollment - male)	95,687 (13,840)	-,162 (-1,035)	,823 (2,229)	Not significant
SERPF (secondary enrollment- female)	63,186 (7,416)	-,809 (-3,914)	-,415 (-1,002)	,006 (3,659)
SERPM (secondary enrollment - male)	62,161 (7,791)	-,460 (-2,589)	-,501 (-1,263)	,005 (3,568)

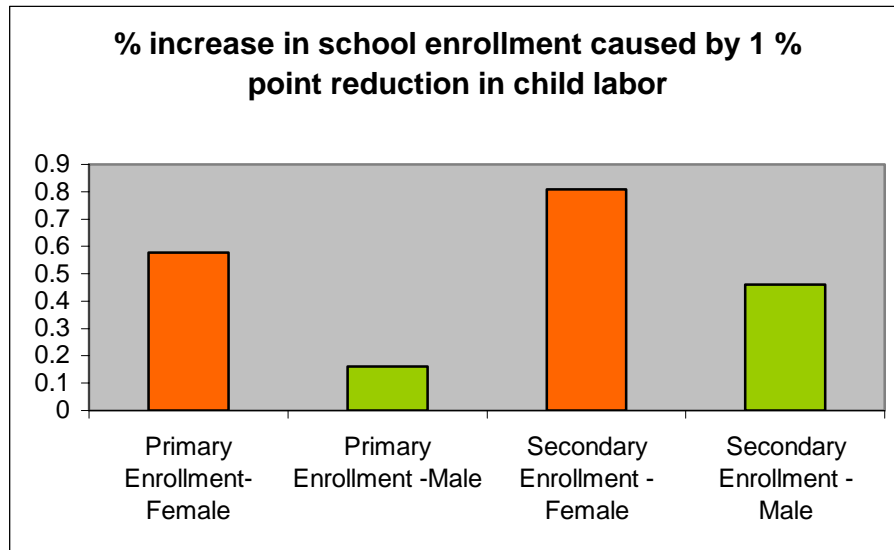
Interpretation of results: Several interesting conclusions emerge from the above results. These are described as follows.

1. The above results show that a 1 per cent point increase in social spending will increase primary enrolment by over 0.8 percent. In the sample of countries examined, both primary and secondary education is very much influenced by the level of child labour in the country. Arguably, child labour for female and male - *clf* and *clm* - also represent the cultural, economic and poverty levels in the country as found in the previous equation. Their influence on education includes but goes beyond just the impact of the implicit factors of culture, poverty and economic environment.<sup>3</sup>

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<sup>3</sup> This is evident since while data on *clf* and *clm* had significant explanatory power as shown here, this level of significance was much lower when we used the explained part of *clf* and *clm* – or when we used *clf-hat* and *clm-hat* in estimating equation 2.

- The effect of child labour is consistently higher for girls. The following diagram shows likely increases in enrolment that can be obtained by reducing child labour for female and male children.



- Also, child labour becomes more dominant a cause for low enrolment in secondary than in primary school. This may be due to higher opportunity costs associated with secondary schooling.
- Education while dependent on whether a child is working or not, is also influenced by public education expenditure. Thus the decision of a working child to go to school or not, is also influenced by what the state is doing in education sector itself. Higher public spending in education can be beneficial for children to attend school irrespective of whether they are employed or not.
- Public education spending has a consistently larger influence on primary enrolment than on secondary. This may not mean that secondary school spending is a weak factor. What is perhaps more likely is that the progression from primary to secondary becomes dependent on several other additional factors rather than just on education spending. These may include demand factors but also school distances which are often greater for secondary than for primary. Therefore, public spending while a necessary factor may not be as strong a factor in explaining secondary enrolments.
- Economic factors have greater influence on secondary enrolment. If a country in the sample has a higher per capita income, the secondary enrolment is likely to be higher there too. This may arise from the fact that at the time of sending the child to secondary education, families take into consideration the potential economic opportunity in the country from which helps education to be translated into greater earnings. Also, clearly

the opportunity cost of secondary education would be higher due to greater capacity of the child to earn, and higher fees in secondary school. Primary children may have relatively low opportunity cost as also lower direct cost of education.

**These results suggest the following policy options:**

- There is need to target children actually or potentially engaged in child labour, through income and other support. Such support could be linked to children attending school. It is clear that such support would be needed to achieve the Education for All and the MDG 2 goals on education. In these interventions, greater attention would be needed for vulnerable girls.
- Government education spending has a dominant impact on children going to primary school. It is worth noting that such spending has greater influence on girls' school enrolment than boys', suggesting a greater sensitivity of female child to supply factors. Greater attention to female child's needs in location of schools and its facilities would be beneficial.
- Develop formal or alternative/informal educational programmes for girls, who are not enrolled or have dropped out of school due to specific life circumstances including child labour, poverty, abuse or exploitation to break the cycle of female literacy and allocate appropriate resources to these programmes. Also important are advocacy campaigns and community focused programmes to help eradicate gender discrimination in schools, families and within the society at large. Issues in such advocacy may be derived from the literature, which normally include flexible scheduling, increased safety of schools, female teachers, and separate hygiene and sanitation facilities for girls, distance of schools from home.
- Economic environment is a significant determinant of secondary enrolment. What this suggests is that government should lay emphasis on building secondary schools but also ensure that economic environment creates incentives for parents to send children to secondary school. It is to be noted that demand for secondary education may not overstep economic environment. This does not mean lowering public spending on secondary education. Contrarily, it suggests also creating opportunity for growth in per capita income would improve responses from families to sending children to secondary school.

## **6. Conclusions**

This paper presents various definitions of child labour and argues that considering the scope of these definitions and data availability, the UNICEF definition and data tell us better for the research questions we have posed. It therefore uses the UNICEF data for analysis while recommending the need for further research on issues concerning definition of child labour and data.

The paper identifies causes of child labour and school attendance based on the literature review and on a very preliminary data collation between child labour on the one hand and various likely causal variables on the other. It postulates two sets of causality: one influencing child labour per se and the other influencing the decision of families to send their children to school. It is noted that there is evidence that children attending school may or may not be engaged in domestic or external employment. The paper therefore separates the causality for child labour and school enrolments.

Our analysis presents strong evidence from the selected 175 countries that child labour is a dominant variable explaining primary and secondary enrolments. Girls' enrolments are consistently more sensitive to child labour and other determinants of education. Child labour in turn is largely a poverty phenomenon driven directly by poverty and economic conditions but also by female literacy representing socio-cultural acceptance of child labour practices. Again, there is a gender dimension in the child labour phenomenon, making girls more vulnerable than boys.

Policy recommendations are several which are presented in the earlier section. Three sets of policy options come out clearly from the analysis. First, to root out child labour income support to vulnerable families seems essential. This support is more critical for girls than for boys. Second, there is clearly a role for educating mothers through awareness building, especially emphasising the risks of child labour and benefits from education. Third, a whole host of education supply factors need to be addressed. This calls for significant stepping up of public spending for correcting supply gaps but also for advocacy and awareness building.

In addition, the paper recommends some areas for further research. First, it emphasizes the need for research on defining child labour. Arguably, there need not be just one definition if that fails to capture all relevant aspects. A thorough work is needed to define child labour with one indicator, a set of indicators, or even an index constructed with various aspects of the child labour phenomenon. This will help further policy analysis work in this area. Second, there remain several unanswered questions in this study. For instance, it does not explain why secondary enrolments are less sensitive to public spending than primary enrolment. Is it just an indication of the fact that there has not been commensurate public spending in the secondary segment in the sample countries while secondary sector has grown, leaving growth to be addressed by the private sector? Or is it that over the years secondary education has remained under-funded despite growth in enrolment and the results actually pick up that effect? These questions need a more thorough investigation.

In several countries, primary education may not yield significant market returns (as opposed to social returns), making families place lower values on primary education. Secondary education may be seen as valuable, but for a variety of pull and push factors this may remain inaccessible to poor children. In that event, public spending in beefing up secondary education can help root out child labour. This conclusion does not come out from our results but still deserve further and a more detailed analysis.

Fourth, primary education is very responsive to public education spending. This would suggest that stepping up education allocations will prove effective to get all children to school, as is committed under the millennium development declaration. However, there would still be the need of income support for vulnerable children in order to get them to school.

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<sup>1</sup>*Small hands – Children in the working world* – Marcus, Rachel – Save the Children, working paper no. 16

<sup>2</sup> Position on child work – International Save the Children Alliance Position Paper No. 1 – February 1997

<sup>3</sup> *Ibid.*

<sup>4</sup> See for example Matsuno, A. and J. Blagbrough (2005), UNICEF (2002) and UNICEF (2004) on studies in several countries.

# Annex I

Countries and territories	cit Total % of as %	cit Male % of as %	cit Female % of as %	Adult literacy rate		Number per 100 population	Primary school enrollment ratio (2000-2004*)		Primary school enrollment ratio (1995-2004*)		Primary school enrollment ratio (2000-2004*)		Secondary school enrollment ratio (2000-2004*)		Secondary school enrollment ratio (1995-2004*)		GNI per capita (US\$)	Average Annual Growth Rate of GDP per Capita (%) 1990-2004	% of population below \$1 a day 1993-2003*	% of central government expenditure allocated to: (1993-2004*)	% of <= population below minimum level of food from dietary energy				
				male	female		gross	net	gross	net	gross	net	gross	net	2004	1990-2004						1993-2003*	health	education	severe
				2000-2004*	2000-2004*		male	female	male	female	male	female	male	female	male	female						male	female	male	female
Afghanistan	34 <sup>†</sup>	31 <sup>†</sup>	33 <sup>†</sup>	-	-	1	120	63	-	66	40	-	-	-	18	6	250	x	-	-	-	-	54		
Albania	23	26	19	99	98	44	105	102	96	94	-	90	81	76	39	39	2080	5.2	<2	4	2	34			
Algeria				79	80	11	2	113	104	96	94	93	77	83	63	-	-	2280	0.8	<2	4	24	19		
Andorra				-	-	115	12	101	101	88	90	-	-	80	84	69	74	-	-	-	-	-	-		
Angola	22	21	23	82	54	2	0	80	68	66	x	57	17	-	22	20	1030	0.7	-	6	x	15	45		
Antigua & Barbuda				-	-	98	13	-	-	-	-	-	-	-	-	-	10000	1.6	-	-	-	-	7		
Argentina				97	97	40	11	120	119	-	-	-	92	78	97	84	-	3720	1.0	3	5	4	12		
Armenia				100	99	18	4	100	97	95	93	97	86	100	86	82	85	1120	3.6	13	-	-	13		
Australia				-	-	126	57	104	104	96	97	-	-	156	152	87	89	-	26900	2.5	-	14	9		
Austria				-	-	136	46	103	103	89	91	-	-	102	97	89	89	-	32300	1.8	-	13	10		
Azerbaijan	8	9	7	99	98	24	4	94	91	81	79	91	99	84	81	77	75	950	-0.3	4	1	3	13		
Bahrain				-	-	70	26	92	93	05	00	-	-	90	93	74	77	-	14920	x	0.3	x	16	20	
Bahrain	5	6	3	92	83	91	22	97	97	89	91	86	99	99	93	99	84	90	10840	x	1.9	x	7	13	
Bangladesh	7	10	4	50	31	2	0	94	98	82	86	78	80	54	86	45	50	440	3.1	36	7	18	43		
Barbados				100	100	102	37	109	108	100	100	-	-	105	107	90	90	-	9270	x	1.4	x	-	7	
Belarus				100	99	42	14	103	101	95	94	-	-	90	92	83	86	-	2120	1.6	<2	4	4		
Belgium				-	-	128	39	106	105	100	100	-	-	153	169	97	98	-	31030	1.8	-	15	3		
Belize	26 <sup>†</sup>	23 <sup>†</sup>	29 <sup>†</sup>	77	77	32	11	123	121	98	100	-	-	76	80	67	71	-	3940	2.2	-	8	20		
Benin				46	23	4	1	127	92	69	47	61	47	68	92	38	17	27	530	2.1	-	6	x	31	
Blutan				-	-	5	2	-	-	-	-	-	-	-	-	-	-	-	760	3.6	-	11	17		
Bolivia	21	22	20	93	80	22	3	116	115	95	95	78	77	84	50	88	85	72	960	1.3	14	10	23		
Bosnia and Herzegovina	11	12	10	98	91	52	3	-	-	-	-	-	-	99	-	-	-	79	2040	11.7	x	-	-		
Botswana				76	82	37	3	103	103	79	83	83	86	88	96	70	75	50	4340	2.9	31	5	26		
Brazil	7 <sup>†</sup>	9 <sup>†</sup>	4 <sup>†</sup>	88	89	49	8	151	143	98	91	96	96	80	80	105	115	72	3090	1.2	8	6	6		
Bunei Darussalam				95	90	66	x	106	106	-	-	-	-	87	92	-	-	-	24100	x	-	-	-		
Bulgaria				99	98	85	21	101	99	91	90	-	-	100	97	88	86	-	2140	1.0	5	12	5		
Burkina Faso	57 <sup>†</sup>	-	-	19	8	2	0	53	39	42	31	35	29	78	93	14	9	11	360	1.8	45	7	x		
Burundi	24	26	23	67	52	1	0	86	69	62	52	50	44	68	80	13	9	10	90	-3.1	55	2	15		
Cameroon				85	64	4	0	130	117	96	91	66	65	61	93	31	20	30	320	4.1	x	34	-		
Canada	51	52	50	77	60	5	0	116	99	-	-	-	-	76	73	64	93	34	800	0.4	17	3	12		
Canada				-	-	107	48	101	102	100	100	-	-	106	105	97	98	-	28900	2.3	-	3	2		
Cape Verde				85	68	27	4	124	118	100	98	-	-	67	73	55	61	-	1770	3.3	-	-	-		
Central African Republic	56	54	57	65	33	1	0	78	53	-	-	-	-	70	-	-	-	10	310	-0.5	67	-	39		
Chad	57	60	55	41	13	1	0	95	61	75	51	46	33	44	96	22	7	12	260	0.9	-	8	x		
Chile				96	96	73	27	99	97	85	84	-	-	91	92	80	81	-	4910	3.9	<2	14	18		







Sierra Leone	57	57	57	40	21	2	0	93	65	-	-	39	-	-	-	14	12	200	-2.5	57 x	10 x	13 x	34	50.1
Singapore				97	89	130	51	-	-	-	-	-	-	-	-	-	-	24220	3.5	-	6	23	11	-
Slovakia				100	100	92	26	101	100	85	86	-	88	88	88	-	-	6480	2.6	-2	20	3	-	-
Slovenia				100	100	128	40	108	107	94	93	-	99 y	93	94	-	-	14810	3.1	-2	15	14	-	-
Solomon Islands				-	-	2	1	-	-	-	-	-	-	-	-	-	-	550	-2.6	-	-	-	27	-
Somalia	32	29	36	-	-	5	1	-	-	-	-	12	10	-	-	-	-	130 x	-	-	1 x	2 x	23	-
South Africa				84	81	41	7	108	104	89	89	93	94	65	99	84	91	63	3630	0.4	11	-	-	25
Spain				-	-	135	24	109	107	100	99	-	-	-	-	114	121	94	21210	2.4	-	15	2	-
Sri Lanka				92	89	12	1	111	110	-	-	-	-	98	84	89	-	-	1010	3.3	8	6	10	14
Sudan	13	14	12	69	50	5	1	64	56	50	42	54	52	84	71	38	32	-	530	3.3	-	1	8	21.9
Suriname				92	84	47	4	127	125	96	98	88	91	-	84	63	85	54	2250	0.9	-	-	-	10.6
Swaziland	8	8	8	80	78	13	3	102	94	75	75	72	71	73	94	45	46	29	1660	0.2	8	8	20	19
Sweden				-	-	162	57	109	112	100	99	-	-	-	-	127	151	99	35770	2.1	-	3	6	-
Switzerland				-	-	157	40	108	107	99	99	-	-	-	-	101	95	89	48230	0.6	-	0	3	-
Syrian Arab Republic	8 <sup>y</sup>	10 <sup>y</sup>	6 <sup>y</sup>	91	74	15	1	118	112	100	96	-	-	91	-	50	46	44	1190	1.3	-	2	9	18
Tajikistan	18	19	17	100	99	4	0	113	108	97	91 x	80	82	99 y	94	94	78	90	280	-5.1	7	2	4	36
Tanzania, United Republic of	32	34	30	76	62	3	1	98	95	83	81	47	51	88	97	6	5	5 x	330	1.3	48 x	6 x	8 x	44
Thailand				95	91	50	11	99	95	87	84	-	-	-	-	77	77	-	2540	2.9	-2	11	23	19.7
The former Yugoslav Republic of Macedonia				98	94	45	5	96	97	91	91	-	-	96 y	-	86	84	82	2350	-0.5	-2	-	-	7
Timor-Leste	4 <sup>y</sup>	4 <sup>y</sup>	4 <sup>y</sup>	-	-	-	-	-	-	-	-	-	76 y	74 y	-	-	-	-	550	-	-	-	-	49
Togo	60	62	59	68	38	6	4	132	110	99	83	68	59	69	88	51	22	36	380	0.3	-	5 x	20 x	26
Tonga				99	99	15	3	114	111	100	100	-	-	84 x,y	-	96	111	67	1830	2.0	-	7 x	13 x	-
Trinidad and Tobago	2	3	2	99	98	53	11	101	99	91	90	95	96	71	100	79	86	69	8880	3.5	4 x	9	15	5
Tunisia				83	65	31	6	113	109	97	97	95 y	93 y	96	92	75	81	61	2630	3.2	-2	6	20	0.7
Turkey				96	81	66	8	95	88	89	84	89	88	-	97	90	67	-	3750	1.4	-2	3	10	2.7
Turkmenistan				99	98	8	0 x	-	-	-	-	-	86	84	-	100	-	-	1340	0.2	12	-	-	8.6
Tuvalu				-	-	7	19	96	109	-	-	-	-	-	-	87	81	-	-	-	-	-	-	-
Uganda	34	34	33	79	59	3	0	142	139	-	-	78	79	64	89	22	18	17	270	3.8	85	2 x	15 x	19.1
Ukraine				100	99	37	2	93	93	84	84	-	-	99 y	-	97	96	84	1260	-3.5	3	3	7	3
United Arab Emirates				76	81	102	27	98	95	84	82	-	-	93	-	77	80	70	18060 x	-2.1	x	-	8	17
United Kingdom				-	-	143	42	100	100	100	100	-	-	-	-	159	199	94	33940	2.5	-	15	4	-
United States				-	-	117	56	98	98	92	93	-	-	-	-	94	94	88	41400	2.1	-	23	3	2
Uruguay				97	98	47	12 x	110	108	90	91	-	-	93	-	99	112	70	3950	0.8	-2	7	8	3.6
Uzbekistan	15	18	12	100	99	8	2	103	102	-	-	81	80	96 y	89	97	94	-	460	-0.1	17	-	21	26
Vanuatu				-	-	7	4	113	113	93	95	-	-	72	-	27	29	27	1340	-0.8	-	-	-	19
Venezuela	7	9	5	93	93	38	6	105	103	90	91	93	95	84	96	65	75	55	4020	-1.3	14	6	20	13
Viet Nam	23	23	22	94	87	9	4	105	97	98	92	97	96	87	96	75	70	-	550	5.8	-2	4	14	32
Yemen				69	29	5	1	98	68	84	59	68	41	76	88	65	29	47	570	2.1	16	4	22	53
Zambia	11	10	11	76	60	3	1	85	79	69	68	68	68	77	88	30	25	25	450	-0.6	64	13	14	49
Zimbabwe	26 <sup>y</sup>	-	-	94	86	6	4	94	92	79	80	85	86	70	94	38	35	35	480 x	-0.8	x	8	24	43.8

Source: UNICEF SOWC 2006 database.

## Annex II

### Simple correlation among variables examined

	clt	clm	clf	litm	litf	phones	intnet
clt	1.0000						
clm	0.9745	1.0000					
clf	0.9704	0.8926	1.0000				
litm	-0.5423	-0.3693	-0.5265	1.0000			
litf	-0.5668	-0.3883	-0.5986	0.9520	1.0000		
phones	-0.5314	-0.4100	-0.6119	0.5819	0.6358	1.0000	
intnet	-0.2003	-0.0089	-0.3503	0.4975	0.5603	0.8956	1.0000
pgerm	-0.4149	-0.2865	-0.3548	0.3917	0.4131	0.1477	0.1067
pgerf	-0.6251	-0.4788	-0.6502	0.6141	0.6597	0.3661	0.2946
pnerm	-0.6587	-0.4888	-0.6815	0.7205	0.6916	0.5085	0.4507
pnerf	-0.7133	-0.5392	-0.7740	0.7679	0.7657	0.5635	0.4962
pnarm	-0.7205	-0.6769	-0.6945	0.7091	0.7575	0.6423	0.5293
pnarf	-0.7494	-0.7014	-0.7409	0.7395	0.8059	0.6586	0.5468
rg5a	-0.3011	-0.2790	-0.4217	0.5179	0.5616	0.5460	0.4834
rg5s	-0.0779	-0.1076	-0.1270	0.0592	0.1370	0.2372	0.2128
sgerm	-0.6015	-0.4781	-0.6400	0.7116	0.7772	0.7784	0.7457
sgerf	-0.6287	-0.5019	-0.6866	0.7139	0.7954	0.7664	0.7284
snerm	-0.6360	-0.5393	-0.6449	0.7619	0.7609	0.7523	0.6915
snerf	-0.6626	-0.5498	-0.7016	0.7714	0.7912	0.7386	0.6737
snarm	-0.6147	-0.5863	-0.6159	0.5805	0.6239	0.6275	0.5409
snarf	-0.6449	-0.6098	-0.6571	0.6075	0.6828	0.6833	0.6170
gnipc	-0.3579	-0.2505	-0.4349	0.3930	0.4153	0.8568	0.8621
dgdpc	-0.1639	-0.1418	-0.2028	0.2738	0.2641	0.1475	0.0863
ltdollar	0.4654	0.3096	0.5100	-0.6499	-0.6795	-0.5637	-0.5128
hlthexp	0.0159	0.1849	-0.1646	0.2778	0.3564	0.3447	0.3706
edexp	0.0160	0.0241	-0.0289	-0.4046	-0.3547	-0.3495	-0.3028
stunting	0.3534	0.2548	0.4373	-0.5842	-0.6644	-0.6754	-0.6462
diet	0.1983	0.1571	0.2996	-0.2690	-0.3554	-0.5442	-0.4464

	pgerm	pgerf	pnerm	perf	pnarm	pnarf	rg5a
pgerm	1.0000						
pgerf	0.8820	1.0000					
pnerm	0.7155	0.8457	1.0000				
perf	0.6219	0.8273	0.9691	1.0000			
pnarm	0.5565	0.7472	0.7979	0.8446	1.0000		
pnarf	0.5103	0.7784	0.7936	0.8646	0.9732	1.0000	
rg5a	-0.1582	0.0483	0.2996	0.4017	0.4885	0.4675	1.0000
rg5s	0.1539	0.1507	0.2467	0.2153	0.4543	0.3859	0.2822
sgerm	0.3272	0.5644	0.6926	0.7234	0.8128	0.8296	0.6575
sgerf	0.3674	0.5792	0.7191	0.7621	0.8395	0.8564	0.6612
snerm	0.2860	0.5309	0.7042	0.7606	0.8168	0.8206	0.7203
snerf	0.3089	0.5692	0.7251	0.7924	0.8677	0.8775	0.7097
snarm	0.2536	0.4781	0.5370	0.6287	0.7705	0.7743	0.6156
snarf	0.2789	0.5408	0.5643	0.6622	0.7978	0.8259	0.5845
gnipc	0.0779	0.2402	0.3784	0.4173	0.4675	0.4889	0.4147
dgdpc	0.4900	0.4845	0.4332	0.3640	0.2086	0.2242	-0.1882
ltdollar	-0.4654	-0.5604	-0.6139	-0.5867	-0.7647	-0.7495	-0.6405
hlthexp	0.1866	0.2846	0.2393	0.2874	0.2050	0.2096	0.0851
edexp	0.1516	0.0536	-0.2276	-0.2182	0.0630	0.0501	-0.3997
stunting	-0.2454	-0.4740	-0.5181	-0.5531	-0.6833	-0.7036	-0.6111
diet	-0.5869	-0.6143	-0.5682	-0.5299	-0.5200	-0.4782	-0.3263

## Annex III

### Detailed results

#### Model 1: Dependent Variable, clf

##### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,669(a)	,448	,406	12,833

a Predictors: (Constant), litf, dgdp, lt1dollar

a Predictors: (Constant), litf, dgdp, lt1dollar

b Dependent Variable: clf

##### Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std Error	Beta		
1	(Constant)	39,469	9,343		4,225	,000
	lt1dollar	,153	,115	,211	1,333	,190
	dgdp	-1,119	,856	-,157	-1,306	,199
	litf	-,305	,097	-,496	-3,150	,003

a Dependent Variable: clf

## Model 2: dependent variable, CLT

### Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	lt1dollar, litf(a)	.	Enter

a All requested variables entered.

b Dependent Variable: clt

### Model Summary

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	,388(a)	15,536	2	49	,000

a Predictors: (Constant), lt1dollar, litf

### Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std Error	Beta	Std Error	Beta
1	(Constant)	34,432	7,704		4,470	,000
	litf	-,256	,084	-,411	-3,056	,004
	lt1dollar	,213	,098	,292	2,170	,035

a Dependent Variable: clt

### Model 3: dependent variable, PGERF

#### Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	edexp, clf(a)	.	Enter

a All requested variables entered.

b Dependent Variable: pgerf

#### Model Summary

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	,242(a)	7,657	2	48	,001

a Predictors: (Constant), edexp, clf

#### Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std Error	Beta	Std Error	Beta
1	(Constant)	96,121	7,280		13,203	,000
	clf	-,577	,176	-,413	-3,285	,002
	edexp	,870	,391	,280	2,229	,031

a Dependent Variable: pgerf

### Model 4: dependent variable, PGERM

#### Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	clm, edexp(a)	.	Enter

a All requested variables entered.

b Dependent Variable: pgerm

**Model Summary**

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	,107(a)	2,886	2	48	,066

a Predictors: (Constant), clm, edexp

**Coefficients(a)**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std Error	Beta		
1	(Constant)	95,687	6,914		13,840	,000
	edexp	,823	,369	,305	2,229	,031
	clm	-,162	,156	-,141	-1,035	,306

a Dependent Variable: pgerm

## Model 5: dependent variable, SGERF

### Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	edexp, clf, gnipc(a)	.	Enter

a All requested variables entered.

b Dependent Variable: sgerf

### Model Summary

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	,526(a)	17,410	3	47	,000

a Predictors: (Constant), edexp, clf, gnipc

### Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std Error	Beta		
1	(Constant)	63,186	8,520		7,416	,000
	gnipc	,006	,002	,411	3,659	,001
	clf	-,809	,207	-,439	-3,914	,000
	edexp	-,415	,414	-,101	-1,002	,322

a Dependent Variable: sgerf

## Model 6: dependent variable, SGERM

### Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	clm, edexp, gnipc(a)	.	Enter

a All requested variables entered.

b Dependent Variable: sgerm

### Model Summary

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	,394(a)	10,205	3	47	,000

a Predictors: (Constant), clm, edexp, gnipc

### Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	Std. Error	Beta
1	(Constant)	62,161	7,978		7,791	,000
	gnipc	,005	,001	,433	3,568	,001
	edexp	-,501	,397	-,144	-1,263	,213
	clm	-,460	,178	-,314	-2,589	,013

a Dependent Variable: sgerm

	rg5s	sgerm	sgerf	snerm	snerf	snarm	snarf
rg5s	1.0000						
sgerm	0.2163	1.0000					
sgerf	0.2152	0.9878	1.0000				
snerm	0.1733	0.9356	0.9282	1.0000			
snerf	0.1639	0.9310	0.9461	0.9865	1.0000		
snarm	0.2840	0.8664	0.8364	0.9061	0.8942	1.0000	
snarf	0.2506	0.8937	0.8883	0.9052	0.9238	0.9844	1.0000
gnipc	0.1982	0.6461	0.6312	0.5843	0.5590	0.4059	0.4744
dgdpc	0.2227	0.1971	0.1860	0.1226	0.1001	0.2954	0.2849
lt1dollar	-0.1236	-0.7510	-0.7565	-0.7236	-0.7507	-0.6405	-0.6673
hlthexp	0.0950	0.3369	0.3462	0.2833	0.3025	0.0073	0.0939
edexp	0.1175	-0.2782	-0.2618	-0.4085	-0.3791	-0.0115	-0.0192
stunting	-0.4669	-0.7943	-0.7785	-0.7532	-0.7649	-0.6373	-0.6857
diet	-0.5089	-0.6022	-0.5812	-0.5635	-0.5469	-0.4355	-0.4300

	gnipc	dgdpc	lt1dol~r	hlthexp	edexp	stunting	diet
gnipc	1.0000						
dgdpc	0.1064	1.0000					
lt1dollar	-0.5092	-0.2600	1.0000				
hlthexp	0.2041	0.2592	-0.2582	1.0000			
edexp	-0.2910	0.0916	0.3335	0.0878	1.0000		
stunting	-0.5852	-0.1306	0.6536	-0.4368	0.1218	1.0000	
diet	-0.5342	-0.4980	0.6030	-0.4395	-0.2698	0.6389	1.0000

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## Endnotes

<sup>1</sup>*Small hands – Children in the working world* – Marcus, Rachel – Save the Children, working paper no. 16

<sup>1</sup> Position on child work – International Save the Children Alliance Position Paper No. 1 – February 1997

<sup>1</sup> *Ibid.*

<sup>1</sup> See for example Matsuno, A. and J. Blagbrough (2005), UNICEF (2002) and UNICEF (2004) on studies in several countries.





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