

IMPACT OF UNPAID HOUSEHOLD SERVICES ON THE MEASUREMENT OF CHILD LABOUR

MICS METHODOLOGICAL PAPERS

Paper No. 2, 2013



Statistics and Monitoring Section,
Division of Policy and Strategy

© United Nations Children's Fund (UNICEF), Statistics and Monitoring Section, Division of Policy and Strategy, October 2013

Permission is required to reproduce any part of this publication. Permission will be freely granted to educational or non-profit organizations.

To request permission and for any other information on the publication, please contact:

UNICEF

Statistics and Monitoring Section

Division of Policy and Strategy

3 United Nations Plaza

New York, NY 10017, USA

Tel: +1 (212) 326-7247

Email: micsinfo@unicef.org

The designations employed in this publication and the presentation of the material do not imply on the part of the United Nations Children's Fund (UNICEF) the expression of any opinion whatsoever concerning the legal status of any country or territory, or of its authorities or the delimitations of its frontiers.

The text has not been edited to UNICEF official publication standards.

Suggested citation: Dayioğlu, M., *Impact of Unpaid Household Services on the Measurement of Child Labour*, MICS Methodological Papers, No. 2, Statistics and Monitoring Section, Division of Policy and Strategy, United Nations Children's Fund, New York, 2013.

IMPACT OF UNPAID HOUSEHOLD SERVICES ON THE MEASUREMENT OF CHILD LABOUR

MICS METHODOLOGICAL PAPERS

Paper No. 2, 2013

Meltem Dayıoğlu



Statistics and Monitoring Section,
Division of Policy and Strategy



About MICS

MICS is an international household survey programme developed by UNICEF to help countries collect and analyse data to monitor the well-being of children and their families.

MICS data are gathered during face-to-face interviews in representative samples of households, generating one of the world's largest sources of statistical information for many low- and middle-income countries. MICS surveys are typically carried out by government organizations, with technical and financial support from UNICEF and its partner agencies.

Since the mid-1990s, MICS has enabled more than 100 countries to produce statistically sound and internationally comparable estimates of a range of indicators in the areas of health, education, child protection and HIV/AIDS. MICS provides data that can also be disaggregated by various geographic, social and demographic characteristics.

As of 2013, four rounds of surveys have been conducted: MICS1 (1995), MICS2 (2000), MICS3 (2005–2007) and MICS4 (2009–2012). The fifth round of MICS (MICS5) is scheduled to be completed in 2014.

MICS results, including national reports and micro-level data sets, are provided free of charge as they become available at www.childinfo.org, UNICEF's dedicated website on monitoring the situation of children and women. MICS Compiler, a simple web-based tool (available at www.micscompiler.org) also provides easy access to MICS results, which can be displayed in the form of graphs, tables and maps.

About MICS Methodological Papers

MICS Methodological Papers are intended to facilitate exchange of knowledge and to stimulate discussion on the methodological issues related to the collection, analysis and dissemination of MICS data; in particular, the papers document the background methodological work undertaken for the development of new MICS indicators, modules and analyses.

The findings, interpretations and conclusions presented in these papers do not necessarily reflect the policies or views of UNICEF.



Acknowledgements

The production of this publication was coordinated by Claudia Cappa and Attila Hancıoğlu (Statistics and Monitoring Section, Division of Policy and Strategy, UNICEF). The paper was written by Meltem Dayıoğlu (Department of Economics, Middle East Technical University, Ankara, Turkey).

Comments were provided by Joanne Dunne, Theresa Kilbane and Clarice da Silva e Paula (Child Protection Section, Programme Division, UNICEF), Bo Robert Beshanski-Pedersen (Statistics and Monitoring Section, Division of Policy and Strategy, UNICEF) and Furio Rosati (Understanding Children's Work, UCW).

Contents

Acronyms.....	iii
1. Introduction	1
2. Data sources	4
3. Definitions of key concepts.....	9
4. A literature review of the impact of unpaid household services on children's well-being	12
5. Time-use patterns of children.....	15
6. The impact of unpaid household services on children's schooling	19
6.1 School attendance	19
6.2 Grade attainment	36
6.3 Grade repetition	39
6.4 School days missed	41
7. Unpaid household services deemed hazardous due to working conditions: The case of Uruguay and Bolivia	44
7.1 Uruguay	44
7.2 Bolivia	46
8. The sensitivity of child labour estimates to the inclusion of hazardous UHS	49
9. Conclusion.....	51
9.1 Findings on links between UHS and schooling.....	51
9.2 Findings on risks faced by children performing hazardous UHS and sensitivity of child labour estimates to definitional changes	53
Bibliography.....	56
Appendix	57

Acronyms

ILO	International Labour Organization
MICS	Multiple Indicator Cluster Surveys
SIMPOC	Statistical Information and Monitoring Programme on Child Labour
SNA	United Nations System of National Accounts
UHS	Unpaid household services



1

Introduction

Child labourers constitute a group of working children who are either too young to work or are engaged in hazardous activities – that is, work that is potentially harmful to their physical, social, psychological or educational development. The guiding international conventions on this issue are the International Labour Organization (ILO) Convention No. 138 on the minimum age for admission to employment and work, ILO Convention No. 182 on the worst forms of child labour, and the United Nations Convention on the Rights of the Child. These international conventions frame the concept of child labour and form the basis for child labour legislation enacted by countries that are signatories.

However, the ILO conventions mentioned above – along with Recommendation No. 190 (Section II.3.a-e) to Convention No. 182, which offers an interpretation of what constitutes hazardous work – refer to work only as activities that fall within the production boundary, as defined by the United Nations System of National Accounts (SNA). Hence, activities that are not economic in nature (that is, that fall *outside* the production boundary) are generally considered not to pose risks to children’s well-being. These activities include unpaid household services (UHS) – more commonly known as household chores – that are carried out by and for household members, including cleaning the house, looking after siblings, washing dishes and shopping. Concern is growing internationally that defining child labour solely on the basis of economic activities limits full understanding of the child labour phenomenon. Indeed, the *Resolution concerning statistics of child labour*, adopted at the 18th International Conference of Labour Statisticians in 2008, recognizes that UHS could be instrumental in giving rise to child labour.¹ Within the framework of the resolution, some countries have, in fact, started to define excessive unpaid household services (defined in terms of hours) as constituting child labour.

UNICEF-supported Multiple Indicator Cluster Surveys (MICS) define child labour according to the Convention on the Rights of the Child and other relevant international conventions. The definition of child labour includes 5- to 11-year-olds engaged in economic activities, 12- to 14-year-olds who work (in economic activities) for 14 or more hours per week, as well as children who carry out hazardous UHS.² Whether the child is engaged in hazardous UHS is determined by the intensity of the work performed. The current operational definition has established 28 hours per week as the threshold for hazardous UHS. Thus children engaged in such activities for more than 28 hours per week are categorized as child labourers.

¹ This resolution draws from the *Resolution concerning the measurement of working time* also adopted at the 18th International Conference of Labour Statisticians, as discussed in Chapter 5 of this report.

² Multiple Indicator Cluster Surveys began collecting data on child labour during the second round of MICS (MICS2), conducted mainly in 2000. Some modifications to the original MICS2 module for child labour were introduced in the third round of MICS (MICS3, 2005–2007) and again in the fourth round (MICS4, 2009–2012). A revised set of questions on child labour was developed for use in MICS5. The MICS module in use until 2012 did not collect information on 15- to 17-year-olds, but the new module covers this age group as well as younger children.

Three potentially important issues arise within the current definition of child labour in MICS as it concerns UHS. First, how appropriate is it to use 28 hours per week to demarcate hazardous from non-hazardous UHS? Would a different threshold change the estimates of child labour in a meaningful way? Second, in parallel with the definition of hazardous economic activities, should age be the basis for defining the threshold of hours for hazardous UHS? Third, is it appropriate to define economic and UHS activities separately in identifying child labourers?

The answer to the first question essentially rests on the identification of activities that could potentially cause harm to the physical, social, psychological or educational development of children. Currently, no international instruments exist to collect data on the health risks associated with performing household chores. The standard questionnaire developed by ILO for use in labour surveys³ and the new MICS module attempt to identify the potential harm inflicted upon children by economic activities through a series of questions that establish the working conditions of children. However, similar information is not generally available for UHS. The only widely collected information that could potentially reveal whether UHS activities are harmful for children is their intensity, as measured by weekly hours. Given the absence of any health indicators on children aged 5 to 17 in ILO's questionnaire and in MICS, the only way to determine the harmful effects of UHS is through their effect on children's schooling. Is the schooling of children compromised as a result of UHS? If so, beyond what number of hours?

The answer to the second question rests on the negative effects of UHS on the schooling of children of different ages, assuming that older children have the potential to carry out such services for longer hours before they start to affect their schooling negatively. The third question is of concern since children tend to combine UHS with economic activities. Background work for the revised child labour module of MICS has shown that children are likely to combine economic work with household chores.⁴ Furthermore, the correlation between UHS and hours engaged in economic activity is not necessarily negative. It only tends to become negative as economic work hours increase. At low levels of economic work, UHS and economic work hours may simultaneously increase, which may have to do with the joint nature of these activities. However, as children begin to put in substantial hours of economic activity, UHS hours tend to diminish. The joint consideration of hours to demarcate hazardous work (of an economic and non-economic nature), however, requires a conversion factor, since an hour of housecleaning may not have the same effect, for example, on the well-being of children as an hour of washing cars in a commercial car wash. Current knowledge of the impact of various activities on children's well-being is not sufficient to suggest an appropriate conversion factor between the two activities. Given the knowledge gap in this area, as well as the policy concern that child labour due to UHS rather than economic activities requires a different set of interventions, the natural next step would be the inclusion of UHS in the definition of child labour, but considered separately from economic activities.

The objective of this paper is to contribute to the formulation of a definition of child labour that includes hazardous UHS. This definition is meant to be used to report on the prevalence of child labour within the context of MICS. To do

3 The ILO helps countries collect information on working children through its Statistical Information and Monitoring Programme on Child Labour (ILO-SIMPOC). Its model child labour questionnaire is based on ILO Convention No. 138 on minimum age for admission to employment and work (1973) and Convention No. 182 on the worst forms of child labour (1999), which covers children aged 5 to 17.

4 Dayioğlu, M., *How Sensitive Are Estimates of Working Children and Child Labour to Definitions? A comparative analysis*, MICS Methodological Papers, No. 1, Statistics and Monitoring Section, Division of Policy and Strategy, United Nations Children's Fund, New York, 2012.

so, quantitative analyses of data were conducted from 16 low- and middle-income countries around the world. The data come from Child Labour Surveys conducted by the statistical institutes of these 16 countries, with technical and financial assistance from the ILO's International Programme on the Elimination of Child Labour. Given the complexity of the issues raised above and the limited availability of data to tackle them, the paper attempts to answer only three of the many questions raised:

1. What is the prevalence of UHS among children of different ages? What is the proportion of children that combine UHS with economic activities?
2. What is the link between schooling and UHS?
3. What is the impact of UHS on child labour estimates?

In answering these questions, a gender- and age-sensitive perspective is adopted where appropriate. Therefore data are disaggregated by age and sex. The age groups analysed are 5- to 11-year-olds, 12- to 14-year-olds and 15- to 17-year-olds.

This paper is organized as follows: Chapter 2 briefly describes the data used in this study, Chapter 3 presents the definitions of key variables, and Chapter 4 provides a literature review of the impact of UHS on children's well-being. Chapter 5 is a descriptive overview of children's involvement in UHS, economic work and school attendance; this chapter also discusses the nature of UHS carried out by children. Chapter 6 investigates the relationship between UHS and children's schooling on the basis of four schooling indicators: school attendance, grade attainment, grade repetition and school days missed. Chapter 7 considers the cases of Uruguay and Bolivia, where hazardous UHS is determined on the basis of working conditions. Chapter 8 assesses the sensitivity of child labour estimates to various definitions of hazardous UHS, and Chapter 9 draws final conclusions.



2

Data sources

The data used in this paper come from ILO-supported Child Labour Surveys. The choice of Child Labour Surveys over UNICEF-supported MICS, which also collect information on child labour and UHS, is mainly due to differences in the age groups covered by the two surveys. While Child Labour Surveys cover children aged 5 to 17, information currently available through MICS only covers children aged 5 to 14.

TABLE 2.1 **Countries with Child Labour Surveys by year and region**

Country	Region	Year	Age group
Azerbaijan	Asia and the Pacific	2005	5-14
Bangladesh	Asia and the Pacific	2002	5-17
Cambodia	Asia and the Pacific	2001	5-17
Indonesia	Asia and the Pacific	2009	5-17
Mongolia	Asia and the Pacific	2006	5-17
Nepal	Asia and the Pacific	2003	6-18
Philippines	Asia and the Pacific	2001	5-17
Albania	Europe and Central Asia	2010	5-17
Georgia	Europe and Central Asia	1999	7-17
Kyrgyzstan	Europe and Central Asia	2007	5-17
Republic of Moldova	Europe and Central Asia	2010	5-17
Turkey	Europe and Central Asia	2006	6-17
Ukraine	Europe and Central Asia	1999	5-17
Argentina	Latin America and the Caribbean	2004	5-17
Belize	Latin America and the Caribbean	2001	5-17
Bolivia	Latin America and the Caribbean	2008	5-17
Brazil	Latin America and the Caribbean	2001	5-17
Chile	Latin America and the Caribbean	2003	5-17
Colombia	Latin America and the Caribbean	2001	5-17

TABLE 2.1 (cont.)

Country	Region	Year	Age group
Costa Rica	Latin America and the Caribbean	2002	5-17
Dominican Republic	Latin America and the Caribbean	2000	5-17
Ecuador	Latin America and the Caribbean	2006	5-17
El Salvador	Latin America and the Caribbean	2003	5-17
Guatemala	Latin America and the Caribbean	2006	7-17
Honduras	Latin America and the Caribbean	2002	5-17
Jamaica	Latin America and the Caribbean	2002	5-17
Nicaragua	Latin America and the Caribbean	2000	5-17
Panama	Latin America and the Caribbean	2000	5-17
Peru	Latin America and the Caribbean	2007	5-17
Uruguay	Latin America and the Caribbean	2009	5-17
Egypt	Middle East and North Africa	2010	5-17
Jordan	Middle East and North Africa	2007	5-17
Benin	Sub-Saharan Africa	2008	5-17
Burkina Faso	Sub-Saharan Africa	2008	5-17
Cameroon	Sub-Saharan Africa	2007	5-17
Ethiopia	Sub-Saharan Africa	2009	5-17
Ghana	Sub-Saharan Africa	2000	5-17
Kenya	Sub-Saharan Africa	1999	5-17
Madagascar	Sub-Saharan Africa	2007	5-17
Mali	Sub-Saharan Africa	2005	5-17
Namibia	Sub-Saharan Africa	1999	6-18
Niger	Sub-Saharan Africa	2008	5-17
Rwanda	Sub-Saharan Africa	2008	5-17
Senegal	Sub-Saharan Africa	2005	5-17
South Africa	Sub-Saharan Africa	1999	5-17
United Republic of Tanzania	Sub-Saharan Africa	2001	5-17
United Republic of Tanzania	Sub-Saharan Africa	2006	5-17
Zambia	Sub-Saharan Africa	1999	5-17
Zambia	Sub-Saharan Africa	2008	5-17
Zimbabwe	Sub-Saharan Africa	1999	5-17

Source: ILO-SIMPOC web database.

As of 2010, Child Labour Survey data existed for a total of 48 countries listed in Table 2.1. In 2007, the ILO Statistical Information and Monitoring Programme on Child Labour (SIMPOC) modified its model child labour questionnaire to better capture information on working children and child labourers. Hence, the original plan was to use data from 17 countries. Initial screening of survey questionnaires, however, showed that UHS-related questions were missing for Ethiopia and Zambia. Furthermore, the data set for Burkina Faso failed on a number of internal checks. In place of these countries, it was decided to use Child Labour Survey data for Mali and Senegal. Mali used a questionnaire that is similar to the latest (2007) SIMPOC model questionnaire. Senegal's questionnaire is somewhat different, but nonetheless includes questions that are key for this study. Even among countries that have adopted the SIMPOC model questionnaire, certain differences exist, which are pointed out later in this paper.⁵ Of the 16 countries chosen for analysis, shown in light grey shading in Table 2.1, seven are in sub-Saharan Africa, two are in the Middle East and North Africa region, three are in Latin America and the Caribbean, three are in Europe and Central Asia, and one is in Asia and the Pacific.⁶

TABLE 2.2A Sample sizes by country and age groups

Country	Ages 5-17	Ages 5-11	Ages 12-14	Ages 15-17
Albania	6,003	2,569	1,747	1,687
Benin	8,641	5,401	1,872	1,368
Bolivia	9,310	5,091	2,299	1,920
Cameroon	17,621	9,820	3,938	3,863
Egypt	66,922	35,537	16,375	15,010
Indonesia	13,389	7,461	3,172	2,756
Jordan	24,319	13,114	5,940	5,265
Kyrgyzstan	7,080	3,392	1,829	1,859
Madagascar	14,396	8,572	3,204	2,620
Mali	10,699	6,440	2,320	1,939
Niger	8,218	5,277	1,673	1,268
Peru	12,560	6,582	3,167	2,811
Republic of Moldova	6,770	3,005	1,658	2,107
Rwanda	11,664	6,674	2,790	2,200
Senegal	12,373	6,951	2,778	2,644
Uruguay	10,209	4,995	2,624	2,590
Total	240,174	130,881	57,386	51,907

Source: Author's calculations from pooled Child Labour Survey data.

⁵ In Cameroon, due to financial constraints, the UHS module was administered to only half of the surveyed households. However, the sampled households for UHS are representative of the population.

⁶ Most of the data sets and relevant documentation were obtained from ILO-SIMPOC's web database, available at: <<http://www.ilo.org/ipec/ChildlabourstatisticsSIMPOC/Questionnairesurveysandreports/lang--en/index.htm>>. However, at the time of writing, the microdata on a number of countries had not yet been uploaded. These data sets were obtained directly from SIMPOC.

TABLE 2.2B Child population by country and age groups

Country	Ages 5-17	Percentage distribution Ages 5-17	Ages 5-11	Ages 12-14	Ages 15-17
Albania	698,598	0.6	354,349	163,642	180,606
Benin	1,952,227	1.6	1,219,927	421,647	310,653
Bolivia	3,036,626	2.5	1,702,270	683,938	650,417
Cameroon	6,025,602	5.0	3,504,013	1,289,455	1,232,134
Egypt	17,151,411	14.1	9,077,239	4,179,193	3,894,978
Indonesia	58,837,224	48.4	30,977,811	12,857,267	15,002,146
Jordan	1,785,596	1.5	992,391	412,941	380,264
Kyrgyzstan	1,467,352	1.2	719,710	370,524	377,118
Madagascar	6,510,210	5.4	3,895,562	1,445,648	1,169,000
Mali	4,430,833	3.6	2,715,772	948,466	766,596
Niger	3,813,381	3.1	2,521,667	755,680	536,034
Peru	8,024,774	6.6	4,194,340	2,023,207	1,807,227
Republic of Moldova	596,906	0.5	270,765	149,624	176,516
Rwanda	2,875,986	2.4	1,651,455	685,701	538,829
Senegal	3,760,271	3.1	2,098,818	836,284	823,973
Uruguay	685,123	0.6	359,245	164,810	161,068
Total	121,665,107	100.0	66,255,335	27,388,028	28,007,559

Note: Sampling weights are used.

Source: Author's calculations from pooled Child Labour Survey data.

The sample figures for each country, shown in Table 2.2A, are inflated to obtain population figures, shown in Table 2.2B, using the sampling weights already included in the data sets.⁷ Hence, in the pooled data, each country is represented by the size of its child population. Accordingly, the total child population of these 16 countries is estimated at 121.7 million. Indonesia has the highest child population: The country is home to 48.4 per cent of children in this study. Indonesia is followed by Egypt, where the proportion of children in the country's population is 14.1 per cent. Peru is third, with a child population of 6.6 per cent. The remaining countries have shares that are less than 6 per cent each.

In the construction of schooling indicators, the timing of Child Labour Surveys is important. The surveys are typically carried out when schools are open. However, since the school indicators are based on age, what also matters is the timing of the survey in relation to the month that school starts. For example, if, in a given country, the school term runs from September

⁷ Sampling weights available in the data set are calibrated to represent the child population in each country.



YEMEN Sarah, age 11, washes dishes at her home in the rural district of Al Munira in Hodeidah Governorate. She does not go to school, and spends her days performing domestic chores. Sarah's parents claim that they cannot afford to educate her.

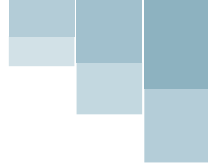
to June and the survey is carried out in May, some children who appear to be out of school may in fact be due to start school in the fall of that year. Hence, surveys that are carried out well into the school year run the risk of underestimating certain school indicators, such as school attendance and grade progression. Appendix Table A1 shows the survey months and the months that schools start and end for the countries under study. Based on this information and the age of the child, and for the purpose of estimating school indicators, we calculate the age of the child at the start of the school year. In rejuvenating the age of the child,⁸ the procedure was as follows: If the time lapse between the survey application and the starting month for school is more than six months, it was assumed that the child was a year younger than what he/she is reported to be in the survey.⁹ Table A1 also lists the compulsory age for starting school for various countries analysed in the paper. The school indicators are computed by taking these ages (mostly 6 or 7) as the earliest age a child is expected to start school.¹⁰ Some children start school early, however.¹¹ These children constitute 3.1 per cent of all children aged 6 and above. In the calculation of schooling indicators, these children were excluded from the analysis.

⁸ Rejuvenation refers to age adjustment to reflect the child's age at the start of the school year.

⁹ Child Labour Surveys do not collect the exact date of birth, but the age of the child in a given calendar year.

¹⁰ The minimum compulsory school age refers to the age at which children are expected to start primary school. In Peru, however, pre-primary education is compulsory, meaning that the compulsory school age is three. In none of the other countries studied is pre-primary school compulsory. To render Peru comparable with other countries, we take the age Peruvian children typically start primary school (age six) as the starting age for compulsory schooling.

¹¹ Or, they may appear to start early due to a measurement error in the age of the child.



3

Definitions of key concepts

This section provides definitions of key concepts used in this paper.

Child: In line with the 1989 Convention on the Rights of the Child, a child is defined as an individual under the age of 18. Since it is assumed that a child under age five is too young to work or to start school, the group at risk of child labour consists of children aged 5 to 17 years only.

Economic activity: Includes all types of establishments or businesses in which persons are engaged in the production and/or distribution of goods and services. Activities that fall within the production boundary of the SNA are considered economic activities.

Unpaid household services: Services rendered by and for household members without pay. They are more commonly referred to as ‘household chores’ and include activities such as cooking, ironing, housecleaning, shopping, looking after children, small repairs and the like. These activities fall within the general production boundary but outside the SNA. However, a few UHS – major household repairs, for instance – are treated within the SNA production boundary and are therefore considered economic work.¹²

Child employment: Children aged 5 to 17 are defined as employed if they worked for at least one hour during the reference period or if they have a job or business from which they are temporarily absent. The SNA delineates what is and what is not considered an economic activity. Broadly speaking, all market-oriented activities, production of goods for one’s own consumption and certain services rendered for and by household members (such as major household repairs) are considered economic activities, and those engaged in them are considered to be employed. Within this framework, fetching water and collecting firewood for household use are also considered economic activities. Employment may take place in the formal/informal sector or within/outside household premises.

Child labour: Children who are engaged in work unsuitable for their capacities as children or in work that may jeopardize their health, education or moral development. The guiding principles in identifying child labourers are the ILO Convention No. 138 on minimum age for admission to employment and work, ILO Convention No. 182 on the worst forms of child

¹² Fetching water and collecting firewood for household use are considered economic work since they fall under the production of goods.

labour, the Convention on the Rights of the Child, and the *Resolution concerning statistics of child labour*. For the purposes of this study, child labourers are defined as:

- Children aged 5 to 11 who are employed (in economic activities as defined above), even if only for one hour during the reference period, which in this study is a week
- Children aged 12 to 17 who are employed (in economic activities as defined above) under hazardous conditions that include: 14 or more hours per week of employment for those aged 12 to 14; 43 or more hours per week of employment for those aged 15 to 17; and employment under other hazardous conditions (discussed below)
- Children aged 5 to 17 employed in hazardous UHS (discussed below).

This definition may differ from the one used by individual countries covered in the analysis due to the use of different ages and/or hourly cut-offs in designating hazardous work, local legislation identifying a different set of hazardous activities, and/or the exclusion of UHS from the definition of child labour.¹³ In the interest of comparability, national child labour definitions for the countries under study were not used; rather, a single definition was employed throughout this paper to measure child labour. It is important, however, to note that the 14-hour cut-off designated for 12- to 14-year-olds is based on the 'light work' provision stipulated for this age group in Article 7 of Convention No. 138. Although a specific hourly limit is not spelled out in this Convention, a 14-hour cut-off is generally accepted as the maximum allowable hours of work for this age group (see Article 3 of the *Resolution concerning statistics of child labour*). This definition of light work as well as the 43-hour cut-off designated for older children are used by the ILO in generating global child labour estimates.¹⁴ Table 3.1 presents a schematic illustration of the operational definition of child labour used in this paper.

It should also be noted that the unconditionally worst forms of child labour – forced and bonded child labour, commercial sexual exploitation of children and similar practices – are not likely to be captured by household surveys. Therefore, it can be expected that Child Labour Surveys underestimate the true magnitude of the child labour problem.

Employment under hazardous conditions: Economic activities that may jeopardize children's health, education or moral development. Such activities are defined in Recommendation No. 190 (Section II.3.a-e) to Convention No. 182 as:

- a) work that exposes children to physical, psychological or sexual abuse
- b) work underground, under water, at dangerous heights or in confined spaces
- c) work with dangerous machinery, equipment and tools, or that involves the manual handling or transport of heavy loads
- d) work in an unhealthy environment that may, for example, expose children to hazardous substances, agents or processes, or to temperatures, noise levels or vibrations damaging to their health
- e) work under particularly difficult conditions, such as work for long hours or during the night, or work where the child is unreasonably confined to the premises of the employer.

13 International conventions that form the basis for child labour legislation provide a certain degree of flexibility to countries in defining what constitutes hazardous work and the minimum age for employment (with some restrictions).

14 International Labour Organization, *Global Child Labour Trends 2000-2004*, ILO, Geneva, 2006.



These activities are operationalized through a series of questions in the Child Labour Survey. These questions (with the exception of questions on psychological and sexual abuse)¹⁵ are used to determine whether children are employed under hazardous conditions.

Hazardous unpaid household services: UHS that may jeopardize children's health, education or moral development. Different hourly thresholds can be used to demarcate hazardous from non-hazardous UHS. In Table 3.1, the hourly threshold used to define hazardous UHS is shown as a question mark since there is no agreed-upon or commonly used threshold for UHS apart from the 28 hours per week currently used by UNICEF for all age groups.

TABLE 3.1 **Framework for the statistical identification of child labour**

Age group	General production boundary					
	SNA production				Non-SNA production	
	Light work	Regular work	Worst forms of child labour		Hazardous unpaid household services	Other non-SNA production
Children aged 5-11	Below minimum age for light work	Below minimum age for work	Employment for 43 or more hours per week or under hazardous conditions	Children trafficked for work; forced and bonded child labour; commercial sexual exploitation of children; use of children for illicit activities and armed conflict	Hourly threshold?	
Children aged 12-14	Less than 14 hours/week	14 or more hours/week			Hourly threshold?	
Children aged 15-17		43 or more hours/week			Hourly threshold?	

Note: Based on schematic representation in ILO (2009).

 Denotes child labour as defined by the resolution  Denotes activities not considered child labour

15 Children subjected to psychological and sexual abuse are excluded from the definition of child labour for two main reasons: 1) The Child Labour Surveys of some countries do not include questions aimed at measuring this aspect of child labour, and 2) the child labour module of MICS does not include these types of work-related questions.



4

A literature review of the impact of unpaid household services on children's well-being

None of the large-scale nationally representative household surveys collect information on the potential hazards children face when engaging in unpaid work within the household.¹⁶ Studies that simultaneously collect data on children's involvement in economic work and UHS and their health status are also rare. As a result, little literature is available on the health consequences of unpaid household labour. One exception is a study undertaken by Francavilla and Lyon (2003), who use data from six countries – Brazil, Guatemala, Guinea, Kazakhstan, Peru and Zambia¹⁷ – to investigate the relationship between child health and engagement in UHS.¹⁸ They use self-reported incidences of illness in the week preceding the survey and body mass index (available for Brazil and Guatemala only) as indicators of child health. They find no evidence that children engaged in UHS (for at least 4 hours a day or 28 hours a week) have a lower body mass index or suffer from higher morbidity than children not involved in unpaid work in the household. Neither does the intensity of UHS seem to be related to the health measures used. The study also looks at the relationship between types of UHS and health outcomes, but did not establish a clear pattern.

An examination of the link between UHS and health outcomes is made more difficult by the fact that the majority of children are involved in a number of activities. The countries considered by Francavilla and Lyon are no exception: Significant proportions of children are engaged in both economic activities and UHS, and even larger proportions attend school. Hence, isolating the effects of the observed outcomes becomes extremely difficult. Under these circumstances, it is difficult to ascribe any health effects found in the data to UHS since they may very well stem from children's economic activities. Health knowledge acquired in school may, on the other hand, help reduce illness and therefore minimize the adverse health effects of UHS and/or economic work. Given the complexity of the health-UHS relationship and the limited data at hand, the authors argue that the failure to find systematic differences in children's health outcomes does not necessarily imply that unpaid household labour does not have adverse health effects. They recommend the use of better health indicators as well as research methodologies to understand the UHS-health link.

In an ILO study of Cambodia, Ghana and Guatemala, a meaningful relationship between hours engaged in non-market (economic and non-economic) activities and children's health outcomes (in the form of self-reported illness and injury)

¹⁶ Exceptions are Bolivia and Uruguay, which collected information on the conditions under which children perform UHS within the framework of Child Labour Surveys (these countries are discussed more fully in Chapter 7).

¹⁷ Data sources are Pesquisa sobre padronés de vida (PPV) 1996-1997 for Brazil; Encuesta de Condiciones de Vida (ENCOVI) 2000 for Guatemala; Enquête intégrale sur les conditions de vie des ménages 1994 for Guinea; Living Standards Survey 1996 for Kazakhstan; Encuesta nacional de hogares sobre medición de niveles de vida (ENNIV) 1994 for Peru; and Living Conditions Monitoring Survey I 1996 for Zambia. Source: Francavilla, F., and S. Lyon, 'Household Chores and Child Health: Preliminary evidence from six countries', Understanding Children's Work Project Working Paper Series, no. 43876, 2003.

¹⁸ Also included in this category are fetching water and collecting firewood. These two tasks are considered economic activities in this study.



NEPAL Saru Saud, age 7, carries corn stalks home from a field in impoverished Biraltoli Village in Achham District in Far-Western Region. Saru is the youngest of four children (all girls) in their family. The older girls, who all attend school, help their mother in the paddy and also tend cattle.

could not be established either.¹⁹ However, a negative relationship between economic work hours and health outcomes of children was observed in Cambodia, where information on illness and injury was collected in reference to the economic work carried out by children. The report cautions that the design of the questionnaire may have affected the identification of health issues related to various forms of work.

In contrast to health issues, data on schooling are routinely collected in household-based surveys. As a result, a larger number of studies investigate the relationship between UHS and schooling. Levison and Moe (1998), using data from Peru; Levison, Moe and Knaul (2001), using data from Mexico; and Assaad et al. (2003), using data from Egypt, have found substantially larger proportions of girls than boys engaged in UHS. Furthermore, in all three studies, the trade-off between schooling and work is found to be stronger – especially for girls – when work is defined to include UHS. In none of the three studies is unpaid housework considered alone. The main argument made in all three papers is that the traditional definition of work (based solely on economic activities) falls short in describing the time-use patterns of children, which are very much affected by gender and preclude a full understanding of the effect of work on schooling outcomes.

Despite the availability of data, it is difficult to assess the role of UHS on schooling outcomes among children. Showing that children engaged in UHS (or both UHS and economic activities) have lower school attainment does not necessarily imply that performing such services (or work in general, including both UHS and economic work) prevents children from

¹⁹ International Labour Organization, *Children's Non-Market Activities and Child Labour Measurement: A discussion based on household survey data*, ILO, Geneva, 2007.

attending school. A common underlying factor may simultaneously cause children to remain out of school and engage in UHS. Establishing causality requires that time allocation to separate activities be identified. This in turn necessitates the use of an instrument that attributes the allocation of time to one activity but not to another. In the data sources that routinely collect data on child labour and schooling, such identifying variables are often missing. Assaad et al. (2003) use a series of variables, such as the existence of a household-based establishment, log wages in the locality where children live and other variables defining the local economy as determinants of children's employment (defined in terms of economic activities and UHS). The key assumption they make is that these variables do not directly affect children's schooling. The authors, however, do not investigate the role of UHS alone on the schooling outcomes of children. Rather, they define work in a number of ways that exclude and include UHS. It is not clear whether any of the demand variables considered would be good predictors of children's involvement in UHS.

Gunnarsson et al. (2006) investigate the impact of child labour on academic achievement as measured by mathematics and language skills in grades 3 and 4 in nine Latin American countries.²⁰ The data come from a special survey collected by the Latin American Laboratory for Assessment of the Quality of Education. The results of the survey indicate that children who often work outside the home have mathematics and language test scores that are, on average, 22 per cent and 27 per cent lower, respectively, than those who almost never work outside the home. In contrast, children who often work inside the home have test scores that are not that different from children who almost never work inside the home. More specifically, they note that children who often work inside the home score, on average, 7.1 per cent and 6.8 per cent lower in math and language tests, respectively, than children who almost never work inside the home. Furthermore, in all nine countries, children engaged in market activities are found to perform worse than children not working outside the home; however, for work inside the home, this is true only in three of the nine cases. In fact, noting that a meaningful variation in the subsamples considered (male-female, urban-rural) does not exist, Gunnarsson et al. do not pursue their analysis further to determine whether there is indeed a negative causal relationship between academic achievement and 'household labour'. However, they do take the observed negative correlation between work outside the home and academic achievement one step further and find that work outside the home indeed reduces math test scores by 16 per cent and language test scores by 11 per cent. They exploit the differences in truancy age across the nine countries in identifying the causal impact of work outside the home on academic achievement. In sum, while a slight negative association seems to exist between work inside the home and academic achievement, it is not clear whether this has anything to do with children's involvement in UHS.

Using unique panel data from China,²¹ the ILO (2007) study mentioned above investigates the causal link between the time devoted to non-market activities and children's school attendance. The results indicate that hours spent in non-market activity reduce the likelihood that children will attend school.

As this literature review has shown, a large knowledge gap exists on the effects of UHS on children's health and schooling outcomes. Given that currently collected data fall short of providing a full understanding of the impact of UHS on various outcomes among children, specialized surveys need to be carried out to produce data suitable for such analyses.

20 Argentina, Bolivia, Brazil, Chile, Colombia, Dominican Republic, Honduras, Paraguay and Peru.

21 China Health and Nutrition Survey data from 1989, 1991 and 1993.



5

Time-use patterns of children

In a total of 16 countries, 56.9 per cent of children carry out unpaid household services. This figure increases to 65.8 per cent among girls, nearly 18 percentage points higher than boys (Table 5.1). In contrast, school attendance rates for boys and girls in these countries – around 86 per cent – are roughly the same. When it comes to economic activities (or employment), a small gender gap emerges: An estimated 21.1 per cent of boys are employed, versus 17.4 per cent of girls. The overall rate shows that almost one in five children are employed. Notwithstanding these general observations, sizeable differences are found among countries in the prevalence of UHS, school attendance and employment (see Appendix Table A2).

TABLE 5.1 Proportion of children engaged in various activities, by gender and age

Activities	Total	Male	Female	Ages 5-11	Ages 12-14	Ages 15-17
Unpaid household services	56.9	48.5	65.8	45.2	69.1	72.6
School attendance	85.8	86.1	85.4	91.6	87.7	71.7
Economic activity	19.3	21.1	17.4	12.8	23.1	31.1

Notes: School attendance covers school-aged children. Age categories refer to the age of the child at the start of the school term.

Source: Author's calculations from pooled Child Labour Survey data.

Children's activities show variations by age. While 45.2 per cent of 5- to 11-year-olds are engaged in UHS, this proportion increases to 69.1 per cent among 12- to 14-year-olds and to 72.6 per cent among 15- to 17-year-olds (Table 5.1). The school attendance rate among children of compulsory school age (6 or 7, up to 11) is 91.6 per cent. This rate declines slightly to 87.7 per cent among 12- to 14-year-olds. As children pass compulsory school age, which usually ends when children turn 15 or 16, school attendance drops sharply.²² Among 15- to 17-year-olds, average school attendance is 71.7 per cent. The prevalence of employment increases with age. While only 12.8 per cent of 5- to 11-year-olds are employed, the share increases to 23.1 per cent among 12- to 14-year-olds and to 31.1 per cent among 15- to 17-year-olds.

The majority of children engaged in economic activities also perform UHS. Table 5.2 shows that only 3.7 per cent of children are engaged solely in economic activities.²³ In contrast, 41.9 per cent of children perform UHS only. The proportion of

²² The duration of compulsory schooling varies between 6 and 14 years among the countries studied. The longest compulsory schooling is in Peru, at 14 years.

²³ Children with missing information on either UHS or employment have been excluded. Therefore, the proportion of children engaged in economic activities and UHS does not exactly match the proportions reported in Table 5.1.

TABLE 5.2 **Proportion of children engaged in multiple work activities, by gender and age**

Activities	Total	Male	Female	Ages 5-11	Ages 12-14	Ages 15-17
Economic activity only	3.7	5.9	1.3	2.2	3.8	6.9
UHS only	41.9	33.9	50.3	35.2	50.6	49.0
Economic activity + UHS	15.0	14.6	15.5	10.0	18.5	23.6
Neither	39.4	45.6	33.0	52.6	27.1	20.5

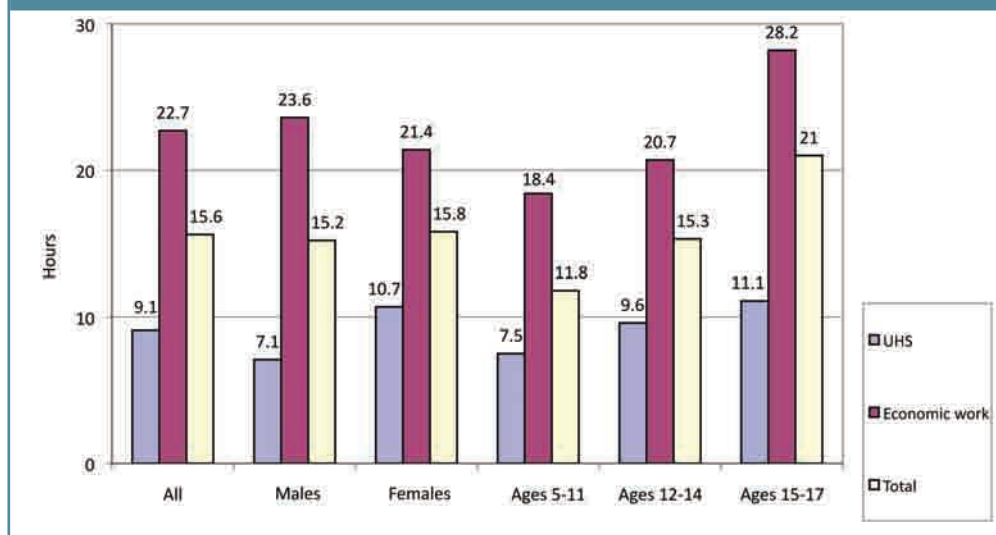
Source: Author's calculations from pooled Child Labour Survey data.

children who carry out both economic activities and UHS is 15 per cent. Larger proportions of boys and older children are found to be engaged in economic activities only, though the highest proportion does not exceed 7 per cent. The proportion of girls who are engaged in UHS only is higher than that of boys, and a slightly higher proportion of girls than boys combine UHS with economic activities. The proportion of children engaged in multiple activities is also higher among older children. This exercise shows that the proportion of children who combine economic activities with UHS is not negligible. Hence, any definition of hazardous work will need to consider carefully children engaged in multiple activities.

The intensity of UHS and economic activities carried out by children has also been documented and measured – by hours of work per week. Figure 5.1 shows the average hours per week that children are engaged in various activities, by gender and age. The mean hours of UHS are estimated at 9.1 hours per week. This is considerably lower than the time spent in economic work, which is estimated at 22.7 hours. When the hours children spend in both activities are added together and averaged, the weekly total amounts to 15.6 hours. Girls tend to put more time into UHS than boys, while boys put a larger number of hours into economic activities than girls. Overall work hours for boys and girls tend to be similar, and are estimated at 15.2 hours per week and 15.8 hours per week, respectively. Younger children work fewer hours than older children. In terms of hours spent in UHS, a difference of about 2 hours a week is found between 5- to 11-year-olds and 12- to 14-year-olds. This difference decreases to 1.5 hours between 12- to 14-year-olds and 15- to 17-year-olds. In contrast, the difference in the hours put into economic activities is larger: A difference of 7.5 hours is found between 12- to 14-year-olds and 15- to 17-year-olds. Hence, it appears that age plays a more important role in determining the hours engaged in economic activities than it does in determining UHS hours.

Figure 5.2 illustrates the cumulative distribution of weekly UHS and economic work hours and their totals. What is apparent from this graph is that a very small proportion of children perform unpaid household labour for substantially long hours. For over 80 per cent of children, the hours devoted to UHS do not exceed 15 hours per week. For economic work, this is true for less than 40 per cent of working children. Appendix Figures A1–A3 also show the cumulative distribution of hours in UHS and economic activity by gender, which confirm the results noted earlier: Boys tend to devote more hours per week to economic activities than girls, while girls devote more hours to UHS than boys. In terms of total work hours, the distribution patterns for boys and girls tend to be very similar.

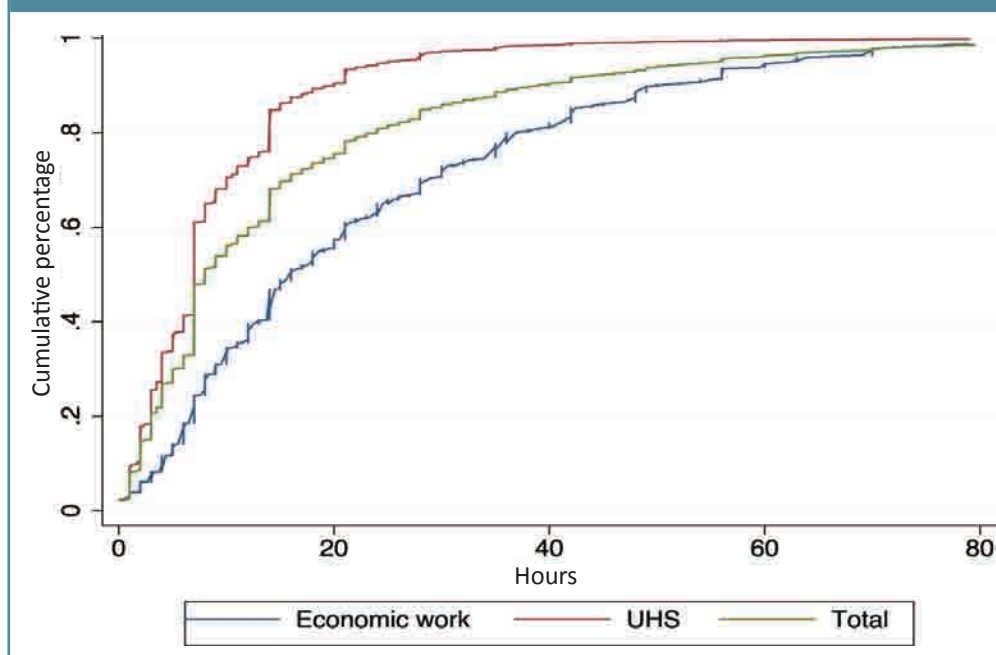
Figure 5.1 Average weekly work hours of children engaged in various activities, by gender and age



Note: Total reflects average of the sum of UHS and employment hours.

Source: Author's calculations from pooled Child Labour Survey data.

Figure 5.2 Cumulative distribution of weekly work hours in various activities



Note: Total reflects average of the sum of UHS and employment hours.

Source: Author's calculations from pooled Child Labour Survey data.

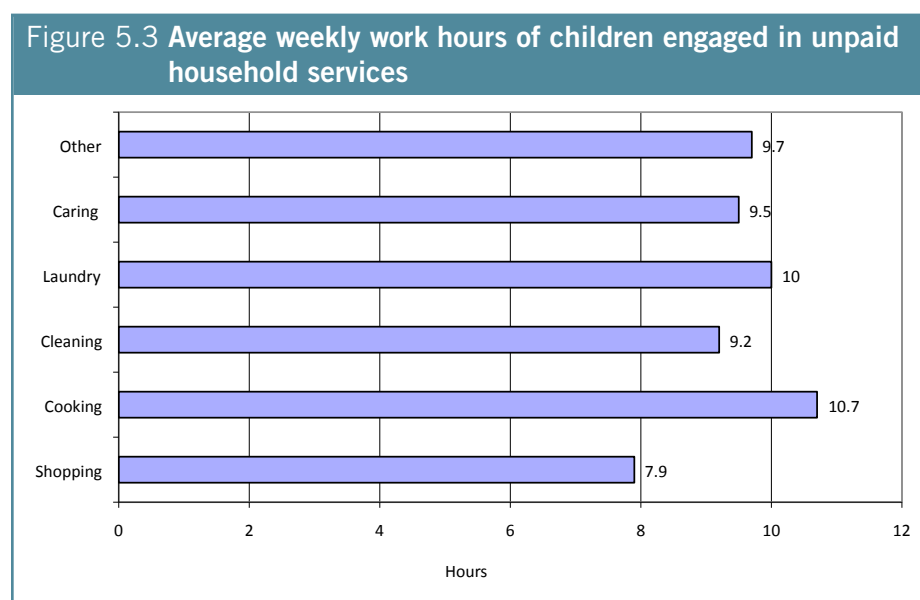
The nature of UHS carried out by children has also been documented. Unpaid household services have been broken down into six main types of activities: shopping and doing household errands; cooking; cleaning the house and washing utensils; doing laundry; caring for young, elderly or disabled members of the household; and other activities. The category 'other' includes small household repairs and other miscellaneous activities. According to the SNA, fetching water and collecting firewood are economic activities. Therefore, children engaged in this way are considered to be employed. However, a number of countries used in this study – Bolivia, Cameroon, Madagascar, Mali, Peru and Senegal – have defined these activities as UHS.²⁴ In these countries, the 'other' category includes fetching water and collecting firewood.

24 Many of these children also carry out other types of UHS. Therefore they are unlikely to cause a gross overestimation in the prevalence of UHS. However, including these children within UHS means that the hours devoted to UHS will be overestimated. Since information on hours spent in any type of UHS is collected through a single question, it is not possible to adjust the hours these children spend in UHS or economic activities.

TABLE 5.3 Percentage of children engaged in unpaid household services, by type of activity, among children engaged in UHS only

Activities	Total	Male	Female	Ages 5-11	Ages 12-14	Ages 15-17
Shopping	42.5	42.9	42.2	42.1	42.7	42.8
Cooking	38.0	25.6	47.6	25.5	43.4	51.3
Cleaning	58.3	47.1	66.9	53.2	62.0	62.3
Laundry	48.4	39.8	55.0	33.1	53.8	65.6
Caring for the young, elderly or disabled	21.8	20.5	22.9	23.9	21.5	19.2
Other	45.9	49.6	43.0	47.4	46.6	42.9

Source: Author's calculations from pooled Child Labour Survey data.



Source: Author's calculations from pooled Child Labour Survey data.

According to the results shown in Table 5.3, children performing UHS are involved in a variety of activities. For instance, 58.3 per cent of such children clean the house, 48.4 per cent do laundry and 42.5 per cent shop for the household. Information on hours spent in UHS is not collected on the basis of separate activities but as a total of all types of unpaid household services that children carry out. For instance, if a child is involved in three types of activities, all that is known is the total amount of time devoted to these three activities. Therefore,

it is not possible to determine which activities assume the most time. Notwithstanding this point, Figure 5.3 shows the average number of hours spent in UHS among groups of children who are reportedly doing various types of unpaid household services. With the exception of children engaged in shopping for the household, the average time spent in other types of UHS is quite similar and ranges between 9.2 and 10.7 hours per week. Again, it should be noted that these working hours do not necessarily mean that children spend the most time cooking and the least time shopping for the household. That might indeed be the case, given the nature of the work involved. But one cannot deduce this information from the data at hand.



6

The impact of unpaid household services on children's schooling

This chapter looks at the relationship between unpaid household services and children's education. The objective is to determine if there is any link between UHS involvement and the schooling outcomes of children. The indicators used are school attendance, grade attainment, grade repetition and the number of school days missed. Not all these variables are available for all countries under study, which is pointed out where relevant.

6.1 School attendance

6.1.1 School attendance and incidence of UHS

School attendance refers to the current schooling status of children and is generally determined by asking the following question: *Are you currently attending school?* As noted in Chapter 5, about 86 per cent of children are enrolled in school. Table 6.1 shows the school attendance rate by employment status and involvement in UHS. In total, an estimated 84 per cent of children who are engaged in unpaid household services attend school. Among children not engaged in UHS, the figure is 4.6 percentage points higher. However, a substantially larger school attendance gap (27 percentage points) is found between children who are employed and those who are not: While 64.5 per cent of employed children attend school, this figure increases to 91.5 per cent among children not engaged in economic activities.

To make the association between work and schooling even clearer, children were grouped into four mutually exclusive categories by work status: 1) children engaged solely in UHS, 2) children engaged solely in economic activities, 3) children engaged in UHS and economic activities and 4) children engaged in neither UHS nor economic activities. According to this classification, children who are neither employed nor engaged in UHS are found to have the highest school attendance rate – at 92.9 per cent (Table 6.1). Those who are not employed (but may be engaged in UHS) have the next highest attendance rate, at 91.5 per cent, followed by those who perform UHS only (90.3 per cent). In contrast, children who are only employed (and not performing UHS) have the lowest attendance rate, at 51.4 per cent.

TABLE 6.1 **Proportion of school-aged children attending school, by activity status**

Activity status	Total	Male	Female	Ages 6-11	Ages 12-14	Ages 15-17
UHS – yes	84.0	85.5	82.8	89.8	87.2	71.6
UHS – no	88.6	86.6	92.2	93.5	88.7	72.1
Employed – yes	64.5	64.7	64.3	77.9	71.4	45.6
Employed – no	91.5	92.6	90.4	94.1	92.7	83.4
UHS only	90.3	92.6	88.6	93.2	92.4	82.8
Employed only	51.4	49.6	60.5	69.8	59.6	32.4
UHS + employed	66.6	69.4	63.8	78.4	73.1	48.6
No UHS, not employed	92.9	92.5	93.7	94.8	93.2	84.7

Source: Author's calculations from pooled Child Labour Survey data.

The same pattern of school attendance by activity status noted above is observed among both boys and girls. However, some diverging patterns are also found. For instance, while the school attendance of boys who are engaged in UHS is only a single percentage point lower than their counterparts not engaged in UHS, a nearly 10-percentage-point gap emerges between these two groups among girls. Hence, girls' schooling is more likely to be negatively associated with UHS than that of boys. As noted earlier, school attendance drops sharply for children engaged solely in economic activities. While this is true for both girls and boys, the drop observed in boys' attendance (43 percentage points) is much larger than the drop observed among girls (33 percentage points).

When the school attendance of children is examined by age groups, the negative association between UHS and school attendance appears stronger among younger children: The gap in school attendance between 6- to 11-year-olds who are engaged in UHS and those who are not is 3.7 percentage points; the corresponding figures for 12- to 14-year-olds and 15- to 17-year-olds are 1.5 percentage points and 0.5 percentage points, respectively.²⁵ The negative association between school attendance and economic work, on the other hand, appears to be stronger among older children: The attendance gap between employed and not employed children is about 16 percentage points among the youngest age group, and increases to almost 21 percentage points among 12- to 14-year-olds and to 38 percentage points among 15- to 17-year-olds. When the school attendance rates of children who are employed but do not engage in UHS are compared to children who are neither employed nor engaged in UHS, even larger differences are observed – on the order of 25, 34 and 52 percentage points, respectively, for 6- to 11-year-olds, 12- to 14-year-olds, and 15- to 17-year-olds. A similar comparison between children who are engaged solely in UHS and those who are neither employed nor engaged in UHS reveals school attendance rates that are at a maximum 2 percentage points apart (Table 6.1). Hence, the descriptive statistics presented above provide strong evidence for a negative association between economic activities and school attendance, but a weak association between UHS and school attendance.

²⁵ The differences are all statistically significant at conventional levels.

Multivariate analyses on school attendance confirm the regularities reported above (Table 6.2). In this case, a series of cross-country logistic regressions are run on school attendance with country fixed effects.²⁶ For the total school-aged child population, there is a strong association between attendance in school and economic activities, but not necessarily between attendance in school and UHS. Children who engage in UHS only are not any less likely to attend school than children who are neither employed nor engaged in UHS. However, children engaged solely in economic activities and those who combine UHS with economic work are less likely to attend school. When children aged 6 to 11 are considered, the probability of school attendance is found to be weakly but positively associated with UHS.²⁷ However, for children aged 12 to 14 and 15 to 17, there is no evidence of a positive or negative association between school attendance and UHS.

TABLE 6.2 **Logistic regression results on school attendance by work status**

	Ages 6-17 Coefficients	Ages 6-11 Coefficients	Ages 12-14 Coefficients	Ages 15-17 Coefficients
Age	-0.196*** [0.007]	0.240*** [0.016]	-0.368*** [0.034]	-0.383*** [0.045]
Female	-0.229*** [0.035]	-0.164*** [0.048]	-0.249*** [0.063]	-0.295*** [0.068]
Employed only	-1.949*** [0.066]	-0.993*** [0.092]	-1.826*** [0.117]	-2.480*** [0.131]
Employed + UHS	-1.277*** [0.054]	-0.745*** [0.067]	-1.262*** [0.103]	-1.669*** [0.112]
UHS only	0.082 [0.057]	0.252*** [0.076]	0.124 [0.116]	-0.041 [0.117]
Constant	3.948*** [0.092]	-0.468*** [0.127]	6.562*** [0.464]	7.669*** [0.722]
Observations	199,304	104,219	54,567	40,518
Pseudo R squared	0.223	0.280	0.199	0.175

Notes: Robust standard errors in brackets. Reference category is not employed, not engaged in UHS. Covers school-aged children. Includes country fixed effects. *** Significant at 1 per cent.

Source: Author's calculations from pooled Child Labour Survey data.

²⁶ Estimations are also made without country fixed effects. The results for 12- to 14-year-olds and 15- to 17-year-olds do not change appreciably. However, for younger children (aged 6 to 11), the results are sensitive to the inclusion of country fixed effects.

²⁷ The positive association might have to do with their coming of age, both in terms of school and involvement in various tasks around the home.

6.1.2 School attendance and UHS hours – Children engaged solely in UHS

The analysis up to this point has not shown that children engaged in UHS have a disadvantage in terms of school attendance. The following section analyses whether the probability of school attendance changes when UHS hours are taken into account. As noted earlier, a large proportion of children are engaged solely in UHS. This group of children is used to assess whether school attendance is adversely related to the number of hours spent in UHS. By looking at this group of children, the potentially adverse effects of economic activities on children's school attendance can be avoided.

TABLE 6.3 **Proportion of school-aged children attending school, by hours engaged in unpaid household services**

Activity status	Total	Male	Female	Ages 6-11	Ages 12-14	Ages 15-17
UHS only	90.3	92.6	88.6	93.2	92.4	82.8
UHS only – at least 7 hours	87.3	91.0	85.4	90.3	90.6	79.9
UHS only – at least 14 hours	79.2	88.1	76.6	84.8	84.1	70.7
UHS only – at least 28 hours	50.2	75.8	44.9	59.4	59.6	39.3
UHS only – at least 35 hours	30.8	62.7	24.5	42.9	36.8	20.5
No UHS, not employed	92.9	92.5	93.7	94.8	93.2	84.7

Source: Author's calculations from pooled Child Labour Survey data.

Initially, children are grouped into those performing at least 7, 14, 28 and 35 hours of UHS per week. The school attendance rate for each group is shown in Table 6.3. For comparison purposes, school attendance rates among children performing UHS only (for any number of hours) and attendance rates of those engaged in neither UHS nor economic activities are also included. The results indicate that as UHS hours increase, school attendance decreases. While 87.3 per cent of children who are engaged in UHS for at least 7 hours per week attend school, this rate decreases to 79.2 per cent among those doing at least 14 hours of UHS per week, 50.2 per cent for those doing 28 hours of UHS per week and 30.8 per cent for those doing 35 hours or more of UHS per week. As the figures in Table 6.3 show, the drop in school attendance by UHS hours is more dramatic among girls than boys. For instance, while school attendance rates of girls who are engaged in UHS for at least 7 hours per week is 85.4 per cent, this proportion decreases to 44.9 per cent for those doing at least 28 hours of UHS per week and to 24.5 per cent for those engaged in UHS for at least 35 hours per week. The corresponding rates among boys are 91.0 per cent, 75.8 per cent and 62.7 per cent, respectively.

The drop in school attendance as UHS hours increase is also observed in children grouped by age. As discussed earlier, a sizeable proportion of children are engaged in UHS for only a few hours per week. The highest school attendance rates are observed among these children. However, as UHS hours increase, school attendance drops. The drop is small initially: The school attendance gap between children engaged in UHS for at least one hour during the reference week compared to those

who perform at least seven hours is around 3 percentage points.²⁸ However, the drop tends to be higher as the number of hours spent in UHS increases. For instance, when UHS hours rise from 7 to 14, school attendance drops by 6.5 percentage points among children aged 12 to 14. In this same age group, increasing UHS hours from 14 to 28, and from 28 to 35, leads to a drop in school attendance of 24.5 and 22.8 percentage points, respectively.

TABLE 6.4 Results of logistic regression on school attendance among children engaged solely in unpaid household services

	All Coefficients	Ages 6-11 Coefficients	Ages 12-14 Coefficients	Ages 15-17 Coefficients
Age	-0.120*** [0.012]	0.379*** [0.028]	-0.405*** [0.065]	-0.324*** [0.083]
Female	-0.177*** [0.068]	-0.180*** [0.063]	0.022 [0.129]	-0.212 [0.145]
7-13 hours	-0.152* [0.081]	-0.256*** [0.077]	-0.201 [0.160]	-0.052 [0.172]
14-27 hours	-0.768*** [0.088]	-0.640*** [0.094]	-0.971*** [0.157]	-0.729*** [0.167]
28-36 hours	-2.114*** [0.159]	-2.353*** [0.483]	-2.078*** [0.239]	-2.086*** [0.235]
37-42 hours	-2.972*** [0.252]	-2.311*** [0.263]	-2.697*** [0.366]	-3.389*** [0.488]
43+ hours	-2.945*** [0.194]	-2.559*** [0.260]	-3.477*** [0.305]	-2.933*** [0.395]
Constant	3.331*** [0.147]	-0.999*** [0.224]	7.362*** [0.842]	7.009*** [1.338]
Observations	103,847	53,653	30,464	19,730
Pseudo R squared	0.158	0.284	0.166	0.118

Notes: Covers school-aged children engaged solely in UHS. Robust standard errors in brackets. The reference category for UHS hours is less than 7 hours per week. Includes country fixed effects. * Significant at 10 per cent; *** significant at 1 per cent.

Source: Author's calculations from pooled Child Labour Survey data.

In an effort to identify an association between hours spent in UHS and a break or multiple breaks in school attendance, a logistic regression with country fixed effects is estimated, where the dependent variable is school attendance and the key regressors are five dummies identifying different UHS intensities. The results, shown in Table 6.4, confirm the earlier finding that school attendance is negatively associated with the time allotted to UHS. Among children aged 6 to 11,²⁹ all

²⁸ In most countries, a one-hour limit is imposed. Nevertheless, some children who are reported to have performed UHS in the reference week are recorded to have worked less than one hour (shown as zero hours in the data).

²⁹ As noted earlier, compulsory schooling covers children aged 6 or 7. For younger children, school attendance will usually not be an option. Therefore, the lower age limit is set as the compulsory school entry age.



CAMEROON Seven-year-old Hawa Yerima washes dishes outside her home in Perma Village, North Region.

categories showing different time intensities are statistically significant at conventional levels, and all have negative signs indicating that engagement in UHS for more than seven hours a week (the reference category), is associated with the probability of lower school attendance.³⁰ Similar conclusions can be drawn for children aged 12 to 14 and 15 to 17, with the exception that 7 to 13 hours of UHS per week is not found to be associated with a higher risk of not attending school for either group. This exercise was repeated using finer time-intensity indicators; the results are presented by age group in Figures 6.1–6.5.³¹

6.1.2.1 Age group 6-11³²

Panel A of Figure 6.1 shows that the probability of school attendance is around 97 per cent among children aged 6 to 11 who put in 7 to 19 hours of UHS per week. Although the highest probability of school attendance is observed for children who devote less than 7 hours a week to UHS, the difference is less than 1 percentage point between these children and those who devote between 7 and 19 hours to UHS. In fact, a linear trend line between these hours will have a gradient of almost zero. Beyond 20 hours, significant declines are seen in the likelihood of school attendance. At 20 to 21 hours, the likelihood of school

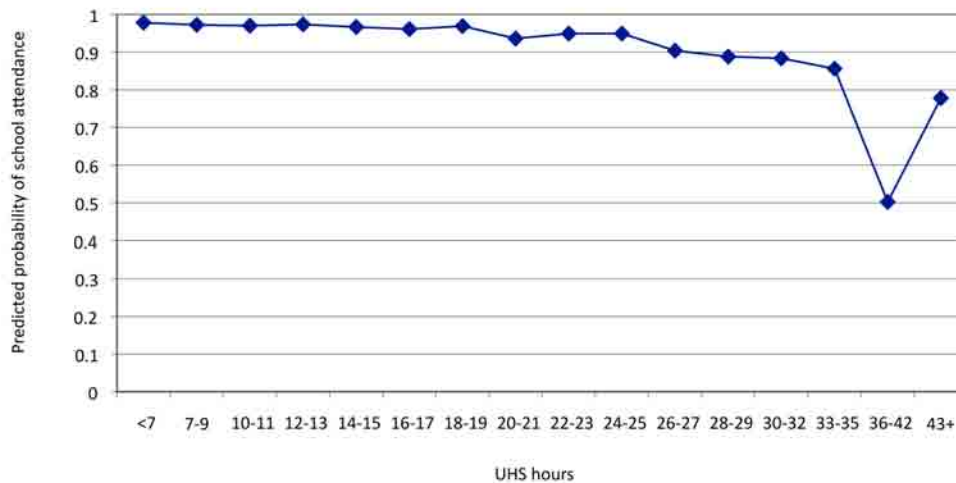
30 Note that the coefficients increase with time intensity.

31 The associated coefficients and standard errors are provided in Appendix Tables A3 and A4. Cell sizes at different categorizations of hours vary. While cell sizes tend to decrease as UHS hours increase, data heaping at multiples of seven lead these hour categories to have larger cell sizes.

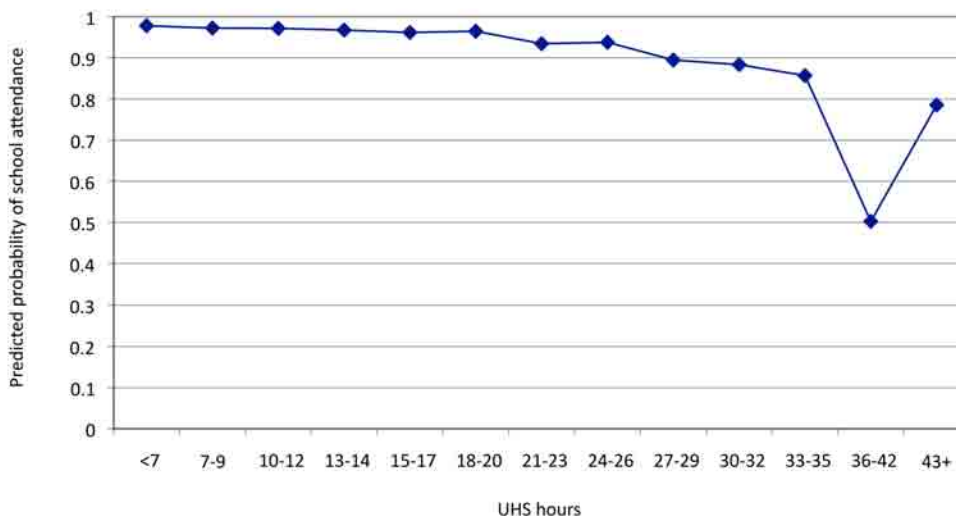
32 The lower age limit is set at minimum compulsory school age, which differs between six and seven in countries studied.

Figure 6.1 Predicted school attendance probabilities by hours engaged in unpaid household services among 6- to 11-year-olds

Panel A: 6- to 11-year-olds – narrow categorization of hours



Panel B: 6- to 11-year-olds – broad categorization of hours



Note: Total reflects average of the sum of UHS and employment hours.

Source: Author's calculations from pooled Child Labour Survey data.

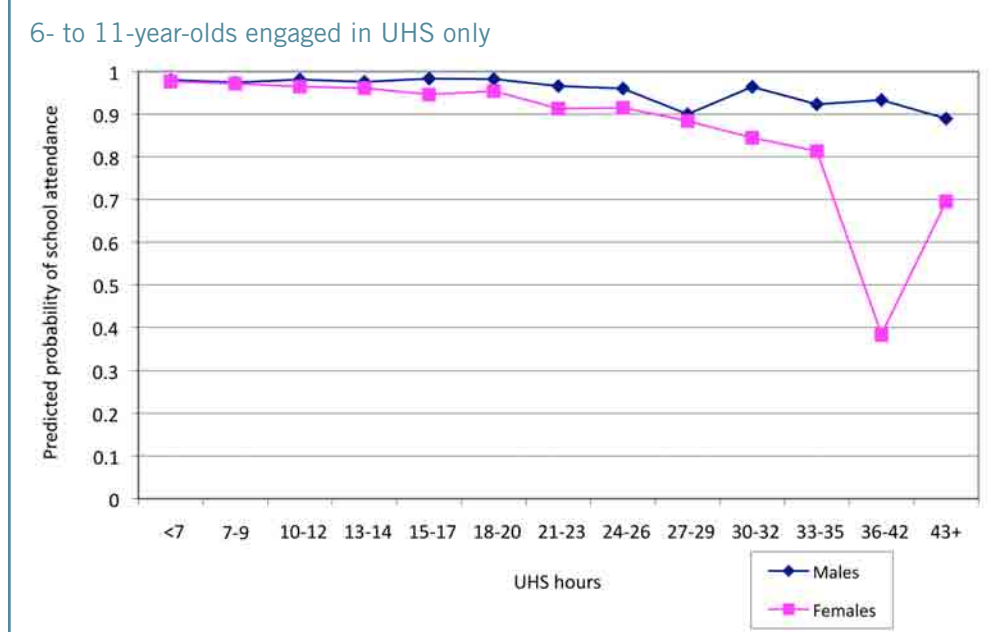
consecutive hours per week, except at the top end of the distribution, where a broader categorization is used due to small cell sizes. The results of this exercise are provided in Appendix Table A4 and pictured in Panel B of Figure 6.1. The general results noted above hold true for this exercise as well and reinforce the conclusion that a time input of between 7 and 20 hours of UHS per week does not change the risk of non-attendance in school. A linear trend line beyond 20 hours (excluding very high time inputs) will have a gradient of -0.021, similar to what was found earlier.

attendance is lowered by 3.6 percentage points – to 93.6 per cent – when compared to children who perform 7 to 9 hours of UHS per week. The probability of school attendance for children engaged in UHS for 21 to 25 hours per week is about 94 per cent.³³ Beyond 25 hours a week, the probability declines further. At 26 to 27 hours, the predicted probability of school attendance is 90.4 per cent. A linear trend line beyond 25 hours (excluding very high hours) would have a gradient of -0.015, indicating a 1.5-percentage-point drop in the likelihood of school attendance for every 2- to 3-hour increase in UHS per week.

In an alternative exercise, the number of UHS hours is broadened out slightly to an average of three

³³ There is considerable data heaping at 21 hours, where 2.4 per cent of children engaged in UHS only are found.

Figure 6.2 Predicted school attendance probabilities by hours engaged in unpaid household services and by gender



Note: Covers school-aged children engaged solely in UHS.

Source: Author's calculations from pooled Child Labour Survey data.

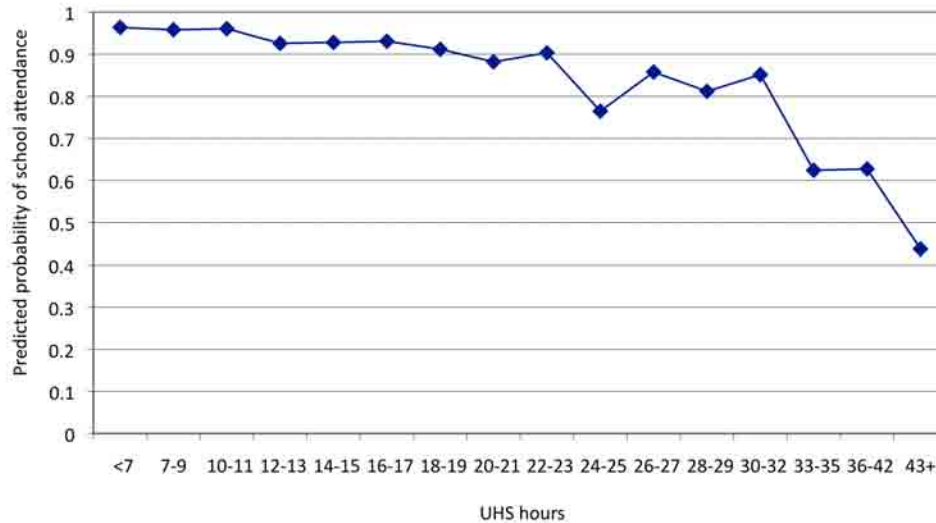
is parallel to Panel B of Figure 6.1. (Regression results are given in Appendix Table A5.) What is also apparent from this figure is that school attendance among girls is more likely to be negatively associated with hours spent in UHS than among boys. However, for both groups of children, school attendance probability does not register a significant drop until about 21 hours of UHS. (In fact, for boys, there is no evidence that less than 21 hours of UHS – with the exception of 7 to 9 hours – is negatively associated with school attendance.) Although a decline in attendance at 21 to 23 hours of UHS is observed for both boys and girls, it is larger for the latter. The predicted fall in the probability of school attendance among boys at 21 to 23 hours of UHS (when compared to those who put in less than 7 hours a week to UHS) is about 1.4 percentage points. In the case of girls, this figure increases to 6.4 percentage points. As noted above for 6- to 11-year-olds, another sharp drop in school attendance is observed at 27 to 29 hours. Boys who perform UHS for 27 to 29 hours have a probability of attending school that is 8 percentage points lower than that of children who perform these activities for less than 7 hours per week. In the case of girls, the corresponding figure at 27 to 29 hours is 9.3 percentage points.

Based on the above discussion, a cut-off point of 21 hours could be used in delineating hazardous UHS from non-hazardous UHS. The implication of this cut-off is that a decline in children's school attendance of less than 1 percentage point can be tolerated. (In the case of girls, the drop tolerated is slightly higher – at about 2 percentage points.) Children who put in 21 or more hours to UHS constitute 4.2 per cent of 6- to 11-year-olds³⁴ who are solely engaged in UHS and 6 per cent of those who carry out any UHS at all. These children constitute 3.2 per cent of all 6- to 11-year-olds. As noted earlier and shown

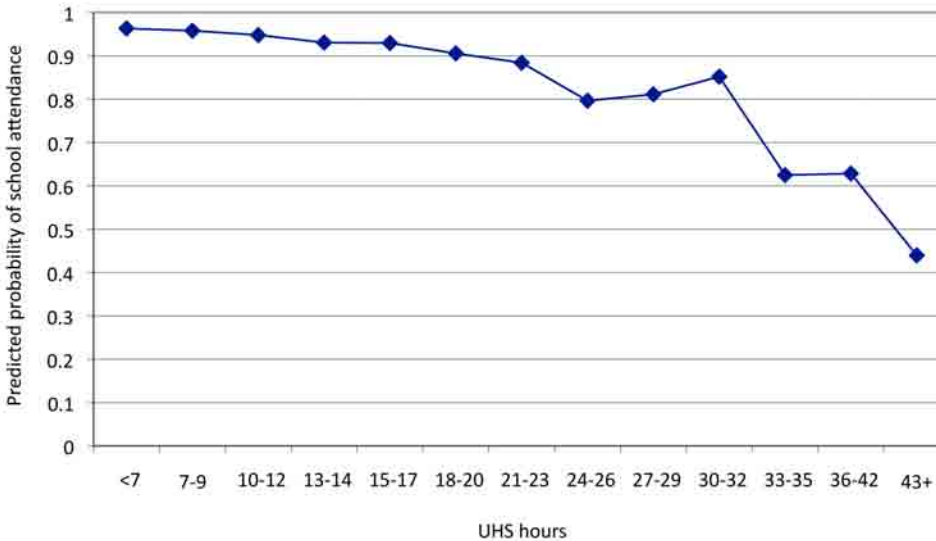
³⁴ Or 7- to 14-year-olds in some cases when the compulsory school age is seven years.

Figure 6.3 Predicted school attendance probabilities by hours of unpaid household services among 12- to 14-year-olds engaged solely in UHS

Panel A: 12- to 14-year-olds – narrow categorization of hours



Panel B: 12- to 14-year-olds – broad categorization of hours



Source: Author's calculations from pooled Child Labour Survey data.

to decline. The graphic analysis, as well as the regression results (given in the Appendix) indicate that between 12 and 19 hours of UHS exert similar negative effects on the school attendance probability of children aged 12 to 14. When these hours are grouped and the logistic regression is re-run, children doing 12 to 19 hours of UHS are found to have a probability of school attendance that is 3.7 percentage points lower than children who perform less than 7 hours of UHS per week.

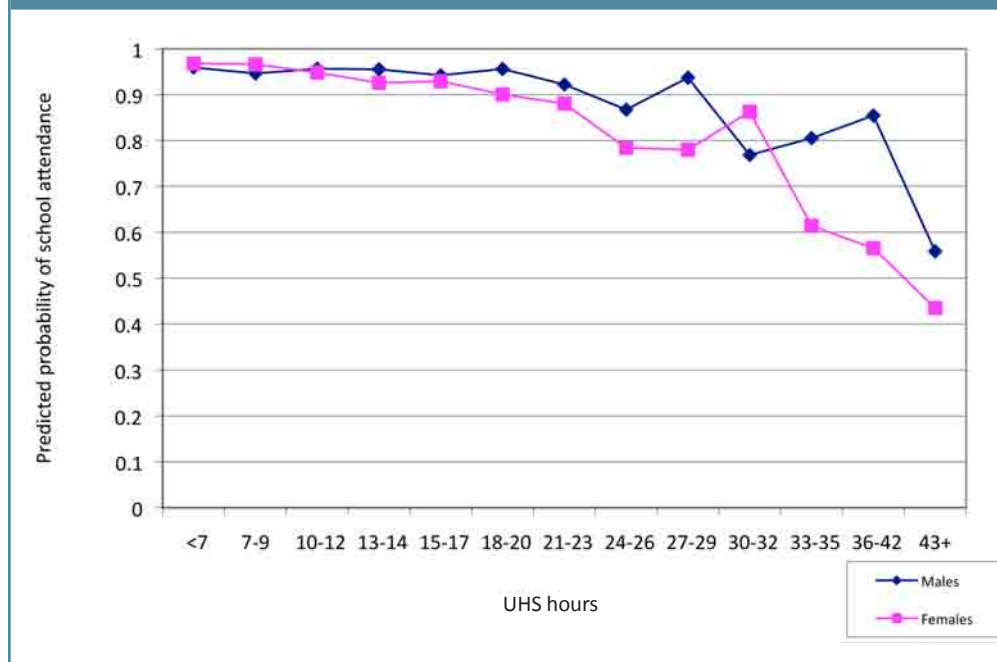
The drop in probability of school attendance beyond 20 hours of UHS is apparent both in Panel A of Figure 6.3, which uses

in Table 6.4, any number of hours beyond seven are negatively associated with the probability of school attendance. If seven hours per week were proposed as the cut-off, 47 per cent of 6- to 11-year-olds who are solely engaged in UHS would be considered at risk of child labour. The decline in school attendance probability that would be deemed intolerable with this cut-off point would be as low as 0.6 percentage points.

6.1.2.2 Age group 12-14

The following section looks at 12- to 14-year-olds (Figure 6.3). Unlike younger children, children aged 12 to 14 can be engaged in UHS for up to 11 hours per week without increasing their risk of missing school (see Appendix Table A3). However, beyond 11 hours, the likelihood of school attendance starts

Figure 6.4 Predicted school attendance probabilities by hours of unpaid household services and by gender among 12- to 14-year-olds engaged in UHS only



Source: Author's calculations from pooled Child Labour Survey data.

hours is sharper: Predicted school attendance of children who put in less than 7 hours per week compared to those who put in 24 to 26 hours per week is on the order of 16.7 percentage points.

Hence, if 21 hours were chosen to delineate hazardous from non-hazardous UHS, this would imply that, at most, a 4-percentage-point decline in school attendance is tolerable. If the threshold is increased to 24 hours, the drop to be tolerated jumps to 8 percentage points. Among children aged 12 to 14 engaged solely in UHS, the proportion at risk of child labour with a cut-off point of 21 hours of UHS would be 9.3 per cent; with a cut-off point of 24 hours, the proportion at risk would be 4.3 per cent.

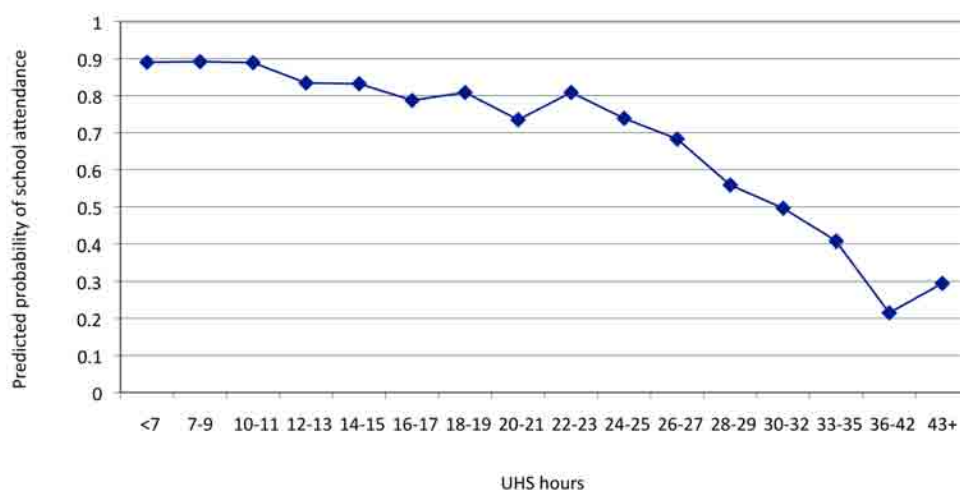
Figure 6.4 depicts the association between school attendance and UHS hours for boys and girls separately, again among 12- to 14-year-olds.³⁵ For boys, only a weak relationship is observed: Less than 21 hours per week of UHS is not associated with the probability of lower school attendance (see Appendix Table A5). It is only beyond 20 hours of UHS that boys' likelihood of attending school falls. Boys that perform UHS for 21 to 23 hours per week have a predicted school attendance probability that is about 3.7 percentage points lower than their counterparts doing less than 7 hours of UHS per week. In contrast, the predicted school attendance among girls tends to decline almost monotonically as UHS hours increase. The decline is particularly sharp beyond 23 hours per week. While girls who carry out UHS for 21 to 23 hours have a predicted probability

³⁵ Cell sizes for boys at high UHS hours can be small. For instance, in the 30- to 32-hour bracket, there are only 18 observations. In contrast, cell sizes for girls tend to be larger. At 30–32 hours, for instance, there are 91 observations.

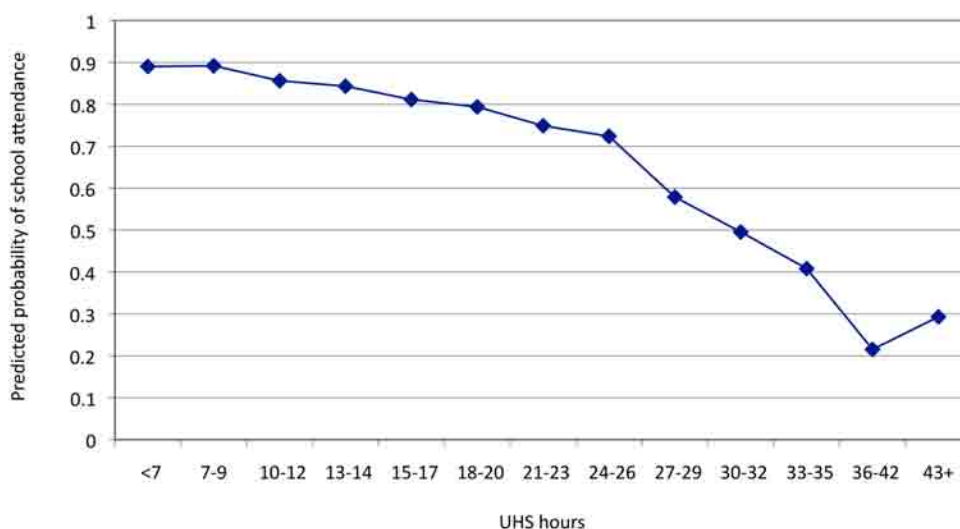
narrow time brackets, and Panel B, which uses broader time brackets. The fluctuations in Panel A are smoothed out in Panel B due to averaging. Nonetheless, the change in the gradient at around 20 hours is obvious in both panels. From Panel B it is clear that children engaged in 21 to 23 hours of UHS have a school attendance probability of 88.4 per cent. This figure is 7.9 percentage points lower than the attendance probability of children performing less than 7 hours of UHS per week. The drop seen at 24 to 26

Figure 6.5 Predicted school attendance probabilities by hours of unpaid household services among 15- to 17-year-olds engaged in UHS only

Panel A: 15- to 17-year-olds – narrow categorization of hours



Panel B: 15- to 17-year-olds – broader categorization of hours



Source: Author's calculations from pooled Child Labour Survey data.

of school attendance that is 8.7 percentage points lower than their counterparts doing less than 7 hours of UHS per week, this figure increases to 18.4 percentage points for those doing 24 to 26 hours of UHS. Hence, the relationship between UHS hours and school attendance for 12- to 14-year-olds shown in Figure 6.3 mainly reflects the profile observed for girls.

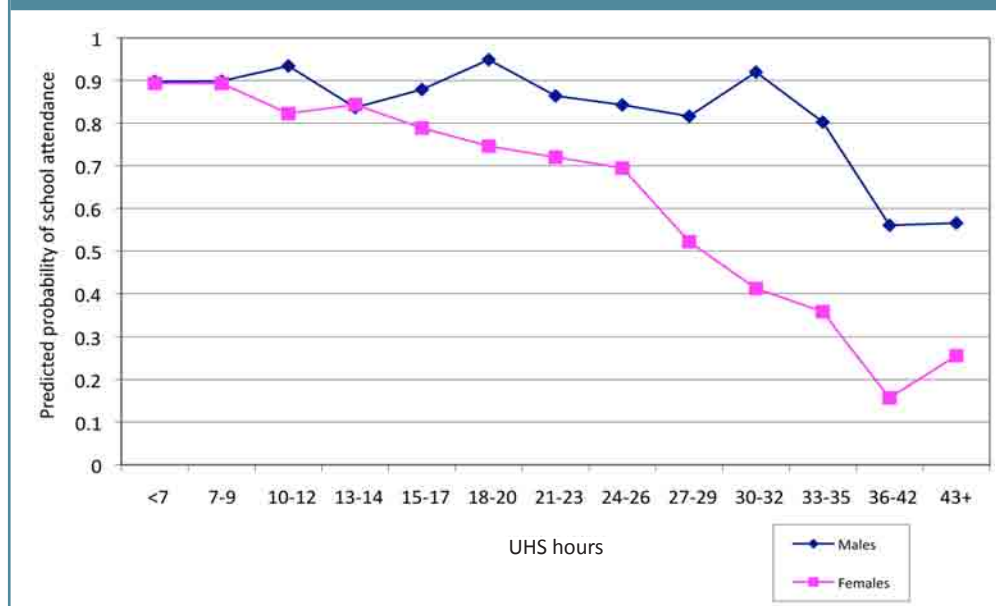
The choice of 21 hours to demarcate hazardous UHS from non-hazardous UHS implies that, at most, a 5-percentage-point decline in the probability of girls' school attendance is to be tolerated. This threshold implies no change in the probability of boys' school attendance as long as their UHS do not exceed 20 hours per week.

6.1.2.3 Age group 15–17

In this final section, the UHS-school attendance relationship for 15- to 17-year-olds is examined. For this group of children, engaging in less than 14 hours of UHS per week is not found to be negatively associated with the probability of school attendance (Appendix Table A3). Beyond that number of hours, the probability starts to decline. Panels A and B of Figure 6.5 show that the probability of school attendance declines gradually up until 28 hours of UHS. A linear trend line drawn

between 12 and 27 hours of UHS shows school attendance probability decreasing by about 2 to 3 percentage points for every 2- to 3-hour increase in UHS. A more substantial change in school attendance probability is seen beyond 27 hours. A linear trend line beyond this hour (omitting very high hours) has a gradient of about minus 8 to 9. Statistical tests also show that the change in probability of school attendance does not differ between 15 and 26 hours of UHS. The probability of school attendance at 15 to 26 hours of UHS is estimated to be 77.8 per cent, which is about 11 percentage points lower than the rate estimated for children doing less than 7 hours of UHS per week. Children engaged in 27 to 29 hours of UHS per week have a much lower predicted participation probability of 58.2 per cent (Panel B of Figure 6.5), which is some 31 percentage points lower than the probability estimated for children putting in less than 7 hours of UHS per week. Designating a threshold of 28 hours to demarcate hazardous UHS would thus imply that as much as an 11-percentage-point drop in school attendance probability is tolerable. The proportion of 15- to 17-year-olds who are engaged in UHS only and perform this activity for 28 or more hours per week is 6.2 per cent.

Figure 6.6 Predicted school attendance probabilities by hours of unpaid household services and by gender, among 15- to 17-year-olds engaged in UHS only



Source: Author's calculations from pooled Child Labour Survey data.

When the relationship between school attendance and UHS hours is investigated separately for boys and girls, only a weak relationship is observed for the former (Figure 6.6). Boys who perform UHS for less than 36 hours a week are not found to be less likely to attend school than their counterparts doing less than 7 hours of UHS per week.³⁶ School attendance probability registers a significant drop only beyond 35 hours. In contrast, girls' school attendance probability is

negatively associated with UHS beyond 9 hours per week. A particularly sharp drop occurs beyond 26 hours, which is reflected in Panel B of Figure 6.5. At 27 to 29 hours, girls are predicted to have a 37-percentage-point probability of lower school attendance than their counterparts doing UHS for less than 10 hours per week. Girls who are engaged in UHS between 18 to 26 hours and 10 to 17 hours, respectively, have a predicted school attendance probability that is 17 percentage points and 7 percentage points lower than girls putting in less than 10 hours of UHS per week.³⁷

³⁶ The regression coefficients on various UHS hours are generally statistically insignificant except for the 18- to 20-hour bracket (statistical significance is at 10 per cent), which actually has a positive sign, and hour brackets beyond 35 hours (see Appendix Table A5).

³⁷ Predicted school attendance does not differ statistically between 10 and 17 hours and between 18 and 26 hours.

The challenge in choosing a threshold to demarcate hazardous from non-hazardous UHS among older children (those aged 15 to 17) lies in the fact that the threshold used for economic work hours (that is, 43 hours per week) does not take children's schooling into account. Children who are employed for 43 or more hours per week can hardly find time to attend school. Indeed, less than 15 per cent of this age group who are employed for 43 or more hours per week attend school. If one were to set the same threshold for UHS, the implied fall in school attendance would be over 60 percentage points in the case of girls and 30 percentage points in the case of boys. Instead, a 28-hour threshold is suggested. Boys' school attendance probability remains unchanged for UHS hours below this level while girls' probability decreases by, at most, 20 percentage points.

6.1.3 School attendance and UHS hours – Children engaged in both UHS and economic activities

As noted earlier, a significant proportion of children combine UHS with economic activities. Hence, the need arises to come up with a potentially different UHS threshold for children engaged in multiple activities. Since a primary interest is to identify UHS hours for children who combine economic work and UHS, only children aged 12 to 14 and 15 to 17 are considered. For younger children, there is no need to take into account economic work hours since even a single hour of economic activity puts them in the category of child labourers. In attempting to identify UHS hours for children engaged in multiple activities, the strategy adopted is as follows: For children between the ages of 12 and 14, a threshold already exists for economic activities: Those who are employed for 14 hours or more are considered child labourers. Hence, the issue is setting a threshold for UHS hours for children who are employed in economic activities for less than 14 hours (these children make up 41 per cent of 12- to 14-year-olds engaged in multiple activities). A 21-hour threshold for children who are solely engaged in UHS has already been suggested. Should the threshold be lower for 12- to 14-year-olds engaged in both UHS and economic activities? To understand the way in which school attendance is associated with UHS hours, the empirical relationship between school attendance probability and various UHS-hour categories is examined. This is similar to the exercise carried out earlier, among children engaged in multiple activities but who perform economic work for less than 14 hours per week. Since these children are employed, their economic work hours are also taken into consideration. For older children (ages 15 to 17), a similar analysis is undertaken for those who work less than 43 hours a week, which is the threshold demarcating hazardous economic activities.³⁸ These children make up 80 per cent of 15- to 17-year-olds engaged in multiple activities.

Table 6.5 shows the results of a logistic regression for 12- to 14-year-olds and 15- to 17-year-olds who are engaged in economic activities for less than 14 and 43 hours per week, respectively. For both groups of children, economic work hours are found to be negatively associated with the probability of school attendance. To be more specific, an hour increase in economic activity is associated with a 0.3-percentage-point drop in the probability of school attendance among 12- to 14-year-olds. The corresponding drop among 15- to 17-year-olds is 2.4 percentage points. When economic work hours are controlled, there is no evidence that school attendance probability is negatively associated with low levels of UHS. However, as UHS hours increase, a negative association begins to be observed. Among 12- to 14-year-olds, this is the case when they perform more than 17 hours of UHS per week. A negative association is not observed for UHS hours that fall between 22 and 25 hours, however. In fact, the association is stronger for hours that exceed 25, which is above the threshold designated for children not engaged in economic activities. In the case of 15- to 17-year-olds, a negative association between school attendance probability and UHS hours is observed for children performing UHS for 22 hours or more (with the exception of 24 to 25 hours).

38. Children who are reported to have zero hours of economic activity are excluded. As noted earlier, a significant proportion of these children are temporarily absent from work.

TABLE 6.5 Results of logistic regressions on school attendance among children engaged in multiple activities

	Ages 12-14 Coefficients	Ages 15-17 Coefficients
Age	-0.379*** [0.096]	-0.367*** [0.069]
Female	-0.253 [0.159]	-0.144 [0.113]
Economic work hours	-0.053* [0.027]	-0.099*** [0.005]
7-11 hours of UHS	0.0740 [0.212]	0.341** [0.141]
12-13 hours of UHS	0.002 [0.404]	0.161 [0.226]
14-15 hours of UHS	-0.233 [0.327]	-0.017 [0.174]
16-17 hours of UHS	0.399 [0.397]	0.265 [0.289]
18-19 hours of UHS	-0.746** [0.362]	-0.089 [0.246]
20-21 hours of UHS	-0.586* [0.304]	-0.240 [0.221]
22-23 hours of UHS	-0.411 [1.118]	-0.830** [0.391]
24-25 hours of UHS	-0.206 [0.718]	-0.210 [0.464]
26-27 hours of UHS	-2.953*** [0.814]	-1.321*** [0.484]
28-35 hours of UHS	-1.093*** [0.318]	-0.531** [0.237]
36-42 hours of UHS	-1.765*** [0.520]	-1.750*** [0.516]
43+ hours of UHS	-2.620*** [0.674]	-1.155*** [0.389]
Constant	7.301*** [1.252]	7.842*** [1.112]
Observations	3,710	9,371
Pseudo R squared	0.191	0.291

Notes: Covers children engaged in multiple activities who are employed for less than 14 hours in the case of 12- to 14-year-olds and less than 43 hours in the case of 15- to 17-year-olds. Robust standard errors in brackets. The reference category for UHS hours is less than 7 hours per week. Includes country fixed effects. Among 12- to 14-year-olds, observations from Jordan, Republic of Moldova and Uruguay have been dropped due to no variation in the dependent variable. * Significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent.

Source: Author's calculations from pooled Child Labour Survey data.

TABLE 6.6 Results of logistic regressions on school attendance by gender, among children engaged in multiple activities

	Ages 12-14 (female) Coefficients	Ages 15-17 (male) Coefficients	Ages 15-17 (female) Coefficients
Age	-0.418*** [0.126]	-0.382*** [0.100]	-0.330*** [0.092]
Economic work hours	-0.039 [0.045]	-0.113*** [0.008]	-0.088*** [0.007]
7-11 hours of UHS	-0.397 [0.326]	0.817*** [0.179]	-0.576** [0.244]
12-13 hours of UHS	0.241 [0.515]	0.589* [0.319]	-0.637* [0.326]
14-15 hours of UHS	-0.823* [0.437]	0.550* [0.282]	-0.853*** [0.242]
16-17 hours of UHS	-0.299 [0.462]	0.308 [0.412]	-0.298 [0.338]
18-19 hours of UHS	-1.267*** [0.479]	0.427 [0.483]	-0.746** [0.298]
20-21 hours of UHS	-1.055*** [0.376]	0.277 [0.304]	-0.987*** [0.300]
22-23 hours of UHS	-1.041 [1.233]	0.777 [0.528]	-1.831*** [0.478]
24-25 hours of UHS	-0.733 [0.872]	-0.929 [0.583]	-0.542 [0.477]
26-27 hours of UHS	-3.880*** [0.930]	-0.058 [0.531]	-2.161*** [0.581]
28-35 hours of UHS	-1.843*** [0.415]	0.658* [0.367]	-1.447*** [0.309]
36-42 hours of UHS	-2.987*** [0.674]	-0.875 [0.763]	-2.395*** [0.610]
43+ hours of UHS	-3.047*** [0.784]	1.653 [1.813]	-1.897*** [0.421]
Constant	7.987*** [1.707]	4.686*** [1.366]	7.302*** [1.488]
Observations	1,741	4,841	4,530
Pseudo R squared	0.244	0.317	0.305

Notes: Covers children engaged in multiple activities who are employed for less than 14 hours in the case of 12- to 14-year-olds and less than 43 hours in the case of 15- to 17-year-olds. Robust standard errors in brackets. The reference category for UHS hours is less than 7 hours per week. Includes country fixed effects. Among 12- to 14-year-olds, observations from Jordan, Republic of Moldova and Uruguay have been dropped due to no variation in the dependent variable. * Significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent.

Source: Author's calculations from pooled Child Labour Survey data.



UNICEF/NYHQ2005-1209/LeMoyne

TURKEY Sultan, age 14, makes bread with her mother at a camp for migrant workers near the city of Adana in Adana Province.

When the same exercise is carried out separately for boys and girls, the association between the probability of school attendance and UHS hours is found to be stronger for girls. Among 12- to 14-year-old boys who carry out economic activities for less than 14 hours per week, a meaningful relationship between school attendance probability and UHS hours is not observed (results not presented). In the case of girls, a negative association is observed beyond 13 hours of UHS (Table 6.6). Among 15- to 17-year-old boys, no negative association between school attendance probability and UHS is observed for any of the UHS hourly brackets specified. In contrast, girls' school attendance probability is negatively associated with most of the hourly categories specified in Table 6.6, though the association is stronger for higher UHS hours. For instance, girls who carry out UHS for 14 to 15 hours have a predicted school attendance probability of 53.6 per cent, which is some 19 percentage points lower than their counterparts doing less than 7 hours of UHS a week. On the other hand, those who perform UHS for 20 to 21 hours have a predicted school attendance probability that is 23 percentage points lower than their counterparts who spend less than 7 hours a week on UHS. These figures are calculated by assuming that girls carry out economic work for 18.5 hours per week, which is the mean for their sample. Girls who are employed for 18.5 or more hours per week (but less than 43 hours per week) and who perform 21 or more hours of UHS per week constitute 16 per cent of girls who combine economic activities with UHS and who are not categorized as child labourers due to their economic working hours.

As shown in Table 6.6, the associated coefficients on various hourly brackets differ. Furthermore, the baseline school enrolment probability changes with changes in economic work hours performed. Hence, coming up with a conversion factor between UHS hours and economic activities is not straightforward.³⁹ For younger children (ages 12 to 14), setting a threshold for those engaged in multiple activities is made easier by the finding that UHS hours of less than 18 hours per week are not associated with a lower school attendance probability. Furthermore, economic work hours have a relatively small effect on younger children's likelihood of school attendance. Hence, the use of a 21-hour threshold for this group of children – similar to what was suggested for those engaged in UHS only – would mean that the predicted probability of school attendance at the maximum allowable UHS hours is only marginally lower than the rate predicted for children engaged solely in UHS.

Among 15- to 17-year-olds, at mean hours of employment (19 hours per week), those engaged in UHS for less than 7 hours per week lag some 20 percentage point behind their non-employed counterparts. In delineating hazardous from non-hazardous UHS, a 28-hour threshold for non-employed children has been proposed, which implies a 72.2 per cent school attendance probability among girls. Taking this figure as a benchmark, combinations of UHS and employment hours for children engaged in multiple activities can be explored that produce a predicted probability of school attendance of around 70 per cent. As noted above, changes in school attendance associated with UHS are mainly a concern among girls. Therefore, based on the regression results for older girls provided in Table 6.6, various thresholds for UHS hours are established by taking into account the economic work hours of children.⁴⁰ For children engaged in economic activities for 10 or fewer hours per week, a threshold of 21 hours per week of UHS can be established; for those employed 11 to 14 hours per week, a threshold of 14 hours of UHS per week; and for children employed 15 to 20 hours per week, a threshold of 7 hours of UHS per week can be established. The predicted school attendance of children employed for more than 20 hours (but performing less than 7 hours of UHS per week) drops below 70 per cent. Hence, according to the above criterion (that school attendance probability should not fall below 70 per cent), children engaged in multiple activities with economic work hours that exceed 20 hours per week should not be engaged in UHS, even for one hour. This is a much stricter cut-off than the 43-hour cut-off designated for employed children. The proportion of children engaged in multiple activities and employed for more than 20 hours per week (among those employed for less than 43 hours) exceeds 40 per cent.

As noted earlier, data heaping can be a problem, particularly for UHS hours. Although the respondent is asked to report the number of hours a child engages in UHS each day of the week, which are then added up to obtain the weekly total, there is a tendency to report the same number of hours for six or seven days of the week. Obviously, this is a major obstacle in understanding the time allocated to various activities by children.

39 See ILO (2007) for an initial attempt to combine economic and non-economic work hours of children into 'effective working hours'.

40 In the interest of practicality, rather broad thresholds are used.

6.2 Grade attainment

In this section, grade attainment by employment status of children is examined. The objective is to understand how grade attainment is affected by children's involvement in UHS. Grade attainment refers to the highest grade completed.⁴¹ The grade information necessarily refers to formal schooling. Therefore, children in preschool and in special education are coded as having achieved a zero grade and are omitted from the analysis. Children in special education constitute a negligible part of the child population, so their omission is unlikely to change the results. The analysis is conducted on school-aged children only. If a child is of school age but has never attended school, he/she is assigned a grade of zero. Some of these children may be late starters, but it must also be considered that they may be late starters because of their involvement in UHS.

Unpaid household services may affect grade attainment by: 1) making children less likely to attend school, and 2) increasing the likelihood that they will repeat a grade, so that they lag behind their non-working counterparts in terms of timely grade progression. The main difficulty in establishing a meaningful relationship between UHS involvement and grade attainment is that the latter is a cumulative schooling indicator, whereas the former shows the current work status of children. Since retrospective information concerning children's work status is not collected, there is the risk of ascribing the effects of past events to the current work status of children.⁴² This point must be kept in mind while interpreting the results in this section.

Table 6.7 shows that average grade attainment is higher among children performing UHS than among those not engaged in UHS or among those who are neither employed (in economic activities) nor engaged in UHS. The difference is 1.2 grades. This finding has to do with the fact that children involved in UHS, but especially those who are employed, are older than children not engaged in either of these two activities. Similar results are obtained for boys and girls. Thus, grade attainment by age must be examined. Among 6- to 11-year-olds, a slightly higher grade attainment is found among children engaged in UHS than among those not doing unpaid household services. However, the difference, which is statistically significant, is half a grade. Children aged 12 to 14 and 15 to 17 who are engaged in UHS have about the same level of grade attainment as their counterparts who are not engaged in UHS. Furthermore, children who are engaged solely in UHS have either attained a higher or about the same grade level as children who are neither employed nor engaged in UHS. In contrast, employed children have lower grade levels than their non-employed counterparts. For instance, 15- to 17-year-olds who are engaged in economic activities attain an average of two fewer grades than their non-employed counterparts. Except for the youngest age group, children who are solely engaged in economic activities fare worse than any other group in terms of grade attainment. However, this is not to say that economic activities reduce grade attainment, since it may very well be that some other underlying factor determines children's schooling and employment status. (This point was discussed earlier and is a major limitation in this study.)

41 For children in school, the grade currently attended is the information that is often collected because this is the format recommended in SIMPOC's Child Labour Survey model questionnaire. Some countries, however, collect both the highest grade completed as well as the current school level and grade attended. Where only the latter information is available, it is simply assumed that the child has successfully completed the previous grade. Information on grade level attained is not available for Niger.

42 This is why the analysis was not carried out on the basis of UHS hours.

TABLE 6.7 **Highest grade attained by work status (children aged 6 to 17)**

Activity status	Total	Male	Female	Ages 6-11	Ages 12-14	Ages 15-17
UHS – yes	5.1	5.1	5.2	2.6	5.9	8.1
UHS – no	3.9	4.2	3.5	2.1	5.8	8.2
Employed – yes	4.8	4.9	4.6	2.4	5.1	6.7
Employed – no	4.6	4.5	4.7	2.3	6.0	8.7
UHS only	5.2	5.1	5.3	2.7	6.1	8.7
Employed only	4.6	4.6	4.5	2.1	4.7	6.4
UHS + employed	4.9	5.0	4.7	2.5	5.3	6.9
No UHS, not employed	3.9	4.1	3.5	2.1	5.9	8.7

Note: Covers school-aged children.

Source: Author's calculations from pooled Child Labour Survey data.

TABLE 6.8 **Results of ordinary least squared regressions on grade progression of children aged 6 to 17**

	Ages 6-11 Coefficients	Ages 12-14 Coefficients	Ages 15-17 Coefficients
Age	-0.166*** [0.005]	-0.189*** [0.019]	-0.231*** [0.036]
Female	0.041*** [0.015]	-0.027 [0.031]	-0.015 [0.057]
Employed only	-0.315*** [0.040]	-0.637*** [0.080]	-1.693*** [0.134]
Employed + UHS	-0.265*** [0.025]	-0.411*** [0.050]	-1.147*** [0.091]
UHS only	0.122*** [0.019]	0.208*** [0.044]	0.206** [0.082]
Constant	1.132*** [0.050]	0.126 [0.249]	-0.079 [0.577]
Observations	99,206	50,933	36,699
R squared	0.152	0.333	0.380

Notes: Robust standard errors in brackets. The reference category is not employed and not engaged in UHS. Covers school-aged children. Includes country fixed effects. ** Significant at 5 per cent; *** significant at 1 per cent.

Source: Author's calculations from pooled Child Labour Survey data.

Table 6.8 presents the results of multivariate analyses, where the association between UHS and grade attainment is investigated. Grade attainment is defined as the difference between the highest grade completed by the child and the grade he/she would have achieved if he/she had entered compulsory education on time (as designated by national legislation)

and progressed through grades without interruption.⁴³ This exercise controls for the fact that children in different countries enter compulsory schooling at different ages.⁴⁴

The results do not show a negative association between UHS involvement and grade progression (Table 6.8). In fact, for all age groups, it is found that children who are solely engaged in UHS progress through grades more smoothly than children who are neither employed nor engaged in UHS. However, employed children and those engaged in multiple activities lag behind their non-employed, non-working counterparts. For instance, 12- to 14-year-olds who are engaged solely in economic activities are 0.6 grades behind children who are neither employed nor engaged in UHS. The gap increases to 1.7 grades among 15- to 17-year-olds.

TABLE 6.9 Results of ordinary least squared regressions on grade progression of school-aged children, by gender

	Male			Female		
	Ages 6-11 Coefficients	Ages 12-14 Coefficients	Ages 15-17 Coefficients	Ages 6-11 Coefficients	Ages 12-14 Coefficients	Ages 15-17 Coefficients
Age	-0.163*** [0.007]	-0.162*** [0.025]	-0.228*** [0.052]	-0.169*** [0.007]	-0.215*** [0.028]	-0.230*** [0.048]
Employed only	-0.464*** [0.046]	-0.767*** [0.094]	-1.927*** [0.149]	-0.174* [0.096]	-0.552*** [0.168]	-1.005*** [0.308]
Employed + UHS	-0.278*** [0.034]	-0.372*** [0.061]	-1.265*** [0.117]	-0.228*** [0.036]	-0.422*** [0.086]	-0.963*** [0.152]
UHS only	0.092*** [0.027]	0.167*** [0.055]	0.225** [0.105]	0.151*** [0.028]	0.254*** [0.074]	0.219 [0.140]
Constant	1.204*** [0.067]	-0.012 [0.330]	0.312 [0.835]	1.085*** [0.073]	0.201 [0.369]	-0.636 [0.792]
Observations	50,921	25,832	18,828	48,285	25,101	17,871
R squared	0.147	0.329	0.368	0.161	0.342	0.401

Notes: Robust standard errors in brackets. The reference category is not employed and not engaged in UHS. Includes country fixed effects. * Significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent.

Source: Author's calculations from pooled Child Labour Survey data.

When timely grade progressions of boys and girls are analysed separately, UHS are not found to be negatively associated with grade attainment for any age group (Table 6.9). Boys who are engaged solely in UHS are predicted to be 0.1 to 0.2 grades ahead of their non-employed, non-working counterparts. In the case of girls, this figure is 0.2 to 0.3 grades, respectively, among children aged 6 to 11 and 12 to 14. A meaningful relationship is not found between grade progression and UHS activity among children aged 15 to 17.

43 It was found that 32.7 per cent of children completed the grade they are supposed to complete. Another 30.3 per cent are a grade ahead, 11.9 per cent are two grades ahead, 10 per cent are a grade behind and 4.6 per cent are two grades behind. The rest (10.5 per cent) are mostly behind by more than two grades.

44 Since country fixed effects are used, this correction does not change the results in any way.

6.3 Grade repetition

Another important schooling indicator is grade repetition. Due to the involvement of children in UHS, they may attend school intermittently and therefore fail to perform well enough to progress to the next grade. However, this schooling indicator suffers from a similar problem as grade attainment: Grade repetition may have occurred at any point in time and may not necessarily be related to children's current work status. Keeping this caveat in mind, the incidence of grade repetition by work status among children who have ever attended school is examined, based on five countries⁴⁵ for which this information is available.⁴⁶

TABLE 6.10 Proportion of school-aged children repeating a grade, by work status

Activity status	Total	Male	Female	Ages 6-11	Ages 12-14	Ages 15-17
UHS – yes	27.8	29.0	26.9	19.6	35.2	40.8
UHS – no	26.2	29.9	15.8	17.6	37.2	42.3
Employed – yes	34.0	36.9	30.4	24.6	41.0	44.9
Employed – no	23.2	23.8	22.7	16.2	31.4	37.5
UHS only	23.3	21.9	24.3	16.1	30.3	37.1
Employed only	33.8	36.0	21.4	21.9	39.5	46.0
UHS + employed	34.1	37.3	31.0	25.0	41.3	44.8
No UHS, not employed	23.1	26.8	14.6	16.5	35.7	38.7

Note: Covers school-aged children who have ever attended school.

Source: Author's calculations from pooled Child Labour Survey data.

A sizeable proportion of children are found to have repeated a grade at some point in their school life (Table 6.10).⁴⁷ Among children who are not currently engaged in an economic activity or UHS, this rate is 23.1 per cent. It increases to 33.8 per cent among children engaged in economic activities only. This finding, however, does not necessarily suggest that involvement in economic activities led to higher grade repetition, since causality may run in the opposite direction. That is, children who fail in their studies may carry the risk of being put to work. When children who are solely engaged in UHS are investigated, their grade repetition rate of 23.3 per cent is found to be similar to the rate estimated for children who are engaged in neither economic activities nor UHS.

Girls are found to have lower grade repetition rates than boys. Even among children who are engaged neither in UHS nor economic activities, there is a nearly 12-percentage-point difference in repetition rates. Interestingly, while boys

⁴⁵ Peru, Bolivia, Mali, Senegal and Uruguay.

⁴⁶ Among school-aged children, 93.3 per cent have attended school at some point in their lives.

⁴⁷ The results of this section may not be generalized to other countries for which information on grade repetition is not available. The choice of including grade repetition questions in the Child Labour Survey may depend on whether grade repetition is a problem in the country in question. Hence, countries that include such questions may be a select group.

engaged solely in UHS have lower grade repetition rates (21.9 per cent) than their counterparts engaged in neither UHS nor economic activities (26.8 per cent), the opposite holds true among girls. Girls who are solely engaged in UHS have a distinctly higher average repetition rate (24.3 per cent) than their counterparts who are not engaged in either UHS or economic activities (14.6 per cent). The highest repetition rate is observed for children engaged in multiple activities (37.3 per cent for boys and 31.0 per cent for girls).

The incidence of grade repetition increases with a child's age, which is not surprising given that this schooling indicator asks whether the child has ever repeated a grade. Nonetheless, it is interesting to note that 44 per cent of 15- to 17-year-olds have repeated a grade at some point in their school life. On the basis of age groups, children engaged solely in UHS are not found to have higher grade repetition rates than children who are neither engaged in UHS nor economic activities.

TABLE 6.11 **Logistic regression results on grade repetition**

	Ages 6-11 Coefficients	Ages 12-14 Coefficients	Ages 15-17 Coefficients
Age	0.299*** [0.015]	0.120*** [0.033]	0.083 [0.056]
Female	-0.132*** [0.049]	-0.281*** [0.057]	-0.258*** [0.075]
Employed only	0.379*** [0.112]	0.219* [0.118]	0.354** [0.140]
Employed + UHS	0.604*** [0.075]	0.564*** [0.093]	0.495*** [0.122]
UHS only	-0.007 [0.071]	0.088 [0.091]	0.216* [0.124]
Constant	-4.241*** [0.149]	-2.205*** [0.432]	-1.562* [0.904]
Observations	19,977	10,635	7,057
Pseudo R squared	0.059	0.024	0.018

Notes: Includes school-aged children who have ever attended school from Bolivia, Mali, Peru, Senegal and Uruguay. The reference category is not employed and not engaged in UHS. Includes country fixed effects. Robust standard errors in brackets. * Significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent.

Source: Author's calculations from pooled Child Labour Survey data.

A logistic regression on grade repetition disaggregated by age shows that, with the exception of 15- to 17-year-olds, children engaged solely in UHS are not any more likely to repeat a grade than children not engaged in either UHS or economic activities (Table 6.11). However, children engaged in economic activities and those engaged in both economic activities and UHS do stand at higher risk of grade repetition. It is interesting to note that children performing multiple activities face the greatest risk of grade repetition. Among 15- to 17-year-olds, the probability that a child who is engaged neither in economic activities nor UHS will repeat a grade is 33.6 per cent; this figure increases to 41.9 per cent among those children who are engaged solely in economic activities, and to 45.4 per cent among children performing multiple activities. The probability of grade repetition is 38.6 per cent among those engaged in UHS only.



LAO PEOPLE'S DEMOCRATIC REPUBLIC Girls use large mortars and pestles to husk rice, in an area underneath their home, in Adone Village in Ta Oi District in Saravane Province.

When a female dummy interacts with work status indicators, it is found that girls of all ages engaged in UHS stand at higher risk of repeating grades than their counterparts who are engaged in neither household work nor economic activities (results not shown). Note, however, the weak link between work status and grade repetition as given by the low values of pseudo R squared.

6.4 School days missed

Missed school days is the final indicator used in this paper to assess the association between UHS and schooling outcomes of children.⁴⁸ This indicator concerns children who are currently attending school and provides information about their regular school attendance. It asks whether children missed any school days in the reference week, which coincides with the reference period for UHS and economic activities.⁴⁹ Hence, unlike grade attainment and repetition, missed school days can be directly linked to the work activities of children.

⁴⁸ The data on school days missed is available for all countries except Indonesia.

⁴⁹ In two countries (Mali and Senegal), the relevant question concerns days attended. Days missed was constructed by subtracting this figure from five, assuming that children are normally expected to attend school five days a week.

TABLE 6.12 Proportion of school-going children who missed school, by work status

Activity status	Total	Male	Female	Ages 6-11	Ages 12-14	Ages 15-17
UHS – yes	18.5	19.0	18.1	18.0	18.7	20.0
UHS – no	18.3	19.5	16.2	17.2	19.5	22.8
Employed – yes	19.5	21.6	16.6	18.8	19.2	21.7
Employed – no	17.4	17.4	17.3	16.8	17.9	19.0
UHS only	18.3	18.4	18.2	17.8	18.6	19.6
Employed only	30.1	32.1	18.3	28.5	28.9	35.4
UHS + employed	19.2	20.7	17.5	18.7	19.1	20.9
No UHS, not employed	16.5	16.8	16.1	16.1	16.9	18.5

Notes: Covers school-aged children who currently attend school. Children who missed school due to external factors are excluded.

Source: Author's calculations from pooled Child Labour Survey data.

Overall, 22 per cent of school-going children (aged 6 and above) are found to have missed school in the reference week. However, 24.5 per cent of those who missed school did so because of external factors such as bad weather conditions, school holidays or teacher absence.⁵⁰ If such children are excluded, the proportion missing school decreases to 17.9 per cent. Table 6.12 presents the proportion of children who miss school for reasons that exclude external factors. While 16.5 per cent of children who are not engaged in either UHS or economic activities missed school in the reference week, the corresponding proportion among children who are solely engaged in UHS is slightly higher, at 18.3 per cent. Among children engaged solely in economic activities, the proportion increases to 30.1 per cent. Hence, in comparison to economic activities, it appears that unpaid household activities have a smaller negative effect on regular school attendance.

A larger proportion of boys than girls are found to miss school. The gap between boys and girls is highest among those solely engaged in economic activities (32.1 per cent versus 18.3 per cent). In contrast, the proportions missing school among boys and girls engaged solely in UHS are about the same, and are slightly higher than the proportions of children engaged in neither economic activities nor UHS.

The proportion who miss school is higher among older than younger children. Even among those who are neither engaged in economic activities nor UHS, almost one in five children in the 15- to 17-year-old group are found to miss school. For all three age groups, the proportions of children missing school are slightly higher among those engaged solely in UHS than among those engaged in neither UHS nor economic activities. However, the gap between these two groups is dwarfed by the gap that arises between children engaged solely in economic activities and children engaged in neither economic activities nor UHS.

⁵⁰ A child's illness or injury is not considered an external factor since it may be related to UHS or economic activities.

A multivariate analysis that controls for age, sex and employment status (results not shown) indicates that the probability that 6- to 11-year-olds will miss school is 2.2 percentage points higher among children engaged solely in UHS than those engaged in neither economic activities nor UHS. The corresponding difference between the two groups of 12- to 14-year-olds is 2 percentage points. Among 15- to 17-year-olds, the risk of missing a school day among children engaged solely in UHS does not differ from children who are not employed or performing UHS. Among children aged 6 to 11, 12 to 14 and 15 to 17, the predicted probability that children will miss school differs by 11.9, 12.1 and 16.4 percentage points, respectively, between children engaged solely in economic activities and children engaged in neither economic activities nor UHS. In sum, children's involvement in UHS is negatively associated with regular school attendance, but this effect is rather small, especially when compared to economic activities.

TABLE 6.13 **Proportion of children who missed school, by hours engaged in unpaid household services**

Activity status	Total	Male	Female	Ages 6-11	Ages 12-14	Ages 15-17
UHS only	18.3	18.4	18.2	17.8	18.6	19.6
UHS only – at least 7 hours	16.5	15.0	17.4	15.6	16.7	18.1
UHS only – at least 14 hours	16.8	12.9	18.6	15.6	16.8	18.9
UHS only – at least 28 hours	18.1	14.3	19.6	20.0	16.6	18.0
UHS only – at least 35 hours	20.4	13.2	24.4	14.7	23.1	27.7
No UHS, not employed	16.5	16.8	16.1	16.1	16.9	18.5

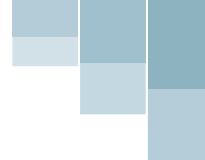
Notes: Covers school-aged children who currently attend school. Children who missed school due to external factors are excluded.

Source: Author's calculations from pooled Child Labour Survey data.

The next topic of investigation is whether the hours that children put into UHS are negatively associated with their regular school attendance. For this purpose, work hours are grouped as they were previously, reporting on the proportion of children missing school by hours of UHS. In this exercise, children engaged solely in UHS are considered, in order to avoid having to consider economic work hours. The results shown in Table 6.13 indicate a slight increase in school absence as hours engaged in UHS rise. Among boys, no clear pattern emerges. However, among girls, regular school attendance appears to be negatively associated with higher UHS hours. When the same exercise is repeated for children belonging to different age groups, a meaningful pattern does not emerge for 6- to 11-year-olds. However, excessive UHS hours (35 hours or more a week) appears to be negatively associated with regular school attendance among older children. Hence, unless children are engaged in UHS for excessively long hours, their regular school attendance is not likely to be affected by the time they spend on household chores.⁵¹

The data also provide information on the number of days that children miss school. For children engaged solely in UHS, the figure is 2.5 days a week (the maximum is 5 days, the minimum is 0 days), which coincides with the figure estimated for children engaged neither in economic activities nor UHS.

⁵¹ A multivariate logistic regression on the likelihood of missing school by UHS hours (in the form of hour brackets) does not reveal a consistent pattern for younger children. For older children (15 to 17), the risk of missing school increases only beyond 43 hours of UHS. For boys, there is no evidence that UHS hours are negatively associated with regular school attendance, while girls' risk of missing school increases with UHS exceeding 13 hours per week.



7

Unpaid household services deemed hazardous due to working conditions: The case of Uruguay and Bolivia

The survey questionnaires in Uruguay and Bolivia are different from those of the other 14 countries analysed in this paper since they include a series of questions aimed at measuring the conditions under which UHS are carried out. More specifically, children engaged in UHS are asked whether they are subjected to things, processes or conditions harmful to their health and safety, including fire or gas, extreme cold or heat, the use of dangerous tools or contact with electricity.

7.1 Uruguay

In Uruguay, a significant proportion of children engage in unpaid work in the household. The average participation rate is 84.6 per cent, but this increases to 87.7 per cent among girls and 93.5 per cent among children aged 15 to 17 (Table 7.1). In total, 28.9 per cent of children engaged in UHS in Uruguay are found to be subjected to at least one of the risks listed in Table 7.2. This figure is higher among girls (at 32.5 per cent), compared to 25.1 per cent of boys (Table 7.2). The most common risks faced by children performing UHS are exposure to fire or gas (18.2 per cent), working with dangerous tools (22.2 per cent) and coming into contact with electricity (13.4 per cent). A larger proportion of girls are subjected to these risks than boys.

TABLE 7.1 **Uruguay: Proportion of children engaged in unpaid household services, by gender and age**

	All	Male	Female	Ages 5-11	Ages 12-14	Ages 15-17
Children engaged in UHS	84.6	81.5	87.7	77.0	92.4	93.5

Source: Author's calculations from Child Labour Survey in Uruguay.

TABLE 7.2 **Uruguay: Risks faced by children engaged in unpaid household services, by gender (%)**

Work environment	All	Male	Female
Fire or gas	18.2	14.8	21.5
Extreme cold or heat	0.5	0.5	0.5
Dangerous tools (knives or needles)	22.2	18.9	25.5
In contact with electricity (electrical appliances)	13.4	11.8	15.0
Other things, processes or conditions harmful to your health and safety	0.5	0.5	0.4
Any one of the above	28.9	25.1	32.5

Source: Author's calculations from Child Labour Survey in Uruguay.

A larger proportion of older children than younger children are found to face various risks in engaging in unpaid household work (Table 7.3). While 13.3 per cent of 5- to 11-year-olds are subjected to such risks, the figure rises to 34.9 per cent among 12- to 14-year-olds and to 51.3 per cent among 15- to 17-year-olds. For both older and younger children, the most common risks faced are exposure to fire or gas, working with dangerous tools and coming into contact with electricity. The proportions of older children subjected to these three types of risks are considerably higher than among younger children. Hence, although a significant proportion of younger children perform UHS, by and large they are protected from potential dangers.

TABLE 7.3 Uruguay: Risks faced by children engaged in unpaid household services, by age (%)

Work environment	Ages 5-11	Ages 12-14	Ages 15-17
Fire or gas	4.8	22.3	38.6
Extreme cold or heat	0.3	0.6	0.6
Dangerous tools (knives or needles)	9.7	26.6	40.9
In contact with electricity (electrical appliances)	4.6	15.3	27.8
Other things, processes or conditions harmful to your health and safety	0.1	0.4	1.1
Any one of the above	13.3	34.9	51.3

Source: Author's calculations from Child Labour Survey in Uruguay.

TABLE 7.4 Uruguay: Risks faced by children engaged in various types of unpaid household services

Type of UHS	% performing	% hazardous
Shopping	79.7	30.6
Cooking	23.6	78.0
Cleaning	75.2	32.8
Washing	46.6	48.5
Caring	20.8	47.9
Other UHS	15.9	49.7

Source: Author's calculations from Child Labour Survey in Uruguay.

When the types of risks faced by children performing UHS are analysed by type of activity, cooking appears to be most dangerous (Table 7.4). While 30.6 per cent of children engaged in shopping are subjected to identified risks, the figure increases to 78 per cent among children engaged in cooking. This is not surprising given the way risks are defined and the nature of UHS activities. Cooking, for instance, involves working with fire and gas and using sharp objects. It is important to note that children are usually engaged in multiple UHS, so that the differences in risk prevalence among activities do not truly reflect the risks faced by children performing them. (Note the first column of Table 7.4, which shows that the proportion of children engaged in various types of UHS far exceeds 100 per cent.)

7.2 Bolivia

Unpaid household services are pervasive among children in Bolivia.⁵² On average, 82.9 per cent of children engage in such activities. The figure is higher among girls and older children (Table 7.5). As in the case of Uruguay, the Bolivian Child Labour Survey uses a set of questions – shown in Table 7.6 – to identify the risks children face in UHS. In comparison to the questions posed in Uruguay, those used in Bolivia are more extensive and resemble the questions used to identify hazardous economic work. According to this list of questions, 18 per cent of children performing UHS are subject to dust, 14 per cent to fire, gas or flames, and 15.3 per cent to extreme cold. Another 17.2 per cent work with dangerous tools. Other potential risks to children engaged in UHS do not appear to be as pervasive. These include working in water, lakes or rivers, in dark or confined areas, in places with insufficient ventilation, or with chemicals. The proportion of children facing any of the risks listed or others not explicitly mentioned is estimated to be 41.3 per cent. A larger proportion of girls are found to suffer from risks associated with UHS. These include being subjected to dust, fire, gas or flames, and extreme cold, and working with dangerous tools. As a result, while 46.9 per cent of girls performing UHS are reported to face various risks, the corresponding rate among boys is 34.5 per cent.

TABLE 7.5 **Bolivia: Proportion of children engaged in unpaid household services, by gender and age**

	All	Male	Female	Ages 5-11	Ages 12-14	Ages 15-17
Children engaged in UHS	82.9	79.9	86.1	74.8	93.0	93.8

Source: Author's calculations from Child Labour Survey in Bolivia.

TABLE 7.6 **Bolivia: Risks faced by children engaged in unpaid household services, by gender (%)**

Work environment	All	Male	Female
Dust	18.0	16.1	19.8
Fire, gas or flames	14.0	9.4	18.4
Extreme cold	15.3	14.3	16.3
Dangerous tools (knives or needles)	17.2	11.7	22.6
Work in water/lake/river	0.1	0.1	0.0
Work in dark or confined places	0.4	0.4	0.4
Insufficient ventilation	0.04	0.1	0.03
Work with chemicals (wax, glue, etc.)	0.1	0.1	0.1
Other things, processes or conditions harmful to your health and safety	0.4	0.4	0.4
Any one of the above	41.3	34.5	46.9

Source: Author's calculations from Child Labour Survey in Bolivia.

⁵² Fetching water and collecting firewood are considered UHS and not economic activities in Bolivia.

Larger proportions of older children than younger children confront risks while performing UHS (Table 7.7). While 35.6 per cent of 5- to 11-year-olds face various risks, this figure rises to about 46.2 per cent among 12- to 14-year-olds and 47.9 per cent among 15- to 17-year-olds. Notwithstanding the differences in levels, the type of risks faced by younger and older children are very similar.

TABLE 7.7 Bolivia: Risks faced by children engaged in unpaid household services, by age (%)

Work environment	Ages 5-11	Ages 12-14	Ages 15-17
Dust	15.3	20.6	20.9
Fire, gas or flames	8.0	18.3	22.0
Extreme cold or heat	14.4	15.0	17.5
Dangerous tools (knives or needles)	13.3	20.9	21.6
Work in water/lake/river	0.1	0.0	0.0
Work in dark or confined places	0.5	0.3	0.3
Insufficient ventilation	0.1	0.03	0.0
Work with chemicals (wax, glue, etc.)	0.04	0.04	0.2
Other things, processes or conditions harmful to your health and safety	0.2	0.6	0.6
Any one of the above	35.6	46.2	47.9

Source: Author's calculations from Child Labour Survey in Bolivia.

When potential risks faced by children engaged in UHS are examined by type of activity, children who cook are found to face higher risks than those performing other chores (Table 7.8). (Note that children are not solely engaged in cooking but in multiple activities.) In fact, apart from cooking, the proportions of children facing risks in other activities are fairly similar.

TABLE 7.8 Bolivia: Risks faced by children engaged in various types of unpaid household services

Type of UHS	% performing	% hazardous
Shopping	67.6	43.8
Cooking	39.8	54.7
Cleaning	80.0	44.7
Washing	59.7	46.8
Caring	37.7	48.1
Other UHS	23.1	50.3

Note: Other UHS include minor repairs at own dwelling, fetching water and collecting firewood.

Source: Author's calculations from Child Labour Survey in Bolivia.



© UNICEF/NYHQ2011-1461/Friedman-Rudovsky

BOLIVIA German Tumpanillo, age 13, and his 7-year-old sister, Rosaleni, carry sugar cane stalks for planting in a field near the village of San Juan del Carmen, where they now live. German, the first of his siblings to attend school, started at age nine when his family moved to San Juan del Carmen. He now attends school in the mornings and works in the cane fields with his family some afternoons. Although children in the village no longer have to work in the fields, many help their parents plant cane or clear the fields to supplement the family income.



8

The sensitivity of child labour estimates to the inclusion of hazardous UHS

This chapter examines the sensitivity of child labour estimates to the inclusion of UHS hours through an analysis conducted in four steps. In step one, the prevalence of child labour is estimated, ignoring the hours spent in UHS. In step two, children performing hazardous UHS are included among the ranks of child labourers; in doing so, 28 hours is designated as the cut-off point for hazardous UHS, in accordance with the definition used by UNICEF. In step three, children performing hazardous UHS are still included among child labourers, but using a definition of hazardous UHS that is age-sensitive. The cut-off for hazardous UHS is designated at 21 hours per week for 5- to 14-year-olds and 28 hours a week for 15- to 17-year-olds. In step four, the definition used in step 3 is expanded for children engaged in multiple activities (that is, children performing UHS and economic activities); cut-off points of 22, 14, 7 hours and 1 hour of UHS are established for children aged 12 to 17 employed in economic activities for 10 or fewer hours, between 11 and 14 hours, 15 and 20 hours and more than 20, respectively. As discussed earlier, these cut-offs were formulated based on the predicted probabilities of school attendance at different UHS and economic work hours among older girls. In the interest of practicality and to avoid having to impose stricter definitions of child labour for older children, the same thresholds are applied to children of all ages.

TABLE 8.1 Incidence of child labour based on various definitions

Definition of child labour	Total	Male	Female
Definition 1 – excludes UHS	15.5	17.2	13.7
Definition 2 – 28+ UHS	17.0	17.8	16.2
Definition 3 – 21+ for 5-14, 28+ for 15-17	18.0	18.2	17.8
Definition 4 – Def. 3 + UHS: 22U/10E, 14U/11-14E, 7U/15-20, IU/21+E	19.1	19.1	19.1
Definition 1: Bolivia + Uruguay	21.4	24.2	18.6
Definition 2: Bolivia + Uruguay	22.7	24.8	20.6
Definition 3: Bolivia + Uruguay	23.9	25.3	22.5
Definition 4: Bolivia + Uruguay	24.9	26.0	23.7
Definition 5 – working conditions in UHS: Bolivia + Uruguay	45.5	42.8	48.4

Source: Author's calculations from pooled Child Labour Survey data.

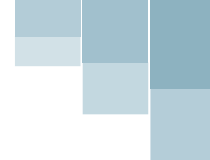
In a final set of exercises, steps one through four are repeated for Bolivia and Uruguay. As noted earlier, the Child Labour Surveys of these countries included information on the conditions of work in UHS. Therefore, for these countries, the definition of hazardous UHS has been expanded to include the conditions under which they are performed.

The results of estimates under Definition 1 indicate that 15.5 per cent of children can be considered child labourers (Table 8.1). When this definition, which is based solely on economic activities, is expanded to cover UHS over 28 or more hours per week, the incidence of child labour increases by 1.5 percentage points – to 17 per cent. When a different threshold of UHS hours is instituted for younger and older children, the incidence of child labour increases by 2.5 percentage points from Definition 1 – to 18 per cent. Finally, if a different hourly threshold is set for children engaged in multiple activities, the incidence of child labour increases to 19 per cent. Hence, the incidence of child labour increases by 10-23 per cent due to definitional changes.

Table 8.1 shows that estimates for girls are more sensitive to definitional changes than those for boys. This is not surprising given that larger proportions of female children are engaged in UHS for longer hours. While the basic child labour definition puts the incidence of child labour among boys at 17.2 per cent, this figure stands at 13.7 per cent for girls. Under Definition 2, the incidence of child labour increases by 0.6 percentage points among boys, but by 2.5 percentage points among girls. Under Definition 3, the change in child labour from Definition 1 is on the order of 1 percentage point among boys, but 4.1 percentage points among girls. Finally, under Definition 4, the change (from Definition 1) is on the order of 1.9 percentage points for boys, but 5.4 percentage points for girls. Hence, the percentage change between Definition 1 and Definition 4 in the incidence of child labour is 11 per cent among boys, but almost 40 per cent among girls. It is important to note, however, that nearly half of the change in the incidence of child labour among girls comes about due to the inclusion of UHS activities in the definition of child labour, albeit at a rather high cut-off point. Lowering this cut-off for younger children and for those in multiple activities results in the remaining increase in the incidence of child labour.

In Bolivia and Uruguay, the incidence of child labour is larger than the average of the 16 countries. Notwithstanding the differences in levels, the change in the magnitude of child labour with the change in the definition (as established by steps one through four) is not very different from the average of the 16 countries: The increase in the incidence of child labour is between 1.3 and 3.5 percentage points. As noted for general averages, estimates for girls are more sensitive to definitional changes in Bolivia and Uruguay as well. What is interesting to note in the case of these two countries is the dramatic jump in the incidence of child labour when the definition is changed to take into account the conditions under which unpaid household services are performed. In this case, the overall rate more than doubles, increasing from 21.4 per cent to 45.5 per cent. Among boys the increase is from 24.2 per cent to 42.8 per cent (a 1.8-fold increase), and among girls, from 18.6 per cent to 48.4 per cent (a 2.6-fold increase).

In summary, the inclusion of UHS in the definition of child labour brings about non-negligible changes in child labour estimates. Instituting various hours in the identification of hazardous UHS changes child labour estimates – especially for girls – but by considerably less than when the child labour definition is modified to include the conditions under which children perform UHS. The main reason for the differential impact is that only a small proportion of children perform UHS for long durations, whereas children who spend even a few hours performing UHS may also face various risks to their well-being. In other words, the risk group is larger when child labour is expanded to cover conditions of work. Child labour definitions that ignore conditions of work necessarily ignore the potential risks that even a few hours of UHS may inflict.



9

Conclusion

The aim of this paper is to contribute to the development of a new child labour definition for use in MICS surveys that includes hazardous unpaid household services performed by children. Such services currently fall outside the SNA boundary, and therefore relevant international conventions – such as ILO's Convention No. 138 and No. 182 – do not include directives on them. However, the *Resolution concerning statistics of child labour* that was adopted at the 18th International Conference of Labour Statisticians in 2008 recognized that certain UHS can be potentially harmful to children.

The main challenge in understanding the hazardous nature of UHS is that these activities are often combined with economic work, so it is not clear whether the adverse effects on children originate from economic activities or unpaid household services. In the literature, the adverse effects of UHS (and economic activities) have been measured on the basis of health and schooling outcomes of children. The data on health outcomes of children (aged 5 to 17) are scarce, as are the studies on this topic. The few studies that do investigate the health-UHS relationship have not found a meaningful effect on health outcomes of children. Studies that investigate the schooling-UHS link, on the other hand, have faced the challenge of identifying the causal effects of UHS, since schooling, UHS and economic work are all choice variables. The empirical results in this area are not decisive either.

The empirical work in this study is based on Child Labour Surveys in 16 countries. The surveys include various schooling indicators, but health outcomes are absent. The paper did not take on the challenge of identifying the causal impact of UHS on schooling, which is problematic considering the data at hand.

9.1 Findings on links between UHS and schooling

In the first part of the study, four main schooling indicators were used to assess the association between UHS and children's well-being: school attendance, grade attainment, grade repetition and school days missed. The results indicate the following:

- More than half of children (56.9 per cent) are engaged in UHS for an average of 9.1 hours per week.
- Hours spent in UHS are considerably less than hours spent on economic work.
- 41.9 per cent of children are engaged in UHS and are not employed (that is, not engaged in economic activities).

- Children who are not employed but who are engaged in UHS have school attendance rates that are only slightly lower than those who are neither employed nor engaged in UHS. In contrast, large differences in attendance rates are observed between employed and non-employed children.
- Multivariate analyses on school attendance disaggregated by age do not find evidence of a negative association between UHS involvement and school attendance. However, children of all age groups engaged in economic activities are less likely to attend school.
- Depending on the extent of their involvement in UHS, substantial declines in the probability of school attendance are observed for children aged 6 to 14 for UHS hours that are equal to or exceed 21 hours. In the case of children aged 15 to 17, this is true at 28 hours or more of UHS per week.
- A significant proportion of children (15 per cent) are engaged in both UHS and economic activities. In terms of school attendance, these children fare worse than their counterparts who are engaged solely in UHS.
- Among 12- to 14-year-olds employed (in economic work) for up to and including 14 hours per week, significant declines in the probability of school attendance are found when they also perform 20 hours or more of UHS per week. Among 15- to 17-year-olds employed for less than 43 hours per week, girls' (but not boys') school attendance is found to be negatively associated with even a small number of UHS hours.
- Linking grade attainment to work status is difficult due to different reference periods used to measure the two phenomena. Notwithstanding this drawback, there is no evidence that children engaged solely in UHS lag behind their peers who are not employed and not engaged in UHS.
- The link between grade repetition and UHS is also hard to assess due to differences in reference periods. Weak evidence is found for a positive association between UHS and repeating grades among children who have ever attended school. Multivariate analysis also fails to show that children engaged in UHS have a higher likelihood of grade repetition. However, there is some evidence that girls engaged in UHS have a higher likelihood of repeating a grade.
- The results on school attendance, grade repetition and grade attainment are consistent. Children engaged solely in UHS are not found to have lower school attendance or higher grade repetition rates, on average, with the result that their grade attainment does not differ from that of children who are neither engaged in UHS nor economic activities. The finding that school attendance decreases only when a substantial numbers of hours are spent in UHS means that only a small proportion of children are affected, and they are too few to move the average grade attainment downwards.
- The proportion of children missing school in the reference week is only slightly higher among those engaged solely in UHS than their counterparts who are neither engaged in UHS nor economic activities. Among children engaged in UHS, a meaningful relationship between UHS hours and the probability of missing school is not found, with the exception of older children performing a very high number of UHS hours and girls engaged for a moderate number of hours. These findings imply that other factors besides the hours engaged in UHS play a role in determining when and why children miss school.

Based mainly on empirical regularities between school attendance and hours spent in UHS, minimum thresholds of 21 hours for 5- to 14-year-olds and 28 hours for 15- to 17-year-olds can be considered reasonable. For 12- to 17-year-olds engaged in multiple activities, a lower hourly cut-off point is proposed that varies with the number of hours the child is engaged in economic work. The threshold for younger children implies that nearly no drop in school attendance probability is to be tolerated for 5- to 11-year-olds, while at most a 4-percentage-point decline is to be tolerated for 12- to 14-year-olds. These thresholds have somewhat different implications for boys' and girls' schooling. For UHS hours that do not exceed 20 hours, no meaningful change in school attendance probability is found among boys. For girls, however, predicted school attendance drops by at most 2 percentage points among 5- to 11-year-olds, and by 5 percentage points among 12- to 14-year-olds.

In the case of older children, the threshold of 28 hours implies at most an 11-percentage-point drop in the probability of school attendance. However, the implied effect of the UHS threshold varies by the gender of the child, to a greater degree than what is observed for younger children. While a meaningful drop in the probability of school attendance is not observed for boys engaged in UHS for less than 28 hours per week, the corresponding drop for girls is as much as 17 percentage points. A fundamental difficulty in the identification of hazardous UHS for older children based on hours of UHS and schooling indicators is that these children are often beyond compulsory school age. That is perhaps why no mention is made of the adverse effects of employment on schooling in the determination of hazardous economic activities for this group of children. Surely, a 43-hour work week would leave little room for regular school attendance.

9.2 Findings on risks faced by children performing hazardous UHS and sensitivity of child labour estimates to definitional changes

The second part of this paper looked at the risks faced by children performing UHS under hazardous working conditions. Findings were based on two countries (Uruguay and Bolivia), for which information on working conditions in UHS is available. These risks included exposure to fire or gas, working with dangerous tools, coming into contact with electricity and being subjected to dust and extreme cold.

The final part of the study assessed the sensitivity of child labour estimates to the inclusion of hazardous UHS. When the hazard is defined solely on the basis of hours engaged in UHS, child labour estimates increase only slightly (by 11 per cent) among boys and at most by 40 per cent among girls. Depending on the threshold used for UHS hours, the overall change in child labour estimates varies between 10 per cent and 23 per cent. The really substantial change in estimates of child labour occurs when hazardous UHS are defined not solely on the basis of hours but on the conditions under which these services are performed. Based on figures from Bolivia and Uruguay, child labour estimates increase 2.6-fold among girls and 1.8-fold among boys when conditions of work are taken into account, along with hours of UHS.

Within the framework of this paper, limited analysis was undertaken on the type of UHS performed, since the data do not differentiate between the hours devoted to various activities. Hence, with the information currently collected through Child Labour Surveys and MICS, it is not possible to determine what type of UHS assume most of a child's time. Given that a



LIBERIA A girl washes clothes in the Point Four slum neighbourhood in Monrovia, the capital.

very detailed listing of UHS activities – analogous to occupational codes for economic activities – is probably not possible within the framework of MICS, broad classifications of UHS are not likely to be helpful in identifying the types of activities that are potentially harmful to children's well-being.

If the main aim is to identify hazardous UHS (other than information on types of UHS carried out – to be collected via broad classifications), it would be necessary to know the conditions under which they are performed. A good example of this is the set of questions used in Uruguay to identify hazardous UHS. After all, knowing that a child is involved in cooking reveals very little about the type of risks he/she faces. Cooking over an open fire is very different from cooking in a modern kitchen. Likewise, under certain circumstances, children involved in the care of the sick may put their health at risk. In short, an operational definition of hazardous UHS is needed that is not limited to the hours of UHS performed. Such a definition would rely on a methodology similar to the one adopted in the identification of hazardous economic work and include not only hours but the nature of the work carried out by children.

Household-based time-use surveys, where children are asked to keep track of their activities throughout the day, may be used to complement Child Labour Surveys. Time-use surveys have the advantage of providing detailed information on

activities carried out by children, the nature of these activities and their exact timing in a typical day. Although time-use surveys require the active participation of the individual in question, they provide a fuller picture of a child's typical day and do not require that the child is able to identify whether the activity in question is of an economic nature. All the respondent is required to do is to keep track of his/her activities over short periods of time.

Other purposefully collected data could also be useful in better understanding the link between schooling and UHS and whether all children engaged in such activities are able to fully participate in schooling. Assessing the learning outcomes of children is also important, but Child Labour Surveys provide little information in this regard. Linking the schooling outcomes of children to UHS and/or economic activities is complicated by the fact that most outcome variables – cognitive achievements, grade levels and the like – reflect the cumulative effects of past UHS and/or economic activities. Hence, understanding children's past involvement in various activities can be important in assessing the degree of possible adverse effects of these activities on school outcomes of children.

Another important issue concerns the potential health effects of hazardous UHS. Longitudinal surveys that track down children can help assess the short- and long-term health consequences of various activities on children. For these surveys to pin down the sources of any adverse effects observed, the nature of the work being carried out (whether economic or UHS) needs to be understood. In other words, the conditions of work should not be limited to time intensity.

Bibliography

- Assaad, R., L. Deborah and N. Zibani, 'The Effect of Child Work on School Enrollment in Egypt', Mimeo, 2003.
- Dayioğlu, M., *How Sensitive Are Estimates of Working Children and Child Labour to Definitions? A comparative analysis*, MICS Methodological Papers, No. 1, Statistics and Monitoring Section, Division of Policy and Strategy, United Nations Children's Fund, New York, 2012.
- Edmonds, E., 'Child Labor', *Handbook of Development Economics*, vol. 4, pp. 3607-3710, edited by T.P. Schultz and J. Strauss, Elsevier Science, Amsterdam, 2008a.
- Edmonds, E., 'Defining Child Labour: A review of the definitions of child labour in policy research', Working paper, International Labour Organization, Geneva, 2008b.
- Francavilla, F., and S. Lyon, 'Household Chores and Child Health: Preliminary evidence from six countries', Understanding Children's Work Project Working Paper Series, no. 43876, 2003.
- Gunnarsson, V., P. F. Orazem and M.A. Sánchez, 'Child Labor and School Achievement in Latin America', *World Bank Economic Review*, vol. 20, no. 1, pp. 31-54, 2006.
- International Labour Organization, *Global Child Labour Trends 2000-2004*, ILO, Geneva, 2006.
- International Labour Organization, *Children's Non-Market Activities and Child Labour Measurement: A discussion based on household survey data*, ILO, Geneva, 2007.
- International Labour Organization, *Report of the 18th International Conference of Labour Statisticians*, ILO, Geneva, 2009.
- Levison, D., and K. S. Moe, 'Household Work as a Deterrent to Schooling: An analysis of adolescent girls in Peru', *Journal of Developing Areas*, vol. 32, no. 3, pp. 339-356, 1998.
- Levison, D., K. S. Moe and F. M. Knaul, 'Youth Education and Work in Mexico', *World Development*, vol. 29, no. 1, pp. 167-188, 2001.

Appendix

TABLE A1 Survey months and the school year

Country	School year*	Survey month	Survey year	Rejuvenate	Compulsory school age
Albania	September-May	May	2010	Yes	6
Benin	October-June	February-March	2008	No	6
Bolivia	February-November	October-December	2008	Yes	6
Cameroon	September-June	September-December	2007	No	6
Egypt	September-June	April-May	2010	Yes	6
Indonesia	July-June	June-August	2009	No	7
Jordan	September-June	December-January	2007/2008	No	6
Kyrgyzstan	September-May	November-December	2007	No	7
Madagascar	September-June	October-December	2007	No	6
Mali	October-June	September-November	2005	No	7
Niger	September-July	January-February	2009	No	7
Peru	April-December	September-December	2007	Yes	6**
Republic of Moldova	September-May	October-December	2009	No	7
Rwanda	January-November	June	2008	No	7
Senegal	October-June	April-June	2005	Yes	7
Uruguay	March-December	February-August	2009	No	6

Notes: **Pre-primary school is compulsory in Peru, beginning at age three. In none of the other countries considered is pre-primary school compulsory. To render Peru comparable with the other countries, compulsory school age in that country was set at age six.

Source: *UNESCO database, Table 1, <http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=199&IF_Language=eng>.

TABLE A2 **Proportion of children engaged in various activities, by gender and age**

Children's activities	Total	Male	Female	Ages 5-11*	Ages 12-14	Ages 15-17
Albania						
Unpaid household services	40.9	32.5	49.8	19.3	57.0	68.8
School attendance	92.9	93.4	92.4	97.5	94.2	78.2
Economic activity	7.7	9.1	6.3	2.4	9.4	16.8
Benin						
Unpaid household services	88.7	86.3	91.5	84.7	95.2	95.8
School attendance	75.3	79.7	70.2	78.1	76.0	64.5
Economic activity	34.0	33.5	34.6	29.5	39.1	45.2
Bolivia						
Unpaid household services	82.9	79.9	86.1	74.7	93.0	93.8
School attendance	94.8	94.9	94.8	98.6	93.5	84.1
Economic activity	26.0	27.2	24.8	17.9	33.5	39.3
Cameroon						
Unpaid household services	91.5	89.6	93.4	87.0	97.1	98.2
School attendance	90.9	92.2	89.5	98.0	91.9	73.5
Economic activity	41.0	41.3	40.6	30.5	53.6	57.4
Egypt						
Unpaid household services	67.2	62.7	72.0	56.6	79.6	78.8
School attendance	91.6	91.7	91.4	97.0	88.9	77.6
Economic activity	10.5	15.8	5.0	4.0	13.3	22.6
Indonesia						
Unpaid household services	41.2	30.7	52.3	23.6	55.0	65.8
School attendance	89.7	89.2	90.2	97.2	93.2	75.4
Economic activity	9.7	10.8	8.5	3.3	10.8	21.9
Jordan						
Unpaid household services	31.6	26.7	37.0	17.4	47.3	51.7
School attendance	95.0	94.4	95.8	98.5	96.1	86.1
Economic activity	1.8	3.1	0.4	0.3	1.9	5.6
Kyrgyzstan						
Unpaid household services	70.5	64.4	77.3	50.4	88.4	91.1
School attendance	96.0	95.4	96.7	98.7	99.1	89.2
Economic activity	37.5	39.0	35.8	25.1	44.5	54.2

Children's activities (CONT.)	Total	Male	Female	Ages 5-11*	Ages 12-14	Ages 15-17
Madagascar						
Unpaid household services	84.6	83.2	86.1	78.8	93.5	93.1
School attendance	69.3	69.5	69.2	73.3	76.6	48.9
Economic activity	27.6	28.9	26.3	16.3	36.7	54.4
Mali						
Unpaid household services	57.6	37.9	78.9	53.5	64.8	62.7
School attendance	53.9	59.1	48.2	56.9	56.3	43.8
Economic activity	68.7	69.2	68.2	61.8	77.2	82.6
Niger						
Unpaid household services	89.0	86.5	91.5	87.4	92.7	91.5
School attendance	52.6	57.9	47.4	60.5	53.2	26.3
Economic activity	50.6	47.8	53.3	43.3	62.9	67.4
Peru						
Unpaid household services	77.5	73.2	81.9	73.6	84.5	78.7
School attendance	91.9	92.2	91.5	98.2	92.0	70.3
Economic activity	42.1	45.1	38.9	33.3	49.6	54.1
Republic of Moldova						
Unpaid household services	86.1	83.5	88.7	76.9	95.7	92.0
School attendance	95.7	94.3	97.2	99.4	99.4	88.4
Economic activity	29.7	35.1	24.0	13.8	43.3	42.4
Rwanda						
Unpaid household services	84.8	83.7	85.9	79.3	94.4	89.2
School attendance	86.2	85.5	86.9	91.9	91.9	66.6
Economic activity	11.3	11.8	10.7	3.4	12.6	33.8
Senegal						
Unpaid household services	46.3	17.7	75.4	35.9	57.7	61.3
School attendance	54.3	56.4	52.1	60.7	50.2	41.8
Economic activity	19.7	25.6	13.8	12.3	24.0	34.4
Uruguay						
Unpaid household services	84.6	81.5	87.7	77.0	92.4	93.5
School attendance	91.0	89.4	92.7	99.5	94.1	71.4
Economic activity	11.6	15.2	7.7	3.5	11.7	29.3

Notes: *For school attendance, the age of the child at the start of the school term is used. The lower age limit is set at the age at which children begin compulsory schooling.

Source: Author's calculations from pooled Child Labour Survey data.

TABLE A3 **Logistic regression results on school attendance by hours engaged in unpaid household services – narrow categorization of hours**

	Ages 6-11	Ages 12-14	Ages 15-17
Age	0.374*** [0.023]	-0.398*** [0.065]	-0.324*** [0.084]
Female	-0.170*** [0.063]	0.054 [0.129]	-0.194 [0.144]
7-9 hours	-0.244*** [0.078]	-0.147 [0.171]	0.017 [0.185]
10-11 hours	-0.325** [0.143]	-0.085 [0.217]	-0.01 [0.306]
12-13 hours	-0.2 [0.152]	-0.752*** [0.254]	-0.478 [0.304]
14-15 hours	-0.434*** [0.097]	-0.718*** [0.185]	-0.491** [0.202]
16-17 hours	-0.596* [0.324]	-0.675** [0.278]	-0.784** [0.309]
18-19 hours	-0.361* [0.212]	-0.940*** [0.245]	-0.652* [0.367]
20-21 hours	-1.121*** [0.149]	-1.265*** [0.224]	-1.074*** [0.230]
22-23 hours	-0.877*** [0.327]	-1.040** [0.405]	-0.652 [0.420]
24-25 hours	-0.876*** [0.266]	-2.096*** [0.507]	-1.054** [0.432]
26-27 hours	-1.567* [0.808]	-1.479** [0.580]	-1.326*** [0.506]
28-29 hours	-1.734*** [0.171]	-1.813*** [0.320]	-1.857*** [0.289]
30-32 hours	-1.779*** [0.344]	-1.529*** [0.292]	-2.110*** [0.509]
33-35 hours	-2.024*** [0.211]	-2.767*** [0.377]	-2.467*** [0.313]
36-42 hours	-3.798*** [0.839]	-2.754*** [0.349]	-3.388*** [0.463]
43+ hours	-2.552*** [0.250]	-3.526*** [0.307]	-2.967*** [0.396]
Constant	-0.978*** [0.193]	7.248*** [0.840]	7.003*** [1.354]
Observations	53,653	30,464	19,730
Pseudo R squared	0.289	0.175	0.122

Notes: Covers school-aged children engaged in UHS only. Robust standard errors in brackets. The reference category for UHS hours is less than 7 hours per week. Includes country fixed effects. *Significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent.

Source: Author's calculations from pooled Child Labour Survey data.

TABLE A4 **Logistic regression results on school attendance by hours engaged in unpaid household services – broad categorization of hours**

	Ages 6-11	Ages 12-14	Ages 15-17
Age	0.374*** [0.023]	-0.399*** [0.065]	-0.327*** [0.084]
Female	-0.170*** [0.063]	0.05 [0.129]	-0.187 [0.144]
7-9 hours	-0.239*** [0.078]	-0.137 [0.171]	0.017 [0.185]
10-12 hours	-0.260** [0.120]	-0.360* [0.190]	-0.308 [0.241]
13-14 hours	-0.405*** [0.098]	-0.667*** [0.189]	-0.410** [0.206]
15-17 hours	-0.575*** [0.195]	-0.683*** [0.240]	-0.634** [0.258]
18-20 hours	-0.493*** [0.170]	-1.003*** [0.204]	-0.744** [0.307]
21-23 hours	-1.144*** [0.154]	-1.232*** [0.224]	-1.000*** [0.229]
24-26 hours	-1.087*** [0.322]	-1.899*** [0.464]	-1.130*** [0.390]
27-29 hours	-1.662*** [0.165]	-1.805*** [0.302]	-1.775*** [0.277]
30-32 hours	-1.776*** [0.344]	-1.513*** [0.291]	-2.111*** [0.510]
33-35 hours	-2.013*** [0.211]	-2.753*** [0.378]	-2.465*** [0.313]
36-42 hours	-3.793*** [0.841]	-2.738*** [0.349]	-3.386*** [0.464]
43+ hours	-2.505*** [0.250]	-3.506*** [0.315]	-2.973*** [0.403]
Constant	-0.977*** [0.193]	7.253*** [0.845]	7.058*** [1.348]
Observations	53,653	30,464	19,730
Pseudo R squared	0.289	0.173	0.120

Notes: Covers school-aged children engaged in UHS only. Robust standard errors in brackets. The reference category for UHS is less than 7 hours per week. Includes country fixed effects. *Significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent.

Source: Author's calculations from pooled Child Labour Survey data.

TABLE A5 **Logistic regression results on school attendance by hours engaged in unpaid household services and gender**

	Male			Female		
	Ages 6-11	Ages 12-14	Ages 15-17	Ages 6-11	Ages 12-14	Ages 15-17
Age	0.384*** [0.033]	-0.279** [0.121]	-0.383** [0.150]	0.368*** [0.030]	-0.472*** [0.077]	-0.311*** [0.100]
7-9 hours	-0.270** [0.112]	-0.296 [0.270]	0.004 [0.295]	-0.200* [0.107]	-0.05 [0.205]	-0.003 [0.237]
10-12 hours	0.048 [0.173]	-0.069 [0.377]	0.474 [0.580]	-0.423*** [0.157]	-0.501** [0.228]	-0.595** [0.292]
13-14 hours	-0.208 [0.153]	-0.102 [0.331]	-0.546 [0.403]	-0.525*** [0.129]	-0.884*** [0.243]	-0.445* [0.250]
15-17 hours	0.17 [0.324]	-0.371 [0.643]	-0.196 [0.562]	-0.864*** [0.237]	-0.839*** [0.272]	-0.813*** [0.308]
18-20 hours	0.109 [0.330]	-0.083 [0.473]	0.741* [0.413]	-0.696*** [0.205]	-1.207*** [0.240]	-1.051*** [0.360]
21-23 hours	-0.562** [0.230]	-0.692** [0.332]	-0.331 [0.545]	-1.380*** [0.194]	-1.413*** [0.273]	-1.184*** [0.274]
24-26 hours	-0.727 [0.694]	-1.286*** [0.393]	-0.500 [0.655]	-1.351*** [0.340]	-2.122*** [0.543]	-1.306*** [0.436]
27-29 hours	-1.710*** [0.354]	-0.462 [0.485]	-0.689 [0.797]	-1.701*** [0.189]	-2.146*** [0.362]	-2.041*** [0.312]
30-32 hours	-0.617 [0.742]	-1.966*** [0.666]	0.260 [1.111]	-2.036*** [0.418]	-1.572*** [0.319]	-2.484*** [0.536]
33-35 hours	-1.420*** [0.483]	-1.746*** [0.560]	-0.776 [0.565]	-2.259*** [0.249]	-2.948*** [0.435]	-2.714*** [0.366]
36-42 hours	-1.269** [0.500]	-1.393** [0.642]	-1.937* [1.064]	-4.204*** [0.871]	-3.150*** [0.434]	-3.810*** [0.523]
43+ hours	-1.819*** [0.540]	-2.932*** [0.546]	-1.915*** [0.633]	-2.905*** [0.295]	-3.676*** [0.373]	-3.196*** [0.472]
Constant	-0.909*** [0.273]	6.185*** [1.556]	8.183*** [2.439]	-1.234*** [0.267]	7.884*** [1.009]	6.425*** [1.602]
Observations	25,098	12,955	7,935	26,706	17,509	11,795
Pseudo R squared	0.262	0.083	0.062	0.308	0.229	0.149

Notes: Covers school-aged children engaged in UHS only. Robust standard errors in brackets. The reference category for UHS is less than 7 hours per week. Includes country fixed effects. For 6- to 11-year-olds, no variation is observed in schooling for girls in Uruguay. These observations are not used in estimation. * Significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent.

Source: Author's calculations from pooled Child Labour Survey data.

Figure A1 Weekly economic work hours of children, by gender

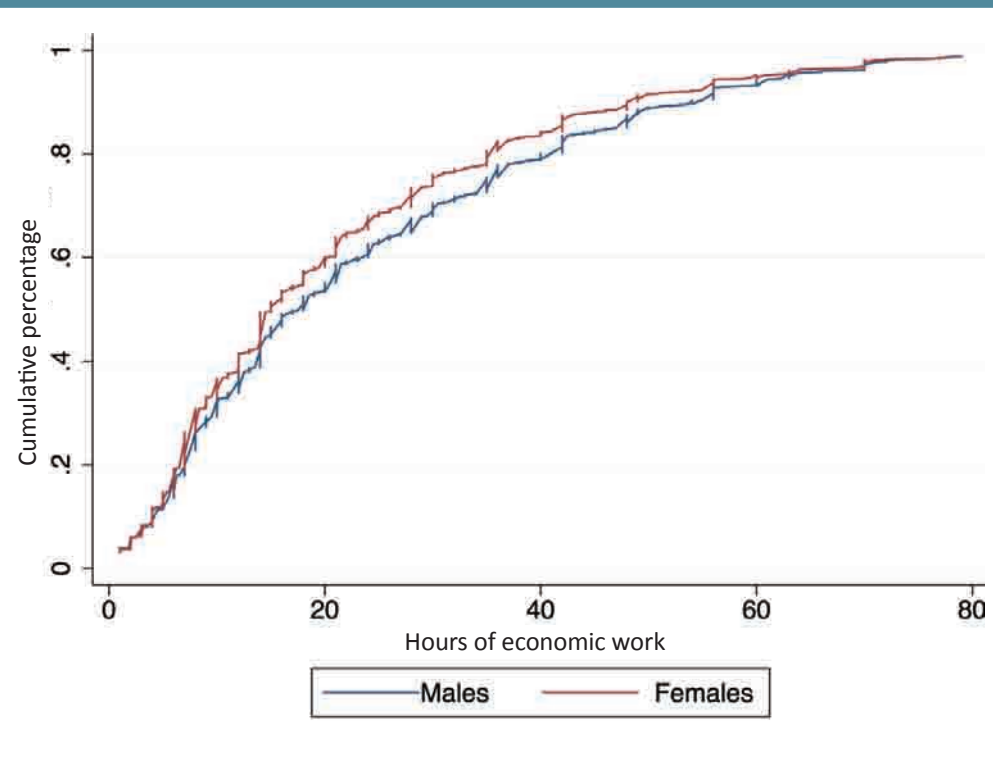


Figure A2 Weekly UHS hours of children, by gender

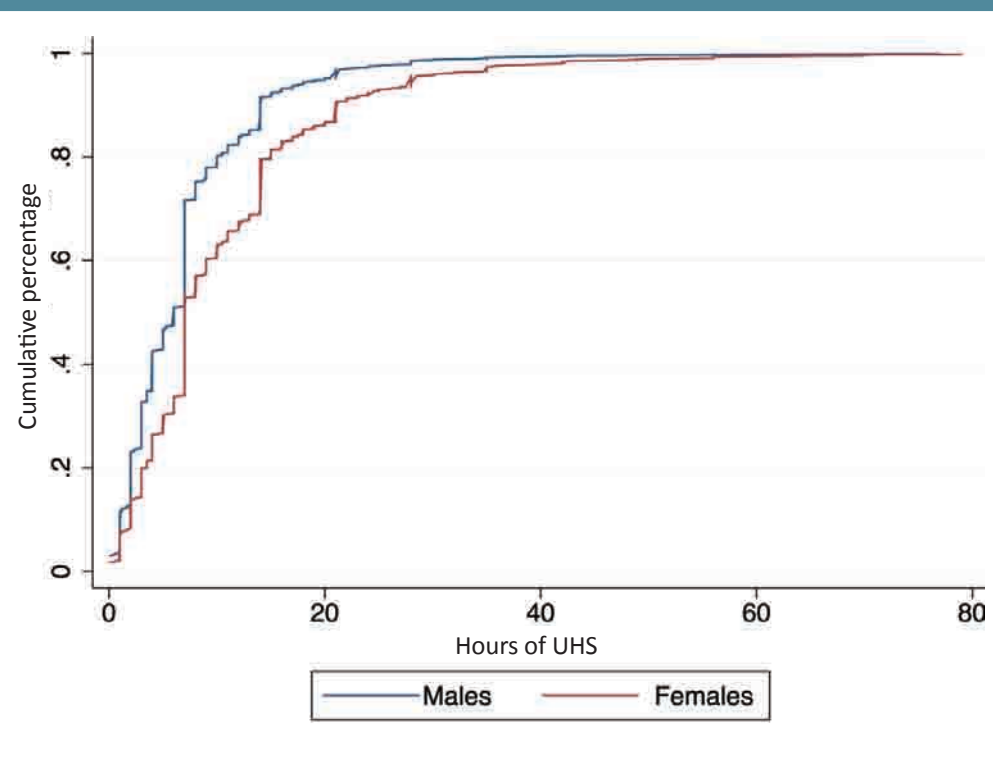
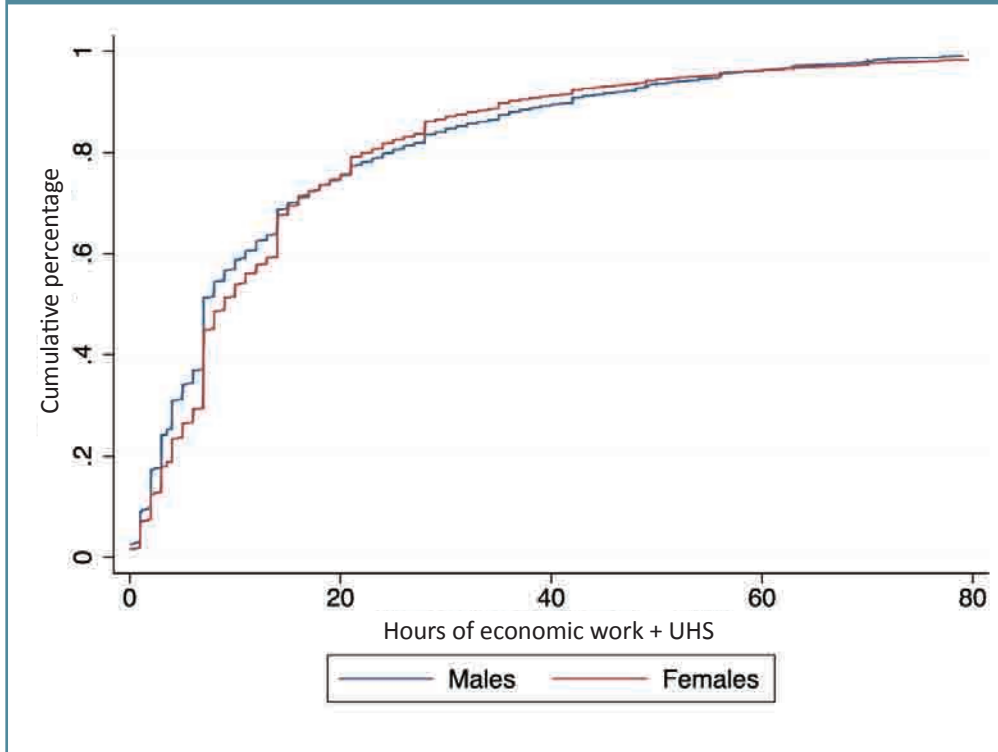


Figure A3 **Total weekly work hours (economic activities and UHS) of children, by gender**



For information on the report, please contact:

United Nations Children's Fund
Statistics and Monitoring Section, Division of Policy and Strategy
3 United Nations Plaza, New York, NY 10017, USA
Tel: +1 (212)-326-7247
Email: mics@unicef.org