
Child Labour in South Asia

Eric V. Edmonds

5

Unclassified

DELSA/ELSA/WD/SEM(2003)5



Organisation de Coopération et de Développement Economiques
Organisation for Economic Co-operation and Development

20-May-2003

English - Or. English

DIRECTORATE FOR EMPLOYMENT, LABOUR AND SOCIAL AFFAIRS
EMPLOYMENT, LABOUR AND SOCIAL AFFAIRS COMMITTEE

DELSA/ELSA/WD/SEM(2003)5
Unclassified

OECD SOCIAL, EMPLOYMENT AND MIGRATION WORKING PAPERS NO. 5

Child Labour in South Asia

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JEL Classification: J82

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JT00144574

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SUMMARY¹

1. The International Labour Organization (ILO) estimates that 19% of children aged 5-14 in Asia and the Pacific are economically active (ILO, 2002). These 127.3 million children constitute 60% of all child labourers worldwide. The aim of this study is to better understand child labour in South Asia through in-depth case studies of the child labour experience in three countries: Nepal, Pakistan, and Vietnam.

2. Several themes about child labour emerge in examining data from these three countries. First, any discussion of child labour needs to consider wage work as well as unpaid work including household production activities. Children who work in one type of activity are more likely to work in other activities as well. Thus, focusing on only one aspect of child employment seriously understates child labour supply. Second, there is some evidence of important substitutions of child and adult labour across different household activities that may be very costly for the welfare of the child but would be missed by a focus on wage work or work in a household business alone.

3. This study also finds that existing child labour policy appears to be seriously misdirected. First, almost all efforts against child labour are directed at manufacturing employment, but most child labour (like adult employment) is in agriculture. Second, existing government policies largely focus on preventing children from working and many high-income nations even threaten to use trade sanctions to punish countries with high levels of child labour. These approaches ignore the reasons why children work.

4. Most of the documented variation in child labour is at the household level. Thus, household factors are more important than community or child specific-factors in determining child labour supply. The earnings opportunities available to children within the household, household composition, and household living standards are three key factors that appear particularly important in explaining why children work. Cultural factors may also play some role in child labour supply. Across countries, this study finds large differences in how the activities of children vary with gender. Aside from gender differences in labour supply that might have a cultural component, there is some evidence of persistence in child labour supply within households through time. However, this appears to take the form of a very small number of hours worked. Moreover, the degree of observed persistence in child labour within households is dwarfed by the large declines in child labour observed with improvements in living standards.

5. These results have important implications for theories of child labour supply and the resulting policy implications. First, there is no empirical support for two popular models of child labour supply: parental callousness and so-called “nimble fingers”. The parental callousness theory posits that parents do not care about the welfare of their children and will always seize any earnings opportunities open to children. However, this study finds child labour supply to be very responsive to variation in household attributes, especially household living standards. The “nimble fingers” theory claims that children work because of the presence of certain types of production in which children have comparative advantage. The data do not provide any evidence of a correlation between the presence of an industry in a community and child labour. In fact, the data suggest that household-specific factors are much more important in child

1. This case study is part of the project on Child Labour and Economic Development carried out by the Directorate for Employment, Labour and Social Affairs.

labour supply than are community factors. Moreover, most children work in activities where their labour is substitutable for adult labour.

6. Second, this study's findings recommend policies that do not attempt to eliminate or restrict child labour supply. Instead, policies that recognize explicitly the determinants of child labour supply may be more effective. Several policy options seem promising. First, using financial incentives to ameliorate some of the costs of child labour may both reduce the household's need to send children to work and reduce the costs of child labour for children that work. Second, efforts to modify the child's working environment to make child labour more compatible with schooling and leisure may mitigate the costs of child labour without punishing households for needing to send children to work. Third, recognizing that part of the reason children work is because of missing markets for the goods and services children provide to the household suggests that policies that either promote these markets or provide substitutes for the contribution of children may lead to large reductions in child labour.

RÉSUMÉ²

7. Selon les estimations de l'Organisation mondiale du travail (OIT), dans la région Asie-Pacifique, 19 % des enfants âgés de 5 à 14 ans exercent une activité économique (OIT, 2002). Ce chiffre, qui correspond à 127.3 millions d'enfants, représente 60 % de l'ensemble des petits travailleurs à l'échelle internationale. La présente étude a pour objectif de mieux comprendre le travail des enfants en Asie du Sud. Pour ce faire, des études de cas approfondies ont été effectuées à partir des constatations faites dans trois pays : le Népal, le Pakistan et le Viêt-Nam.

8. Lorsqu'on examine les données provenant de ces trois pays, on peut dégager plusieurs aspects relatifs au travail des enfants. La présente étude constate que tout examen sur ce thème doit prendre en compte le travail rémunéré ainsi que le travail non rémunéré, y compris les activités de production domestique. La probabilité est plus grande que les enfants exerçant un type d'activité travaillent également dans d'autres activités. En ne se concentrant que sur un seul aspect de l'emploi des enfants, on risque donc de sous-estimer singulièrement l'offre de main-d'œuvre enfantine. En outre, certaines données montrent que cette main-d'œuvre se substitue largement aux adultes pour l'exécution de différentes tâches domestiques, phénomène probablement très coûteux en termes de bien-être de l'enfant, et dont on risquerait de ne pas tenir compte si l'on avait les études uniquement sur le travail rémunéré ou le travail au sein d'une entreprise familiale.

9. La présente étude conclut également que les politiques en place concernant le travail des enfants semblent très mal orientées. Premièrement, la quasi-totalité des efforts de lutte contre le travail des enfants sont axés sur l'emploi dans le secteur manufacturier alors que dans la plupart des cas, les enfants travaillent dans l'agriculture (ce qui vaut aussi pour les adultes). Deuxièmement, les politiques gouvernementales en vigueur privilégient les mesures destinées à empêcher les enfants de travailler, et nombre de pays à haut revenu vont même jusqu'à menacer de recourir à des sanctions commerciales entraînant une baisse de revenu pour pénaliser les pays où le pourcentage d'enfants au travail est élevé. Or, ces méthodes ne font aucun cas des raisons pour lesquelles les enfants travaillent.

10. L'examen de la documentation sur le sujet montre que c'est au niveau des ménages que l'incidence du travail des enfants varie le plus. Les facteurs domestiques jouent donc un rôle plus important dans la détermination de l'offre de main-d'œuvre enfantine que les facteurs liés à la collectivité ou les facteurs propres aux enfants. Les possibilités d'apporter un revenu qui s'offrent aux enfants au sein de la famille, la composition de celle-ci et son niveau de vie sont trois paramètres clés, qui semblent particulièrement importants pour expliquer les raisons pour lesquelles les enfants travaillent. Il n'est pas impossible que des facteurs culturels interviennent également. Comparant les pays, la présente étude montre qu'il existe des écarts considérables dans le taux d'activité selon le sexe de l'enfant. Outre les différences garçons-filles dans l'offre de main-d'œuvre enfantine imputables à des motifs culturels, certaines données montrent qu'au sein des familles, le travail des enfants se perpétue au fil du temps. Il semble toutefois que ce travail soit limité à un très petit nombre d'heures et ne soit pas forcément très pénible. De surcroît, la persistance du travail des enfants dans les familles que l'on a observée est faible en comparaison du recul considérable du travail enfantin accompagnant l'amélioration des niveaux de vie.

2. La présente étude de cas s'inscrit dans le cadre du projet sur le Travail des Enfants et le Développement Économique mené par la Direction de l'Emploi, du Travail et des Affaires Sociales.

11. Ces constats ont des implications importantes pour les théories relatives à l'offre de main-d'œuvre infantine et l'action des pouvoirs publics qui en résulte. Premièrement, aucune donnée d'observation ne vient étayer les deux arguments couramment utilisés pour expliquer cette offre : l'insensibilité des parents et la théorie des « doigts agiles ». La théorie de l'insensibilité parentale a pour prémisses que les parents ne s'occupent pas du bien-être de leurs enfants et qu'ils saisissent toutes les possibilités de se procurer un revenu même si cela implique de faire travailler leurs enfants. Or, la présente étude montre que l'offre de main-d'œuvre infantine est extrêmement tributaire des différences d'attributs des ménages, en particulier du niveau de vie de la famille. La théorie des « doigts agiles » prétend que les enfants travaillent parce que, dans certains types de production, ils jouissent d'un avantage comparatif. Pourtant les données n'apportent aucune preuve d'une corrélation entre le travail des enfants et la présence de telle ou telle industrie au sein d'une communauté. En fait, les observations conduisent à penser que les facteurs propres aux ménages jouent un rôle nettement plus important dans l'offre de main-d'œuvre infantine que les facteurs liés à la communauté. De plus, les enfants qui travaillent exercent pour la plupart des activités qui pourraient parfaitement être effectuées par une main-d'œuvre adulte.

12. Deuxièmement, les conclusions de l'étude contiennent des recommandations d'action qui ne chercheraient pas à éliminer l'offre de main-d'œuvre infantine, ni même à la restreindre. Des politiques reconnaissant explicitement les éléments déterminant l'offre de cette main-d'œuvre se révéleront probablement plus efficaces. En matière d'action publique, plusieurs pistes semblent prometteuses. Tout d'abord, s'il existait des incitations financières destinées à compenser la perte de revenu qui en résulterait, il se pourrait que les familles aient moins besoin de faire travailler leurs enfants et que les coûts pour les enfants qui travaillent soient moins onéreux. En deuxième lieu, des efforts destinés à modifier les conditions dans lesquelles les enfants travaillent afin de rendre leur activité plus compatible avec la scolarisation et les loisirs pourraient atténuer les coûts pour les enfants travailleurs sans pénaliser les familles ayant besoin du revenu que leur procure le travail de leurs enfants. Troisièmement, si l'on admet que l'une des raisons pour lesquelles les enfants travaillent tient à l'absence de marchés de biens et de services que les enfants apportent à leur famille, on peut penser que la promotion de ces marchés ou la fourniture de moyens de remplacer l'apport des enfants seraient de nature à engendrer un recul considérable du travail des enfants.

TABLE OF CONTENTS

I.	INTRODUCTION	10
II.	WHAT IS CHILD LABOUR?.....	12
2.1	Market Work	12
2.2	Household Production	14
2.3	Special Cases	18
III.	WHY DO CHILDREN WORK: THEORY.....	21
3.1	Child Attributes	22
3.2	Household Attributes.....	23
3.3	Community Attributes	24
IV.	WHY DO CHILDREN WORK: CHILD ATTRIBUTES	26
4.1	Age	26
4.2	Gender	28
4.3	Birth Order	30
V.	WHY DO CHILDREN WORK: HOUSEHOLD ATTRIBUTES	32
5.1	Parental Attitudes	34
5.2	Home Enterprises	37
5.3	Household Composition	40
5.4	Living Standards.....	44
VI.	WHY DO CHILDREN WORK: COMMUNITY ATTRIBUTES	51
6.1	Industry	56
6.2	Employers.....	60
6.3	Other Attributes	61
VII.	CHILD LABOUR AND GOVERNMENT POLICY	63
7.1	Command Measures	63
7.2	Incentive Measures.....	68
7.3	Other Factors	71
VIII.	CONCLUSION	73
	BIBLIOGRAPHY	76
	ANNEX A BACKGROUND ON NEPAL, PAKISTAN, AND VIETNAM.....	81
	ANNEX B HOUSEHOLD SURVEY DATA IN NEPAL, PAKISTAN, AND VIETNAM	83

TABLES AND CHARTS

Table 1.	Participation in market work and schooling in Nepal, Pakistan and Vietnam.....	13
Table 2.	Participation in market work in the last 7 days, in Nepal and Vietnam.....	13
Table 3.	Hours per week for children 10-15 employed in market work in Nepal, Pakistan and Vietnam.....	14
Table 4.	Participants in household activities in the last 7 days by gender, age, and location in Nepal, 1999	15
Table 5.	Participation in market work, household work, and schooling by gender in Nepal and Vietnam	16
Table 6.	Hours per week in market and household work for working children 6-15 in Nepal and Vietnam	16
Table 7.	Estimates of the incidence of the worst forms of child labour in Nepal, 1996.....	19
Table 8.	Non-pecuniary reasons for employing child labour in Nepal, 1996.....	25
Table 9.	Percentage of variation in child labour explained by individual attributes in Nepal and Vietnam	26
Table 10.	Total hours worked in the last week and birth order in Nepal and Vietnam	31
Table 11.	Between versus within households variation in child labour in Nepal and Vietnam.....	32
Table 12.	Sibling correlations in participation in child labour in Nepal and Vietnam	33
Table 13.	Inter-temporal relationships in participation in child labour in Vietnam, 1998.....	35
Table 14.	Distribution of working children 5-14 years old by parents'/ guardian's main reason for letting children work in Pakistan, 1996.....	37
Table 15.	Employers of children in market work in Nepal, Pakistan and Vietnam.....	38
Table 16.	Child labour and household enterprise status in Nepal and Vietnam	39
Table 17.	Enterprise ownership and child labour in rural households in Vietnam, 1998	39
Table 18.	Hours in child labour and sibling gender composition in Nepal and Vietnam	42
Table 19.	Adult migration history and child labour (during the last 7 days) in Vietnam, 1998	43
Table 20.	Participation rates of children 10-14 in rural agricultural households by quartiles of consumption expenditure in Pakistan, 1991	46
Table 21.	Percentage of observed decline in child labour that can be explained by living standards improvements, by population subgroups and types of work in Vietnam, 1998.....	49
Table 22.	Starting age of work by occupations and children's age (Ho Chi Minh City, Vietnam).....	52
Table 23.	Starting age of work by occupations and children's age (Rural North Central Region, Vietnam).....	53
Table 24.	Between versus Within community variation in child labour in Nepal and Vietnam.....	54
Table 25.	Community participation rates and child labour in Nepal and Vietnam.....	55
Table 26.	Employment by industry for currently employed children 5-14, by gender and schooling status in Nepal, 1999	56
Table 27.	Child labour by industry in Vietnam, 1998	57
Table 28.	Distribution of wage working children 5-14 years old by major industry division and gender, Pakistan 1996	58
Table 29.	Industry prevalence and child labour in Vietnam	59
Table 30.	Factory presence, ownership, and child labour in Vietnam, 1998.....	61
Table 31.	Infrastructure, accessibility, and child labour in Vietnam, 1992-1998	62
Table A1.	Economic Characteristics of Nepal, Pakistan, and Vietnam, 1998.....	81
Table A2.	Demographic Characteristics of Nepal, Pakistan, and Vietnam, 1998	82

Chart 1.	Joint distribution of hours worked during the last week in market and household work in Vietnam, 1998	17
Chart 2.	Participation in market work by age in Nepal (1999), Pakistan (1996), Vietnam (1998)	27
Chart 3.	Participation in child labour by age in Nepal (1999) and Vietnam (1998).....	28
Chart 4.	Gender differences in child labour participation rates in Vietnam, 1998	29
Chart 5.	Gender differences in child labour participation rates in Nepal, 1999	29
Chart 6.	Female-Male Differences in Market Work Participation Rates – Nepal 1999, Pakistan 1996, Vietnam 1998	30
Chart 7.	Joint density of hours worked during the last seven days in Vietnam (1993 and 1998).....	36
Chart 8.	Participation in child labour and household size in Nepal and Vietnam	40
Chart 9.	Female – Male differences in participation in child labour and household size in Nepal and Vietnam	41
Chart 10.	Percentage of children working full-time against income, in Pakistan, 1991.....	45
Chart 11.	School enrolment by per capita expenditure in Pakistan, 1991-1999	46
Chart 12.	Living standards and the decline in market work in Vietnam, 1998	48
Chart 13.	Living standards and the increase in school attendance in Vietnam, 1998.....	50

I. INTRODUCTION

13. Few issues in the lives of the world's poor receive more attention from rich country observers than child labour. Child labour is often perceived as a form of child abuse, and popular opinion in high-income countries seems to believe that child labour stems from opportunistic businessmen seeking cheap labour and callous parents happy to live off the earnings of their children. Thus, economic growth and the economic gains from global integration either will not affect child labour or may increase it by expanding the earnings opportunities open to children. Consequently, lowering the demand for child labour in poor countries is a main focus of anti-child labour policies. Moreover, governments in both the U.S. and Europe have committed to employing punitive, income-reducing measures such as trade sanctions to punish countries with high levels of child labour. This labour demand focused policy has been developed in an environment where surprisingly little is known about the determinants of child labour. The aim of this study is to better understand the determinants of child labour through a careful, empirical analysis of household survey data on child labour from three Asian economies: Nepal, Pakistan, and Vietnam.³

14. There is no consensus in the academic or public policy literature on what child labour is. As such, this study considers an array of activities for children. In general, child labour is grouped into two types of categories. Market work includes work for wages as well as work in a household farm or enterprise. Household work includes work in the production of goods and services that are generally not traded outside of the household. This includes caretaking, food production, and other household chores. In general, most studies of child labour supply ignore household work, but this omission can lead to very misleading conclusions.

15. This study analyzes why and how children work by exploring data on child labour supply from nationally representative household surveys. As such, the focus is on understanding aspects of child labour supply that are important in the general population, and in depth explorations of the relatively rare, most hazardous forms of child labour are beyond the scope of this study.

16. Four surveys form the basis for much of the discussion in this paper. The Nepali data are from the Nepal Labour Force Survey (NLFS, Central Bureau of Statistics, 1999). Detailed data on a wide range of household activities was collected in interviews with over 14 000 households conducted in 1998 and 1999. The Pakistani data are from two sources. Some information on children 10 and older is from the 1991 Pakistani Integrated Household Survey (PIHS). The PIHS was conducted with assistance from the World Bank. 4 800 households from 300 communities were interviewed with a detailed, living standards measurement questionnaire. The second source of Pakistani data is a specialized child labour survey conducted in 1996 with the help of the ILO (PCLS). Over 10 000 households with economically active children were interviewed about the activities of children. The Vietnam data are from the Vietnam Living Standards Survey (VNLSS, General Statistical Office, 1999). Like the PIHS, the VNLSS is a multi-purpose household survey. Approximately 4 800 households were interviewed in the first VNLSS, VNLSS93, and 6000 households were interviewed in the second VNLSS, VNLSS98. Most of the

3. Annex A provides background on the economic environment of Nepal, Pakistan and Vietnam.

descriptive work in this study is based on the VNLSS98, but at times, this study focuses on the 4 300 panel households that are interviewed in both 1993 and 1998.⁴

17. The structure of the report is as follows: Section II considers how child labour is defined. Several issues are considered including how the activities of children vary across types of work and countries. Some discussion considers the incidence of the most hazardous forms of child labour that are missed by the household surveys used in this paper. Section III outlines a theoretical model of how households decide to allocate child time between types of work and schooling. Its main purpose is to provide a theoretical motivation for the empirical work that follows. Section IV examines the available data to consider how child labour supply varies with child attributes. Differences across countries in how child labour supply varies with age, gender, and birth order are considered. Section V explores how child labour varies across households documenting substantial correlations between siblings in participation in both market and household work. It considers a number of factors that might explain differences between households in child labour supply including parental attitudes, enterprise ownership, household composition, and living standards. Section VI considers variation in child labour supply between communities. Public policy tends to presume that the types of employment opportunities open to children determine whether children work, and that is why Section VI considers how child labour varies across industry, employer types, and infrastructure. Section VII discusses existing child labour policy in the three countries in the context of the empirical results of Sections IV to VI as well as the theoretical model of Section III. Section VIII concludes with a discussion of the types of policies that might be recommended by the empirical results of this paper.

18. An important caveat to the discussion on the policy implications of this study is that its analysis is entirely within a partial equilibrium framework, and the general equilibrium results of policy changes may differ from the partial equilibrium responses considered here. For example, Basu and Van (1998) outline a general equilibrium model of child labour supply and argue that prohibitions on child labour may force employers to pay adults more, thereby eliminating the household's desire to send children to work. There is no evidence in this study on whether this general equilibrium effect of a prohibition on child labour could occur. However, all three countries in this study have prohibitions on some forms of child labour in place. The continued persistence of child labour despite these bans might suggest exploring policy alternatives that more fully account for why children work.

4. Annex B describes the datasets used throughout the body of the paper in greater detail.

II. WHAT IS CHILD LABOUR?

19. In November 2000, ten children earning around USD 11 per month burned to death in a garment factory in Bangladesh (Bearak, 2001). The exits from the factory were chained shut. Images of children chained into factories, sold as slaves, or forced into prostitution stain the popular imagination about child labour. Fortunately, while many children work in the developing world, few experience such atrocities. This study's aim is to better understand why children work. Hence, whenever feasible, this study focuses on all forms of child economic activities.

20. Many writers on child labour as well as some politicians in developing countries like to define child labour as work that impairs the development and welfare of children. This subjective definition makes it hard to understand child labour, because the effect of any child activity on the child's development and welfare is always debatable. The present study follows the standard in most recent research within economics of viewing child labour as the economic activities in which children participate. This definition includes slavery and prostitution, but it extends to the types of activities that children regularly participate in throughout the developing world.

2.1 Market Work

21. Many countries (including Pakistan) focus their official estimates of child labour on child work for wages (cash or in-kind). This narrow focus generates misleading conclusions. In 1999 and 2000, UNICEF interviewed children across 30 developing countries and discovered that factory work is rare. Only 3% of children work outside of their household for pay. Unpaid domestic work is more common than is work for pay. UNICEF found that 2% of boys and 5% of girls perform unpaid domestic work for households other than their own. However, most working children are employed in their own household, helping with household duties or the family's farm and business.

22. The countries considered in the present study exhibit child labour patterns that conform to UNICEF's findings. Consider the typical 14-year-old girl living in rural Nepal. She works about 35 hours per week (author's calculations from the *Nepal Labour Force Survey, 1999*). She spends 19 hours of that time working in agriculture for her family, and 9 hours helping her family with household work. She does not work for pay, and she does not attend school. An array of activities occupies the rest of her time. Gathering firewood and collecting water are two of her more time consuming tasks.

23. A focus on wage work alone omits almost all of the activities performed by children. It may be the case that wage work is more often associated with worse employment environments for children, but a focus on wage work alone confounds questions of why children work and what types of jobs or working environments working children sort into. As a result, relatively few academic studies of child labour supply focus on wage work alone. Instead, economists tend to focus on what will be called "market work" throughout this study. Market work includes the types of activities for which a person in a high-income country would normally be paid. This includes wage work but also includes work without direct payment both inside and outside of the household. Thus, market work encompasses work on a neighbour or community's business or farm or work in one's own household business or farm.

Table 1. **Participation in market work and schooling in Nepal, Pakistan and Vietnam**

	Nepal, 1999	Pakistan, 1996	Vietnam, 1998
	Ages 6-15	Ages 5-14	Ages 6-15
Market work only	16.0	32.8	6.6
Study only	43.9	26.1	72.5
Market work and study	26.1	12.7	15.4
Other ^a	13.9	28.4	5.5
Total	100	100	100

a) Other refers to children that do not fit into one of the specified columns. Nepal and Vietnam columns are weighted to reflect sample design.

Sources: Nepal results are from the NLFS (Edmonds, 2002b) and Vietnam results are from the VNLSS98 (Edmonds, 2002a). The Pakistan column is from Rosati and Rossi (2001) who do not specify whether means are corrected for sample design.

24. Table 1 looks at the distribution of children across study and market work in Nepal, Pakistan, and Vietnam, and the three countries appear to contrast sharply in what their children do.⁵ In Vietnam, most children study and do not participate in market work. In fact, only 22% of children participate in market work nationally (42% and 46% in Nepal and Pakistan respectively).⁶ The estimates in Table 1 suggest that approximately 2 million children work in Nepal and 4 million in Vietnam.

25. The types of market work in which children participate vary across countries, but helping on the family farm appears to be perhaps the most common form of market work in most low-income countries. By way of example, Table 2 contains participation rates in market work for children in Nepal and Vietnam. It groups the components of market work into three categories: wage work, work on the family farm (“household agriculture”), and work in the family business (“household business”).

Table 2. **Participation in market work in the last 7 days, in Nepal and Vietnam^a**

	Nepal 1999				Vietnam 1998			
	Market work	Wage work	Household Agriculture	Household Business	Market work	Wage work	Household Agriculture	Household Business
Population	24.1	2.0	38.6	5.7	22.0	1.3	19.2	2.5
Location								
<i>Rural</i>	44.9	2.0	41.5	5.8	25.3	1.2	22.7	2.8
<i>Urban</i>	20.1	2.2	14.5	5.2	6.1	1.8	2.8	1.5
Gender								
<i>Male</i>	38.5	2.2	35.1	3.1	21.6	1.2	19.1	2.4
<i>Female</i>	46.0	1.8	42.3	8.5	22.4	1.4	19.4	2.7
Age								
<i>6-10</i>	26.9	0.4	25.8	1.6	6.6	0.0	6.3	0.4
<i>11-15</i>	59.9	3.8	53.5	10.5	35.6	2.5	30.7	4.5

a) Percentage of children (6-15 unless otherwise indicated) participating in indicated type of work. Children may participate in more than 1 category. Market work includes participation in the other three indicated categories of work. All means are weighted to reflect sample design.

Sources: Nepal results are from the NLFS (Edmonds, 2002b) and Vietnam results are from the VNLSS98 (Edmonds, 2002a).

5. All of the datasets used in this study are described in Annex B.

6. These estimates for Pakistan contrast sharply with official estimates based on the same data. Pakistan’s Federal Bureau of Statistics (2001) reports that 8.1% of children 5 to 14 or 3.3 million children work. However, this statistic refers to children that work for wages. Overall, almost 19 million children work in market work in Pakistan.

26. In both Vietnam and Nepal, most working children participated in household agricultural work. In fact, 92% of working children in Nepal and 87% in Vietnam work in household agriculture. In both rural and urban areas, most working children work for their own household in agriculture. Both girls and boys participate in own-farm work. Working children 10 and under are active almost entirely in agriculture in both countries. Overall, wage work is rare. The estimates in Table 2 suggest that approximately 100 000 children work for wages in Nepal and about 250 000 children work for wages in Vietnam.

27. The pervasiveness of agriculture in the developing world accounts for higher participation rates in agriculture. However, higher within household participation rates than outside of the child's household requires some additional explanation. Perhaps parents prefer their children to work within their household so that parents can better monitor the child's working conditions and treatment. Alternatively, children may be more productive within their own household, because parents are better at affecting child behaviour than are other adults. A third possibility is that employment within the household is more flexible than outside of the household. Thus, children can work fewer hours within the household, and their schedule is more easily adjusted to be compatible with other needs of the child.

28. The data on hours worked is consistent with this latter explanation. Table 3 examines the mean hours worked per week by employer and type of work for working children in Nepal, Pakistan, and Vietnam. Employers are grouped in two categories: the household and outside of the household and the types of market work are categorised into agriculture and non-agricultural activities.

Table 3. Hours per week for children 10-15 employed in market work in Nepal, Pakistan and Vietnam^a

	Nepal 1999				Pakistan 1991				Vietnam 1998			
	Household		Outside		Household		Outside		Household		Outside	
	Agric.	Non	Agric.	Non	Agric.	Non	Agric.	Non	Agric.	Non	Agric.	Non
Boys	23.1	16.6	39.7	51.5	16.5	34.2	20.0	40.4	38.4	47.7	51.2	48.8
<i>Urban</i>	19.6	22.2	18.9	53.9	8.8	35.2	17.3	46.0	50.2	51.0	36.0	48.6
<i>Rural</i>	23.3	15.6	39.3	50.9	16.7	33.8	20.2	36.0	36.9	45.2	51.4	49.0
Girls	25.5	9.9	33.3	44.0	8.5	11.1	18.2	21.9	29.0	47.5	48.7	47.7
<i>Urban</i>	22.7	15.7	34.9	50.9	5.4	15.9	33.0	16.0	36.0	50.4	32.0	47.9
<i>Rural</i>	25.7	9.4	33.2	40.0	8.9	7.6	12.6	37.0	28.5	44.6	48.9	47.5

a) Samples are restricted to children aged 10-15 because is the range available for Pakistan. Hours per week are mean hours worked in the last 7 days. "Agric" refers to agricultural work and "Non" refers to non-agricultural work. "Outside" is outside the child's household, and "household" is inside the child's household.

Sources: Nepal results are from the NLFS (Edmonds, 2002b) and Vietnam results are from the VNLSS98 (Edmonds, 2002a). Nepal and Vietnam means are weighted to reflect sample design. Pakistan is from Jensen (2000) using the PIHS.

29. In general, work outside of the household is associated with more hours per week than is work inside the household. This is true for boys and girls in urban and rural areas in all three countries. The only two exceptions to this generalization are in urban Vietnam where work inside and outside the household is associated with similar hours. However, child labour in urban Vietnam is rare. Hence, these hours worked averages are imprecisely estimated. Thus, the market work activities in which most children participate appear to be more flexible and less intensive than the relatively rare work outside of the household for wages.

2.2 Household Production

30. Studying child labour supply in market work alone has the potential to be as misleading as a focus on wage work alone. Ignoring time spent in household production activities may substantially alter the conclusions of any study on child labour supply. For example, if a parent leaves the household to work for a local employer, a child may take over many of the parent's household roles. Ignoring time spent by

children collecting wood and water, tending to animals, preparing foods and meals, or caring for family members would imply that a child spending two hours a day in agriculture works more than the child labouring twelve hours a day filling in for an absent parent.

31. As shown in Table 4, 69% of Nepalese children aged 5-14 participate in some household production activities. Participation rates are higher for both boys and girls in rural areas. Within each stratum, girls participate substantially more in household production. Participation rates are highest in cleaning, cooking, and child minding in both urban and rural areas. Collecting firewood and water appear to be an important household production activity for rural girls. Interestingly, girls have higher participation rates in almost every category except shopping. Older boys are more apt to be engaged in shopping in both urban and rural areas. This is consistent with older boys being more likely to be involved in wage work. In Nepal, girls appear to stay closer to their household and interact with outside markets less than boys.

Table 4. **Participants in household activities in the last 7 days by gender, age, and location in Nepal, 1999**

In thousands

	Cooking	Cleaning	Minor repairs	Shopping	Care-taking	Fetching water	Collecting firewood	Child minding
Urban Total								
5-9	5	14	2	3	..	3	1	15
10-14	55	81	10	16	2	12	8	20
Urban male								
5-9	1	2	0	2	..	1	0	4
10-14	8	16	1	9	1	4	2	5
Urban female								
5-9	4	12	2	1	..	2	1	10
10-14	47	65	8	7	1	8	6	15
Rural Total								
5-9	61	200	33	6	1	86	44	..
10-14	492	727	92	43	14	258	196	..
Rural male								
5-9	7	30	2	2	..	33	14	..
10-14	68	121	12	25	4	84	56	..
Rural female								
5-9	54	170	32	4	1	53	31	..
10-14	424	606	81	18	10	174	140	..

Source: Central Bureau of Statistics (1999) using the NLFS.

Table 5. **Participation in market work, household work, and schooling by gender in Nepal and Vietnam**

	Nepal 1999			Vietnam 1998		
	Total	Male	Female	Total	Male	Female
Household work only	3.1	0.8	5.6	2.2	1.4	3
Market work only	7.6	8.2	7	1.5	2.1	0.9
Household and market work only	8.4	1.8	15.5	5	3.2	6.9
Household and school only	8.5	4.4	13	32.6	29.6	35.8
Market and school only	13.6	20.4	6.4	2.6	4	1.2
Household, market and school	12.5	8.2	17.2	12.8	12.2	13.4
School only	35.4	45.3	25	40	44.3	35.4
Other ^a	10.8	11	10.6	3.4	3.3	3.4
Total	100	100	100	100	100	100

a) Other refers to children who are not in school and do not report participation in either market or household work. Data refer to children 6-15.

Sources: Nepal results are from the NLFS (Edmonds, 2002b) and Vietnam results are from the VNLSS98 (Edmonds, 2002a). Nepal and Vietnam means are weighted to reflect sample design.

32. In both Nepal and Vietnam, more children spend their time studying than working and not studying (see Table 5). In Vietnam, a sizeable fraction of children participate in some household production in addition to going to school. Another large subgroup in Vietnam participates in market work, household work, and school. In contrast, most children in Nepal complement schooling with time in market work or market and household work. That is, participation in just school and household production is more common in Vietnam than Nepal. This may, in part reflect the greater incidence of schooling in Vietnam if household work is more compatible with schooling than is market work.

33. Table 6 reports mean hours worked in the last week in market, household, and total work for children that report work in the indicated activity. In both Nepal and Vietnam, children tend to spend substantially fewer hours in household production when they work. Thus, the higher incidence of household production coupled with schooling observed in Vietnam in Table 5 may reflect higher schooling enrolment in Vietnam. With the time commitment of school, household production time is easy to adapt to the schooling schedule. Thus, children can participate in both. When children are not in school (as is more common in Nepal), children may be less likely to engage in household production if the time demands for market work are greater than school.

Table 6. **Hours per week in market and household work for working children 6-15 in Nepal and Vietnam^a**

	Nepal 1999			Vietnam 1998		
	Total	Market	House	Total	Market	House
Boys	25.9	25.4	8.0	14.1	15.9	7.6
Urban	21.2	25.6	7.3	10.0	16.1	7.6
Rural	26.3	25.4	8.1	14.5	15.9	7.6
Girls	32.2	27.0	14.0	15.7	17.7	9.0
Urban	23.5	26.5	12.4	11.2	13.7	9.4
Rural	33.0	27.1	14.2	16.5	17.9	8.9

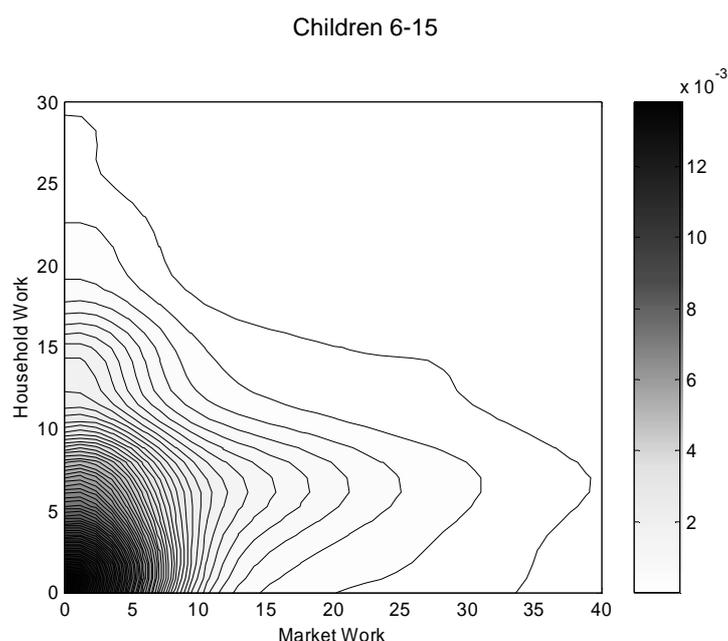
a) Mean hours worked in the last 7 days for children that work in the indicated work category. Total is the sum of hours in market work and household work.

Sources: Nepal results are from the NLFS (Edmonds, 2002b) and Vietnam results are from the VNLSS98 (Edmonds, 2002a). Means are weighted to reflect sample design.

34. Two other interesting facts appear in Table 6. First, in both Vietnam and Nepal, girls work more hours overall, especially in household work, than do boys. The gender difference is smaller in Vietnam where women are more integrated into the adult labour market. Second, outside of household work for urban males, children work more hours per week in Nepal than in Vietnam. The differences in time-spent working are large. Boys work 46% more hours per week and girls work 51% more hours. Of course, one cannot decipher from Table 6 whether these differences in hours worked reflect differences in school enrolment between the two countries or result from differences in the local labour market.

35. While hours worked are typically greater for participants in market work than they are for participants in household work, household work is much more common. When one considers all children rather than just participants, the data reveal two interesting facts about the relationship between household production time and market work time. First, there is some evidence of substitution between time in household production and time in market work. Chart 1 pictures the joint density of time in household work and time in market work for children 6-15 in Vietnam in 1998. Chart 1 is a contour map, so each ring of the contour has the same density. For example, the probability of observing a child work 20 hours a week in household production and 0 hours in market work is approximately the same as observing a child work 15 hours a week in market work and 0 hours in household production.

Chart 1. **Joint distribution of hours worked during the last week in market and household work in Vietnam, 1998**



Source: Edmonds (2002a) using the 1998 VNLS.

36. The substitution between household and market work is evident in that the slope of the contours become steeper as hours in household work increase. This may reflect time constraints or some aspect of the comparative advantage of children that spend large amounts of time in household work. In fact, evidence against the time constraint explanation is also evident in Chart 1. Children who work large amounts of time in market work are more likely to also spend significant time in household production as well.

37. This is the second interesting aspect of the relationship between time in household production and market work – in general, they are positively correlated. The correlation coefficient between household work and market work time is 0.2 in both the Vietnam and the Nepali data. Thus while substitution of time between household and market work might be important for some children, in general, ignoring household work understates the time spent working by children in market work. In fact, Chart 1 suggests that the degree of understatement in hours worked associated with focusing on market work alone is increasing in market work. This is reflected in the hump shape of the joint distribution. A child is equally likely to work 20 hours in market work and 0 hours in household work as it is 32 hours in market work and 8 in household work. The child is substantially more likely to work 20 hours a week in market work and 7 in household work. However, a child is only slightly more likely to work 10 hours a week in market work and 7 hours in household work than 10 hours a week in market work and 0 in household.

38. Thus, when possible, this study considers these household production activities in addition to market work. In general, child labour supply to household production and market work are examined separately. This is necessary, because relatively few studies and surveys consider household production when examining child labour. Thus, comparability requires a separation of household and market work. However, at times, it will be necessary to examine overall child labour supply. This total labour supply is the sum of time in household and market production.

39. Many who are concerned about child labour are concerned about it because of its impact on schooling or on child health. This study's focus is on child labour and not schooling or health, and the reader should bear in mind that there is little direct evidence in this study that the labour supply studied in this paper is in anyway deleterious to the well-being of children.

2.3 Special Cases

40. While the aim of this study is to understand why children work, within each country, there are groups of children that need special attention. This is because there are certain activities in which children may be particularly vulnerable. Fortunately, the number of children participating in these “worst forms of child labour” is relatively small. To say that participation in dangerous or damaging forms of work is rare is not to say that children in the worst forms of child labour do not deserve special attention. However, because of its rarity, it is impossible to understand the determinants of participation worst forms of child labour in the types of household surveys used in this study. A specialized survey in Nepal however sheds some light on the extent of these worst forms of child labour.

41. There are approximately 8 million children below the age of 16 in Nepal, and the ILO (2001) estimates that approximately 1.5% of these children work in these worst forms of child labour (Table 7).

Table 7. Estimates of the incidence of the worst forms of child labour in Nepal, 1996

	Number	Percentage
Children in bonded labour	17,152	13.5
Child ragpickers	3,965	3.1
Child porters	46,029	36.2
Child domestic workers ^a	55,655	43.8
Children in mines	115	0.1
Children in carpet sector	4,227	3.3
Child trafficking ^b	12,000	..
Total	139,143	100

a) For urban areas only.

b) The ILO (2001) estimates that 12 000 girl children are trafficked each year for commercial sexual exploitation.

Source: ILO (2001) using the MES.

42. Child porters and domestic workers are the two most common types of “worst forms” of child labour. Among child porters, there are two main types: short distance porters that work in urban markets and bus parks and long distance that work in the countryside. The ILO estimates that typically long distance porters stay and work with their families while short distance porters have often migrated to find work. Estimates are that there are about 42 204 long distance porters and 3 825 short distance porters, 88% of which are boys.

43. Domestic workers are endemic in high caste, urban households. The ILO estimates that 43% of employers of child domestics are government or non-government service holders. In Kathmandu, 1 out of 5 households employ children. Domestics are believed to be evenly split between paid (to parents) and unpaid (more correctly, paid in a lump sum) workers. Most domestics are thought to be from rural upper and middle castes. Some domestics (15%) attend school.

44. Three of the most vulnerable forms of child labour in Nepal are Ragpickers, bonded labourers, and trafficked children. Ragpickers (khate) pick rags and other rubbish out of garbage dumps for resale. One in four ragpickers in Nepal are in Kathmandu. They are mostly boys and often street children. Over 50% of ragpickers live away from their homes. Most bonded labours in Nepal are embedded in the Kamaiya system of bonded labour. Sharm *et al.* (2001) estimate that about 33 000 children working in the Kamaiya system in western and far-western Nepal (almost double the ILO’s estimates). These children are typically bonded to pay off household debts after being used as collateral on loans. However, most labourers interviewed in Sharma’s project responded that they worked because of inadequate food in their home rather than because of indebtedness. Child trafficking is particularly hard to measure and evaluate. According to the ILO (2001), 12 000 girls are trafficked into the commercial sex industry each year in Nepal. By and large, these girls work in brothels in India.

45. These worst forms of child labour are not only prevalent in Nepal. Children in both Pakistan and Vietnam may be vulnerable in similar ways. For example, like Nepal’s Kamaiya system of bonded labour, Pakistan’s Peshgi system of bonded labour appears to be prevalent. Under the Peshgi system, an employer takes a child from its parent in exchange for a payment that is spread out over the period of child servitude. Silvers (1996) documents the story of a 7-year-old from Punjab, purchased by a carpet weaver for five years at price of 5 000 rupees (about two month’s earnings for an adult weaver). Payment is spread out through time in order to enforce the bonded labour contract. Silvers claims that it is not unusual for employers to fail to pay even a third of the peshgi. Yet, this system persists because of the desperate need of households forced to send their children to work.

46. Bonded labour is believed to be acute in certain industries. The Bonded Labour Liberation Front works to end bonded labour in Pakistan. They highlight brick kilns, carpet industries, agriculture, fisheries, stone/brick crushing, shoe-making, power looms, and refuse sorting as industries where bonded labour is pervasive. They estimate that a half million children are allegedly bonded in the carpet industry alone. It is impossible to identify in the existing data how many of the 8.3 million children working for wages outside of their household in Pakistan are bonded. The Bonded Labour Liberation Front estimates that eight million children are bonded in Pakistan.

47. While bonded labourers are often difficult to identify, locating trafficked children and child sex-workers is even more difficult. UNICEF (2001) estimates that 30% of all sex-workers in the Mekong sub-region (including Vietnam, Thailand, Cambodia, and Laos) are children. Estimates of the extent of the problem in Vietnam are hard to find. Bond and Hayter (1998) report that outside of 253 prosecuted cases of child trafficking between 1991 and 1999, there is no evidence of child trafficking in Vietnam. Nevertheless, because identification of trafficked children is so difficult, it is impossible to identify the true scale of the problem in Vietnam, but it may easily be on the scale observed in Nepal.

48. While the children that encounter these worst forms of child labour may suffer immeasurably, they are, unfortunately, largely beyond the scope of this study. Recent advances in rapid assessment and targeted surveys may hold promise for, in the future, building understanding of these worst forms of child labour. In the present case, these worst forms of child labour are simply too rare for a separate analysis within the household survey data used in this study. Nevertheless, there is not any clear reason to believe that these worst forms of child labour are not simply extreme forms of the types of work considered in this study. In that case, the determinants of child labour supply examined in this study may be as applicable to the worst forms of child labour as they are for the more pervasive forms of child labour considered in this paper.

III. WHY DO CHILDREN WORK: THEORY

49. This section outlines a simple model of the allocation of child time. This model frames the discussion of the empirical evidence on child labour explored in the remainder of this paper. Hence, the model is not intended to fully capture all of the nuances of the determinants of child labour. In fact, much of the discussion below considers extension and modifications of this basic model.

50. For simplicity, consider a household with one child and one parent. The parent makes all household decisions. A child divides its time between market work (M), work in household production (H), and education (E). Thus, $M+H+E=1$. Throughout the theoretical discussion of this paper, child time in education is understood to include classroom time and time spent studying as well as time in leisure and play. The child's well-being (V_k) depends on the time it spends in education according to the twice-differentiable function $R(E)$. Assume that child well-being is increasing in its education but at a diminishing rate. Each fraction of child time in market work brings a constant, exogenous return of w to the household. The return to child time in household production depends on household attributes A and the fraction of child time spent in household production. $F(H;A)$ is the extra household consumption that stems from a child spending a fraction H of its time in household production. $F(-)$ is twice-differentiable with positive, diminishing marginal product in H . Thus, total household consumption depends on the non-child labour earnings Y , child earnings in market work wM , and child earnings in household production $F(H;A)$: $c=Y+wM+F(H;A)$.⁷

51. A parent with preferences over household consumption (c) and child well-being decides how to allocate child time. Let the parent's preferences be represented by the twice-differentiable utility function $u(c, V_k)$. $u(-)$ is positive and diminishing in both of its arguments. For simplicity, assume that the cross-partial derivatives are zero. In this set-up, the parent's problem reduces to one of choosing the fraction of child time spent in education, household production, and market work subject to the adding-up constraint on child time:

$$(1) \quad \max_{E, H, M} u(Y + F(H; A) + wM, R(E)_k) \text{ subject to } E + H + M = 1.$$

52. This solution to this problem is a child labour supply function. This study groups the determinants of child labour supply into three categories: child attributes, household attributes, and community attributes. The remainder of this subsection outlines how these three characteristics of the child and its environment affect child labour supply.

53. The model above can be viewed as a model where parents choose how much time the child should spend in work versus schooling and then allocates child time between types of work. In deciding between working in household production or in market work, the child participates in the activity with the highest return provided there are no binding constraints on child employment in either sector (this study returns to the question of binding constraints on employment later in the paper). For example, if a child

7. In this framework, goods produced by household production are substitutes for goods purchased with market work. Thus, this setup deviates from Becker's household production model.

only participates in market work and not household production, this implies that the wage in market work is greater than the return to child time in household production ($w > \partial F / \partial H$). Likewise, a child that only works in household production has a return to household production that exceeds her market wage. If a child works in both household production and market work, she devotes time to household production until the value of her marginal product in household production equals the market wage ($w = \partial F / \partial H$). This implies that if a child works in both market and household work and attends school, the marginal return to the household for education equals the marginal return to additional work:

$$(2) \quad \frac{\partial u}{\partial V_k} \frac{\partial R}{\partial E} = \frac{\partial u}{\partial c} \frac{\partial F}{\partial H} = \frac{\partial u}{\partial c} w.$$

54. The household's value of a small change in the return to education is $\partial u / \partial V_k$, and the household's value of a small change in consumption today is $\partial u / \partial c$. Thus for a given set of marginal utilities, higher returns to education force the household to allocate time away from work and to education in order to maintain equilibrium. Moreover, a child will attend school and not work at all when the marginal utility from schooling exceeds the marginal utility from working in either category of work:

$$\frac{\partial u}{\partial V_k} \frac{\partial R}{\partial E} > \frac{\partial u}{\partial c} \frac{\partial F}{\partial H} \text{ and } \frac{\partial u}{\partial V_k} \frac{\partial R}{\partial E} > \frac{\partial u}{\partial c} w.$$

3.1 Child Attributes

55. Child attributes can affect the allocation of child time in three general ways. First, the value of child time may depend on the child's age. Older children may be able to earn greater market wages and may be more productive in household work. Thus, for young children, the return to education may be sufficiently high that they spend all or most of their time in school, but the share of time in education may decline as the earnings opportunities gradually increase to older children.

56. Second, gender may play a role in whether the child works. The sex typing of different tasks and jobs may lead to gender differences in the returns to education or to gender differences in the return to employment outside of school. There is suggestive evidence of gender differences in the return to child labour in both Nepal and Pakistan. In both countries, girls are more likely to work in both market work and household work. However, participation in wage work is rare for girls. This suggests that the return to working in household work relative to market work must be greater for girls than for boys. Moreover, gender may also influence the marginal utility from improving the child's well-being ($\partial u / \partial V_k$ may be sex-specific).

57. Third, birth order may contribute to differences in child labour. Edmonds (2002c) adds multiple siblings to the model above and shows that the return to child time in household production or market work *relative* to other siblings within the household affects child labour in the presence of credit constraints. For example, older siblings may be better at market work than younger siblings. As a consequence, the household may choose to send the older child to work while keeping the younger child in school. Similarly, older girls may be better at household work than younger girls or boys. Thus, older girls work more than younger siblings. However, Behrman and Taubman (1986) outline several other reasons for why birth order can affect investments in children. Important factors include differences in total household resources that are correlated with birth order and differences in the technology through which children are raised. Overall, they conclude that there is no clear prediction about the link between birth order and child labour supply.

3.2 Household Attributes

58. Household attributes can affect child labour supply within this framework. Most obviously, parental preferences play a role. Parental preferences influence how the household values the return to education ($\partial u/\partial V_k$) and how the household values consumption today ($\partial u/\partial c$). There is considerable debate about whether parents incorporate child well-being into their decisions (e.g. $\partial u/\partial V_k = 0$). In that case, all child time is spent working, and the division of work between market and household work depends on the child's productivity in each. This parental callousness model appears to pervade the public policy debate about child labour. Parsons and Goldin (1989) provide empirical support for this parental callousness model by examining the child labour supply decisions in nineteenth century America, and Burra (1995) provides empirical support for this parental callousness model in contemporary India.

59. Parental preferences are also emphasized as a key determinant of child labour supply in the literature on social norms. Certain levels of child labour may be considered best for the child's development in many cultures. In that instance, some child labour is predetermined and independent of the household's decision-making process specified in equation (1). Rogers and Standings (1981) contains several studies that discuss how social norms affect child labour supply. Moreover, abundant evidence surveyed in Strauss and Thomas (1995) suggests that parental education affects the schooling of children beyond the impact of education on household resources. This evidence is often cited as support for the idea that the allocation of child time is in part driven by cultural attitudes and norms that are altered by parental education.

60. In equation (2), the value of child time in schooling and household production is as an important determinant of child labour as are parental attitudes. While the local labour market may determine the return to schooling and the market wage for market work, the return to time spent in household production may depend on household attributes. For example, household's that operate a home enterprise may have more uses for child time and thereby value the child's marginal product higher than households without enterprises. Likewise, labour market imperfections such as constraints on the household's ability to hire labour outside of the household or asymmetric information problems that make labour outside of the household more expensive to hire may raise the value of child production within the household. Thus, the employment opportunities open to the child within the household should affect child labour supply.

61. Similarly household composition should influence child labour supply. For many reasons, it is difficult in many cultures to hire in labour to perform basic household duties. Thus, the value of child time within the household may depend on the household's own labour demand. Larger households may have greater demand for these goods or services that cannot be supplied by the market. Thus, the value of child time in household production may be greater in larger households. Alternatively, there may be economies of scale in household production such that the value of a change in child time varies with household size. In addition, larger households may tend to be poorer. In that case, the marginal utility of consumption will be higher (everything else equal) in larger households. This may shift children out of school and into working. Hence, household size may affect child labour supply although there is no clear theoretical prediction of how.

62. Similarly, sibling sex composition may affect child labour supply. This may come through the labour demand inside the household as with household size. Boys may require greater care (or yield a greater return to time spent rearing) than girls. Alternatively, boys and girls may compete for scarce household resources. In the model of Garg and Morduch (1998), households face liquidity constraints. Thus, children compete for resources within the household. If households capture larger returns to investing in boys, then having more boy siblings implies that the household needs to devote more resources to their education. This makes all existing siblings worse off, because resources become scarcer.

63. Parental residency may also affect child labour supply. In the framework of Foster (1998), co-residency differentially affects investment decisions because of the household's decision-making process. In the present case, having a parent present may influence how the household values investments in the child. Alternatively, there may be a relationship between the presence of the parent and the types of duties expected of a child. For example, a girl may need to take over her mother's household duties if the mother departs for work elsewhere or dies.

64. Finally, household living standards may be a key attribute in determining how much a child works. Poor households likely have higher marginal utilities of consumption. Thus, the value of an additional unit of child time in work is higher in a poor than a rich household. Even if poor households value their child's well-being the same as in a rich household and even if poor children receive the same market opportunities and returns to education, child labour will be higher in a poor household. Moreover, any factor that influences household income absent child labour (Y) can affect child labour supply. High non-child labour income lowers the marginal utility of consumption. Equilibrium in equation (2) implies a shift away from work towards education and moves out of household production and potentially market work altogether. Alternatively, improvements in living standards may affect the technology the household uses for household production or there may be complementarities between purchased inputs and child labour in household production. With diminishing returns to schooling, this increase in productivity in household production may reduce schooling. Thus, there is scope for living standards improvements to lower child labour, but it does not necessarily lower child labour even when parents perceive disutility from having the child work.

3.3 Community Attributes

65. Community attributes may affect child labour supply decisions through the returns to schooling or through the wage available to children in market work. A number of factors influence the returns to education. Access to schooling and the quality of educational institutions are obviously very important. In the framework above, poor quality schools lead to a lower return on a given education investment. More remote schools imply that the total child time necessary to affect a given return must be greater. The return to education also depends on the opportunities open to educated labour. In a subsistence economy, there may be little reward to education. However, improvements in market opportunities may generate increases in the return to education either directly through higher wages for the more educated or if education facilitates technology adoption or innovation.

66. A great deal of attention in public policy has been directed on the employment opportunities available to children. The "nimble fingers" theory of child labour argues that there are certain jobs in which children are particularly suited. Table 8 lists several reasons employers might prefer to higher children instead of adults.

Table 8. **Non-pecuniary reasons for employing child labour in Nepal, 1996**

Awareness and innocence	Traditions	Physical characteristics
More docile and less troublesome. Greater willingness to do repetitive, monotonous work. More trustworthy and innocent, so less likely to steal. Less absenteeism (none if bonded). Do not form trade unions. Can be exploited for increased profit.	Tradition of hiring child labour. Traditional occupations have children working alongside parent(s). Traditional role of employer is to provide jobs to entire families in the communities.	Better health (as young, health is not yet spoiled by hazardous work). Children are seen to have irreplaceable skills (virginity in the case of sexual exploitation). Labour intensive production processes that require abundant pools of unskilled labour.

Source: ILO (2001).

67. These reasons for hiring child labour suggest that children should be employed more in areas where the economic activities to which children are most suited are most prevalent. The carpet weaving industry in Pakistan has drawn a great deal of public attention as an example of this nimble fingers model in practice. A 1992 UNICEF report found that 90% of the one million workers in carpet weaving in Punjab Province were children. Within the framework of this section, wages for children would be higher in areas with concentrations of industries where nimble fingers are a comparative advantage. Because of higher wages, children work more.

68. This idea of community specific employment opportunities affecting child labour supply suggests that any factor associated with increased wages to children should increase child labour supply. Beyond the type of local industry, integration into markets, access to technology, or the quality and types of community infrastructure may influence the prevalence of child labour by raising the wage open to children.

69. The next three sections consider empirical evidence on the relationship between child labour supply, and child, household, and community attributes. The available empirical evidence from Nepal, Pakistan, and Vietnam suggest that household attributes are the primary determinants of why children work. There is nothing in the data to support either “nimble fingers” or “parental callousness” theories of child labour. Norms and preferences (or parents or markets) appear to play an important role in the allocation of child time across different types of activities, because the data reveal differences across countries in how child and sibling attributes affect child labour supply. Similarly, poverty and poor living standards also seem to be a key reason for why children work.

IV. WHY DO CHILDREN WORK: CHILD ATTRIBUTES

70. This section examines how child labour varies with age, gender, and birth order. Age and gender explain a large fraction of the variation in participation in child labour observed in the data. Table 9 presents the variation in participation rates in household and market work that can be explained by age, gender, and their interactions. Because of the limited availability of micro-data in Pakistan, this analysis of variance can only be conducted in Nepal and Vietnam.

Table 9. **Percentage of variation in child labour explained by individual attributes in Nepal and Vietnam^a**

	Nepal 1999		Vietnam 1998	
	House work	Market work	House work	Market work
Age	9	12	21	14
Gender	11	0	2	0
Age and Gender	22	12	23	14
Birth Order	4	1	6	2
Age, Gender and Birth Order	25	13	26	15

a) Each table element is the fraction of variation in participation in the indicated type of work (column) that can be explained by the indicated variable (row).

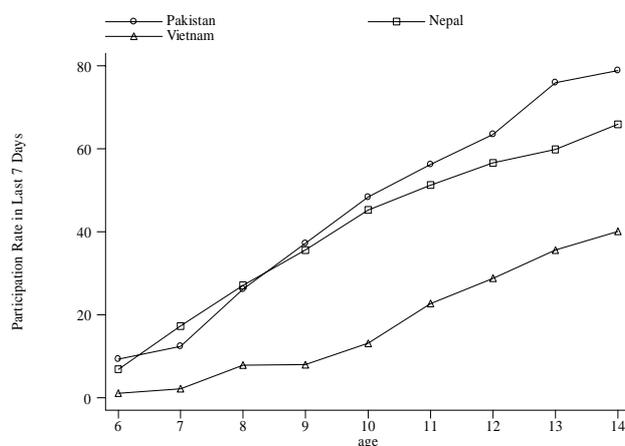
Sources: Nepal results are from the NLFS (Edmonds, 2002b) and Vietnam results are from the VNLSS98 (Edmonds, 2002a).

71. The similarities between the two countries are striking. Together, age and gender explain 22% of the variation in household work participation in Nepal and 23% in Vietnam. Age and gender explain 12% of the variation in market work participation in Nepal and 14% in Vietnam. The importance of birth order also is similar across the two countries. Birth order explains more of the variation in child labour in household work than market work, and is less important than age or gender in explaining variation in household work. The largest difference between Nepal and Vietnam in individual attributes and child labour appears to be in the relationship between gender and household work. As already observed in Section II, there appears to be important sex typing of tasks in Nepal. This section reveals that there is little evidence of this sex typing in Vietnam.

4.1 Age

72. The model of child labour in the previous section gives two main explanations for the importance of age differences in child labour. First, the return to education may diminish with cumulated education. For example, there may be large returns to learning the basics of reading and writing, but the return to improving these skills may be smaller than the initial return of acquiring them. Second, the returns to activities other than education may shift with age. Older children may be more productive in household production or the market may reward the activities of older children more than younger children. Both household production and market work appear to increase with age (Chart 2).

Chart 2. Participation in market work by age in Nepal (1999), Pakistan (1996), Vietnam (1998)



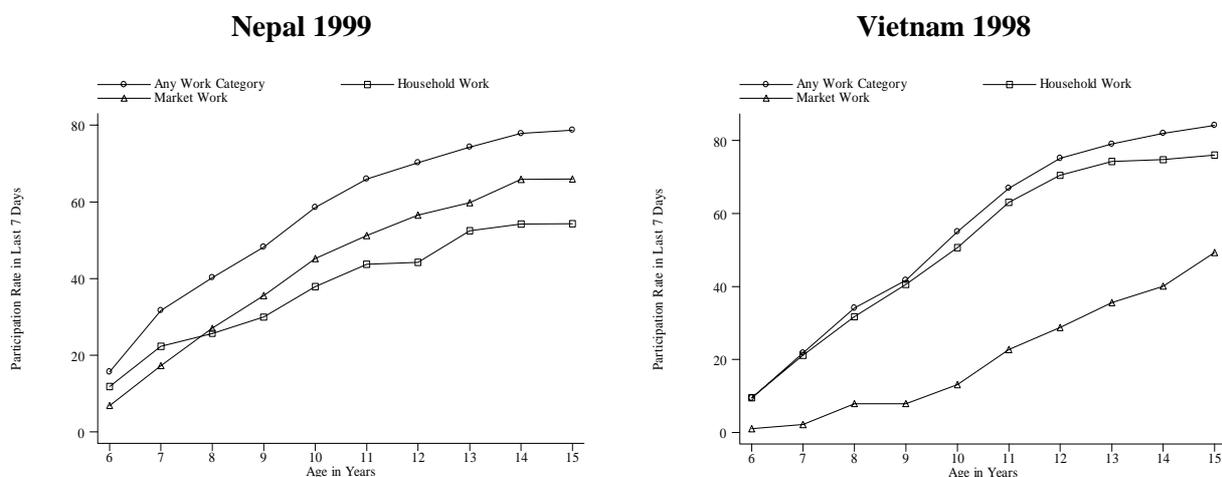
Sources: Pakistan data are from Rosati and Rossi (2001) based on the PCLS. Nepal results are from the NLFS (Edmonds, 2002b) and Vietnam results are from the VNLSS98 (Edmonds, 2002a). Nepal and Vietnam means are weighted to reflect sample design.

73. At every age, the participation rates are lower in Vietnam than in Nepal or Pakistan.⁸ The age gradient in market work appears largest in Pakistan with large jumps between ages 7 and 8 and 12 and 13. Vietnam likewise experiences a jump up between ages 7 and 8. A pre-pubescent child's capacity for some types of work may improve between these ages. There is also a change in the age gradient and jump in participation at age 11 in Vietnam. From age 11 on, the age gradient appears to be fairly constant in Vietnam. This age 11 is significant, because it is the first age at which students may complete primary school. In contrast to Vietnam and Pakistan, the age gradient in Nepal appears relatively smooth. The only apparent upward shift is between ages 13 and 14.

74. The age gradient in household production appears considerably smoother than the age gradient in market work in Vietnam, and the opposite appears to be true in Nepal. This is evident in Chart 3 that plots participation in household work, market work, or any work for Nepal and Vietnam.

8. The questionnaires are different between all three surveys, so it is impossible to identify whether the discussed differences are attributable to survey design or if they reflect actual differences. Hence, when observed differences in child labor across countries are discussed, it is important to remember that these are *observed* and may not be *actual*.

Chart 3. Participation in child labour by age in Nepal (1999) and Vietnam (1998)



a) All means are weighted to reflect sample design.

Sources: Nepal results are from the NLFS (Edmonds, 2002b) and Vietnam results are from the VNLSS98 (Edmonds, 2002a).

75. Children in Nepal appear to experience shifts in their participation in household production at ages 6 to 7, 9 to 10, and 12 to 13. The participation rates of just over 50% are similar to adult participation rates in household production. Participation in household production is considerably smoother in Vietnam, although participation rates level off at close to 70% at age 13. Combined, participation in any work follows a similar smooth, concave shape in both Vietnam and Nepal.

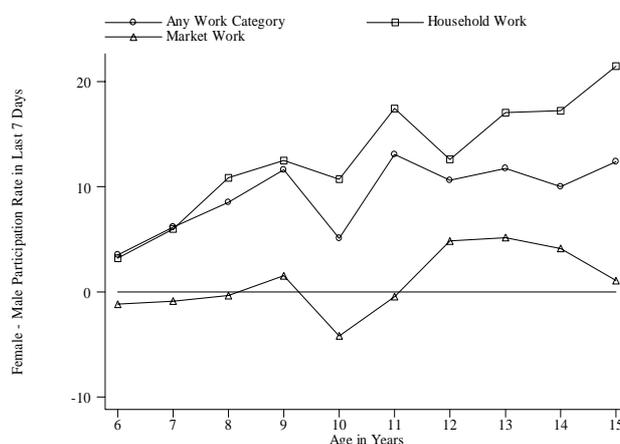
76. These country specific differences in the age gradients in household versus market work highlight the importance of country specific factors. Recall from the model of the previous section that the allocation of child time between schooling in work depends on weighing the household's marginal utility from additional schooling against the household's marginal utility from the additional consumption afforded by having the child work. The allocation of child working time between household and market work depends on weighing the return to child time in each of the two. Thus, the similar shape of the any work curve in Chart 3 suggests similar changes with age in the returns (in terms of utility) to schooling relative to work in the two countries. The level of the curve in Vietnam is lower than in Nepal at primary school ages, and this is consistent with the fact that Vietnam has much higher primary school enrolment rates. In contrast to the similarity in the shape of the any work curve, the differences in the shape of the household production and market work curves suggest country, age specific differences in the employment opportunities available to children.

4.2 Gender

77. Gender may influence child labour in ways similar to age. The returns to education may vary with gender. This seems likely to be especially important in Nepal and Pakistan where adult men and women participate in different economic activities. Likewise, the returns to activities other than age may also vary across genders because of discrimination of the sex typing of tasks. Moreover age and gender may interact in important ways. First, girls develop earlier than boys so they may be capable of more sophisticated tasks at certain age. As puberty onsets, boys may develop comparative advantage in more physical activities. Second, the sex typing of tasks may be more important in the types of activities performed by older children. Hence gender difference in household or market work may manifest itself both in the types of activities performed at a given age, and these gender differences may vary with age.

78. This gender discussion begins by examining gender differences in participation rates in various activities. Chart 4 contains the gender difference in participation rates in household, market, or any work for children in Vietnam.

Chart 4. Gender differences in child labour participation rates in Vietnam, 1998

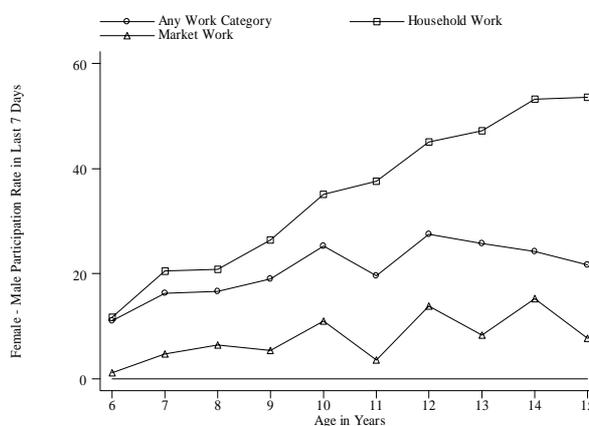


a) All means are weighted to reflect sample design.
 Source: Edmonds (2002a) using the VNLSS98.

79. Primary school age children have similar participation rates in market work, but girls work more in household and (hence) any work. In early secondary school ages (12-14), boy-girl differences in school enrolment are greatest, and in these ages girls also experience slightly greater participation rates in market work than boys. However, the largest gender differences are in household production, and these gender differences are increasing in age.

80. Gender differences in participation in all activities are substantially larger in Nepal than in Vietnam. Chart 5 plots the difference between female and male participation rates in each type work by age for Nepal. By age 15, participation rates in household work are over 50 percentage points higher for girls than for boys. Even at age 6, they are above 10 percentage points higher. The gender gap in participation in market work also seems to be increasing with age, although these participation rates are substantially more variable.

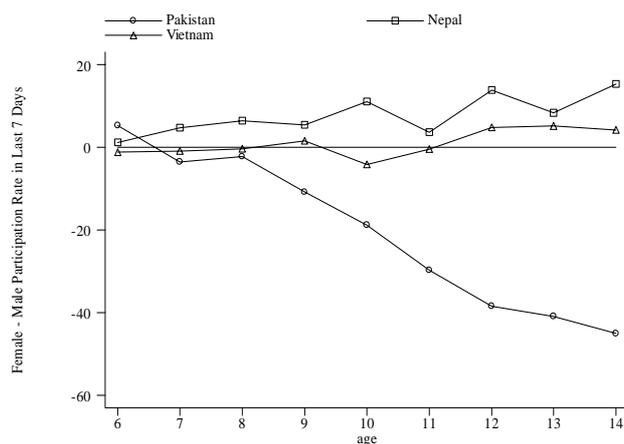
Chart 5. Gender differences in child labour participation rates in Nepal, 1999



Source: Edmonds (2002b) using the NLFS. All means are weighted to reflect sample design.

81. The description of the activities of boys and girls in Nepal in Section II found an important gender difference in participation in work outside of the household. Namely, although girls are more likely to work than boys, boys are more likely to interact with agents outside of the household (in both household and market work). Gender difference appears to extend to all forms of market work in Pakistan. Chart 6 contains the graph of the female-male difference in participation in market work for Nepal, Pakistan, and Vietnam.

Chart 6. **Female-Male Differences in Market Work Participation Rates – Nepal 1999, Pakistan 1996, Vietnam 1998**



Sources: Pakistan data are from Rosati and Rossi (2001) based on the PCLS. Nepal and Vietnam are author's calculation from NLFS and VNLSS98 respectively. Nepal and Vietnam means are weighted to reflect sample design.

82. In Vietnam, we found little gender difference in participation in market work. In Nepal, girls worked more in market work. However in Pakistan, beginning at age 7, boys work more in market work than do girls. The rate of growth in the gender difference begins to accelerate after age 8 and begins to stabilize by age 12. By age 14, female participation rates in market work are almost 45 percentage points lower than male participation rates.

83. These age and gender differences illustrate the importance of country characteristics in the allocation of child time. While the shape of the age gradient in overall work participation appears similar in Nepal and Vietnam, the distribution of child participation in household and market work varies substantively across countries. Moreover, important gender differences lurk behind these age patterns, and gender differences grow with age in all three countries. While there is close to 0 gender difference in participation in market work in Vietnam, the differences are extreme in Pakistan. This highlights the importance of local cultural traditions and labour market opportunities in the child labour supply decision.

4.3 Birth Order

84. While gender and age differences receive a great deal of attention in the public debates on child labour, relatively little discussion is raised about the child's position within its household. There are a number of reasons for why birth order may affect child labour supply. In the model of Edmonds (2002c), older children have comparative advantage in household and market production to their younger siblings. Hence, they work more. Birdsall (1991) outlines another model that generates birth order effects on child productivity from time constraints on mothers. Mothers are able to spend more time with the lowest and highest birth order children because of the fewer siblings around competing for parental time. Thus, low and high birth order children should be best off. Berhman and Taubman (1986) describe several other

reasons for birth order differences in education investments that may be applicable to child labour supply as discussed in Section III. For a wide array of reasons, there is no clear theoretical prediction about the link between birth order and child labour.

85. Table 10 examines birth order effects in Nepal and Vietnam. All regressions include controls for age, gender, their interactions, and household fixed effects. With the inclusion of household fixed effects to control for child invariant household attributes (such as location, size, head characteristics, and endowments), the birth order coefficients are identified by comparing the oldest child to other children in columns 1 and 3 or lower birth order to higher birth order children in columns 2 and 4.

Table 10. Total hours worked in the last week and birth order in Nepal and Vietnam^a

	Nepal 1999			Vietnam 1998		
	(1)	(2)		(3)	(4)	
Oldest	0.038 (0.719)			0.240 (0.772)		
Oldest female	2.609 (1.011)	**		1.870 (1.185)		
Birth Order		-2.187 (0.617)	**		-2.613 (0.783)	**
Birth order and Female		-0.659 (0.332)	**		-0.284 (0.330)	
Female	11.755 (2.042)	**	13.962 (2.122)	**	3.563 (1.863)	*
Costant	21.264 (1.398)	**	23.248 (1.438)	**	17.607 (1.366)	**
Age/Gender Effects	Yes	Yes		Yes	Yes	
Household effects	Yes	Yes		Yes	Yes	
Adj R2	0.541	0.543		0.770	0.780	

a) Dependent variable: Total hours worked (all activities) by child 6-15 in last seven days. * Significant at 10%. ** Significant at 5%. Standard errors are in parenthesis. Standard errors corrected for clustered sample design and arbitrary heteroskedasticity. Age/gender effects include a vector of dummy variables for the child's age and a vector of dummy variables for age interacted with the female indicator. A 15-year-old boy is the omitted category. Household effects indicate a dummy variable is included for each household. Nepal regressions are for the 14 394 aged 6-15 children (with siblings) of the household head. Vietnam regressions are for the 7 018 children aged 6-15 (with siblings) of the household head.

Sources: Edmonds (2002c) using the NLFS and Edmonds (2002a) using the VNLSS98.

86. The importance of cultural and country market attributes in the determination of hours worked is again prevalent in the difference between the Nepal and Vietnam results. Columns 1 and 3 consider whether the labour supply of the oldest child is different from other siblings and how the difference between the oldest child and other siblings varies with the child's gender. In Nepal, oldest females work more than younger siblings. Being the oldest female in Nepal is associated with an additional 2.6 hours of work a week while the oldest male only works an additional 0.04 hours per week. In contrast, the data does not indicate a statistically significant difference for older children in Vietnam, and there is no statistical support in the Vietnamese data for the gender difference observed in Nepal.

87. There are birth order effects in both Vietnam and Nepal, and they appear to be similar in magnitude. In Nepal, an increase in birth order (*i.e.* being relatively young) is associated with 2.2 fewer hours worked for boys and 2.8 fewer hours worked for girls. This greater birth order gradient for girls reflects the higher hours worked for girls overall. In Vietnam, an increase in birth order is associated with 2.6 fewer hours worked for boys and 2.9 for girls. In contrast to Nepal, the Vietnam data do not support a birth order gradient that differs for boys and girls. Thus, individual attributes are important determinants of child labour supply, and the significance of these individual attributes vary across countries.

V. WHY DO CHILDREN WORK: HOUSEHOLD ATTRIBUTES

88. In addition to child specific factors, there is ample scope within the framework of Section III for child labour to vary with household attributes. In fact, a majority of variation in child labour participation appears to be across households rather than from within households. Table 11 decomposes variation in participation in house and market work into variation that is between households (*e.g.* explained by a household fixed effect) and variation that is within the household.

Table 11. **Between versus within households variation in child labour in Nepal and Vietnam^a**

	Nepal 1999		Vietnam 1998	
	House Work	Market Work	House Work	Market Work
Within Households	42	34	39	35
Between Households	58	66	61	65

a) Each cell contains the percentage of variation in participation in the indicated work category (column) that is across households ("between") and across children within the same household ("within").

Source: Nepal results are from the NLFS (Edmonds, 2002*b*) and Vietnam results are from the VNLSS98 (Edmonds, 2002*a*).

89. In both Nepal and Vietnam, in both household and market work, there is greater variation in child labour participation across households than within. Moreover within household variation in child labour is larger for household work than for market work in both countries. This greater within household variation in child participation in household work is consistent with a simple model of comparative advantage in the production of household work as in Edmonds (2002*c*). Older children are likely better than younger children in the production of household goods, and this difference in household production may be greater than in market work. For example, a girl age 14 may be a better (thereby higher paid) carpet weaver than her 11-year-old brother, but she is likely to be substantially better than her 11-year-old brother in caring for their 12-year-old sister.

90. Table 12 considers within household correlations in participation in child labour further. The Nepal and Vietnamese samples are restricted to children aged 6-15 who have co-resident siblings within the same age range. Table 12 contains the results of a regression of an indicator for whether a child works in a given type of work or an indicator for whether the child has a co-resident sibling 6-15 that works. Each regression also includes a full set of age-gender dummy variables to control for age and gender differences in participation rates.⁹

9. These age controls are substantive, because older siblings are more likely to work. Thus, having a working older sibling indicates that a child is relatively young and thereby lowers the child's probability of working. The age dummy variables control for age differences in work participation rates.

Table 12. **Sibling correlations in participation in child labour in Nepal and Vietnam^a**

	House Work (1)	House Work (2)	Market Work (3)	Market Work (4)
Nepal 1999				
Sibling Participates in House Work	0.178 (0.007)**	0.155 (0.007)**		0.011 -0.007
Sibling Participates in Market Work		0.066 (0.007)**	0.371 (0.007)**	0.367 (0.007)**
Observations	14631	14631	14631	14631
R-squared	0.26	0.27	0.27	0.27
Vietnam 1998				
Sibling Participates in House Work	0.252 (0.012)**	0.248 (0.013)**		0.022 (0.010)**
Sibling Participates in Market Work		0.015 -0.013	0.327 (0.010)**	0.321 (0.010)**
Observations	5457	5457	5492	5492
R-squared	0.29	0.29	0.29	0.29

a) Each column-country grouping is a separate regression of an indicator for child participation in the indicated (column) work category on age, gender, and age*gender effects and the indicated measure of sibling participation in child labour. Sample is restricted to children with co-resident siblings between the ages of 6 and 15. * significant at 10%; ** significant at 5%. Standard errors are in parenthesis. All regressions include age*gender effects.

Sources: Nepal results are from the NLFS (Edmonds, 2002b) and Vietnam results are from the VNLSS98 (Edmonds, 2002a).

91. Columns 1 and 2 of Table 12 look at household work and columns 3 and 4 look at market work. In columns 1 and 3, an indicator for if a child works is regressed on an indicator for if a sibling participates in the same type of work. Columns 2 and 4 add an indicator for whether a sibling works in the other work category as well.

92. In Nepal, having a sibling working in household production raises the probability that a child works in household production by 18 percentage points. Having a sibling employed in market work raises the probability that a child works in market work by 38 percentage points. Sibling correlations in participation in work are similar in Vietnam.

93. Sibling participation in other types of work is a weaker predictor of a child's economic activities in both Nepal and Vietnam. When considered together, sibling participation in activity j is a stronger predictor of child participation in activity j than is sibling participation in the other type of activity. For example, in Vietnam, having a sibling engaged in market work raises the probability a child works in household work by merely 6% of the amount that having a sibling engaged in household work does. A sibling engaged in household work raises the probability a child works in market work by 7% of the amount that having a sibling engaged in market work does.

94. Of course, the regressions in Table 12 do not imply some unique causal effect of sibling participation on a child's activities. Rather, they reflect common factors in the environment of both children. Moreover, the common factors seem to be somewhat specific to a given work category, because a child's participation in household or market work is predicted by sibling participation in the same work category rather than the other work category. The nature of these common factors is explored in the remainder of this section and the next.

5.1 Parental Attitudes

95. Rich country observers typically ascribe child labour in poor countries to parental callousness. The role of parental attitudes in child labour supply is important, because if parents want children to work, then increases in income or efforts to help poor households may have little effect on labour supply. Then the only hope for addressing child labour is to direct efforts at labour demand. Section VII of this study examines existing child labour policy and finds that, in fact, labour demand is the focus of existing policy. Hence, assumptions about parental attitudes and callousness pervade existing social policy.

96. There is considerable academic support for the idea that callous parental attitudes play a deterministic role in child labour supply. Cain (1977) for example examines the net contribution of children to household resources in rural Bangladesh. He argues that boys become net producers in the household by age 12 and that their cumulative production exceeds their cumulative consumption by age 15. Cain reasons that, because of this, parents have children for work. Other authors (Parsons and Goldin, 1989 and Andvig, 1997) argue that because parents do not capture the return to educating their children, children inevitably are used to exploit all available earnings opportunities.

97. While the idea that child-welfare does not enter into parental preferences is an extreme one, other authors have emphasized social customs as an explanation for why parental preferences play a role in child labour supply (Rogers and Standing, 1981). Two types of evidence are generally cited to support the social norms explanations of child labour. First, several studies attribute gender differences in child labour to social customs (Canagarajah, 1998; Cartwright, 1999). As has been discussed, gender differences may stem from pure economic factors as opposed to social norms. Second, studies that find differences associated with ethnicity or effects of parental education beyond income are often cited as support for parental attitudes and social norms in child labour supply.

98. The available data on ethnicity in Nepal and Vietnam suggests that ethnic minorities have higher participation rates in both market and household work. However, ethnic minorities differ from non-minorities in a number of ways. Minorities tend to have weaker access to government programmes and services. They also tend to be poorer. Van de Walle and Gunewardena (2001) examine ethnic minorities in Vietnam, and find that their relative disadvantage in Vietnam stems primarily from geographic disparities rather than some distinct cultural or ethnic attribute of minorities. With respect to the activities of children, Edmonds and Turk (2002) find that half of the difference between minority and non-minority households is attributable to geographic differences alone. Moreover, Edmonds and Turk find that ethnic minorities and non-minorities experience similar reductions in child labour through time in Vietnam. Thus, in Vietnam, there is little evidence that being a minority itself is associated with higher levels of child labour.

99. Interpreting effects of head education on child labour while conditioning on income may be biased by confounding factors much as the ethnicity evidence appears to be. Within the framework of Section III, the head's education may influence the productivity of working children in household production. Hence, the value of child time outside of schooling may depend on the household head's education. Moreover, income is likely measured with error, and it is at least plausible that measurement error in income is correlated with the education of the household head. For example, more educated heads may be more likely to operate home enterprises, thereby making income measurement more difficult. Thus, while there is scope for the household head's education to influence child labour directly through the value of child time in the household, there may be no real effect of head education on child labour – the observed effects could just reflect measurement error. Either way, it is impossible to conclude that the effects of head education on child labour conditional on income necessarily reflect parental attitudes.

100. This subsection considers evidence on the role of parental attitudes in child labour decisions. In Section III parental preferences enter through the marginal utility of consumption today and the marginal

utility associated with improving the child's future well-being. It should be evident from equation (2) that separately identifying parental preferences towards consumption and towards the child's future well-being would be a daunting task. Parental attitudes also enter the problem of Section III through parental assumptions about the return to education. In the extreme form of the parental callousness model, the parent's return to education is zero and the parent's marginal utility from improving child well-being is zero. Thus, the household allocates child time between work and household production depends only on the relative return to work in schooling and household production. A child enters school only if it is costless and there is nothing for the child to do.

101. The evidence is solidly against the strong form of the parental callousness model. In all of the evidence examined so far in this paper, there is heterogeneity in participation in child labour, and it is hard to believe that this reflects a lack of anything better to do with child time than go to school. However inaccurate parental callousness maybe as an overall description of the reasons for child labour, parental attitudes may still play a significant role.¹⁰

102. Table 11 revealed that a majority of the variation in child labour is between households. However, time invariant household characteristics can explain less than half of the variation in child labour observed in households over time. In household work, household fixed effects explain 40% of the variation in participation in household work through time and 48% of the variation in participation in market work. This suggests that while a majority of the variation in child labour at a point in time is across households, the majority of variation in child labour through time is actually within household.

103. Table 13 explores this further by examining the predictive power of child labour participation in the first round (1993) of the Vietnam data for participation in the second round of the panel (1998). The unit of observation is the child, and the dependent variable is whether the child participates in the indicated type of work in the second (1998) round of the survey. Of interest is whether child labour participation in the first round of the survey predicts participation within the same household. Thus, the conditioning variables are whether a child in the household participated in the indicated type or work in the first round of the survey (1993) and whether a child in the household participates in the other work category in the 1993 round. As before, each regression also includes a vector of dummy variables for age, gender, and their interactions.

Table 13. **Inter-temporal relationships in participation in child labour in Vietnam, 1998^a**

	House Work	House Work	Market Work	Market Work	Market Work
	(1)	(2)	(3)	(4)	(5)
Participation in Household Work, 1993	-0.011	-0.017		0.028	0
	-0.024	-0.024		-0.019	-0.015
Participation in Market Work, 1993		0.021	0.163	0.157	0.053
		-0.023	(0.024)**	(0.024)**	(0.014)**
Commune Fixed Effects	No	No	No	No	Yes
Observations	4250	4250	4282	4282	4282
R-squared	0.23	0.23	0.17	0.17	0.41

a) Each column-country grouping is a separate regression of an indicator for child participation in the indicated (column) work category on age, gender, and age*gender effects and the indicated measure of participation in child labour of children in the household in 1993. Column 5 also includes community fixed effects. Sample is restricted to children in households that are observed in both rounds of the VLSS with co-resident siblings between the ages of 6 and 15. * significant at 10%; ** significant at 5%. Standard errors are in parenthesis.

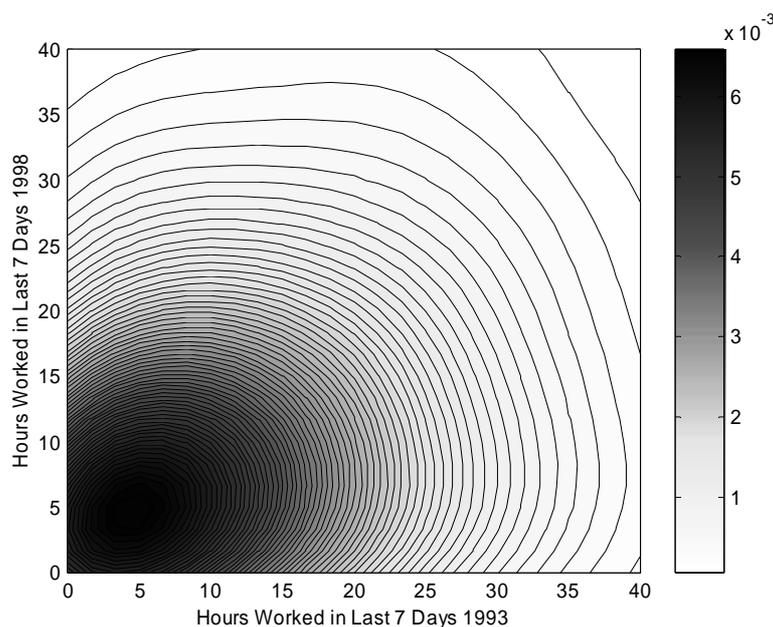
Source: Edmonds (2002a) using the VNLSS98.

10. One way to examine the importance of time invariant parental attitudes is to follow children through time. Vietnam data permit to do so as they followed 4 500 households in 1993 and again in 1998. However, it shows that there is little evidence of any persistence in child labour participation rates within households.

104. There is no evidence of persistence in household work participation through time. This may reflect the local nature of household demands for home production. In market work, however, we observe considerable persistence. A child is 16 percentage points more likely to work in market work in 1998 if it or a sibling worked in market work in 1993. If anything, this estimate may overstate the within household correlation in child labour supply, because this may partially capture persistence in an individual child's labour supply participation. Moreover, it is possible that this correlation reflects something about the location of the household. For example, child labour is likely to be higher in communities with more employment opportunities, and these employment opportunities may be persistent through time. Thus, column 5 includes community fixed effects to control for time invariant community characteristics. This dramatically reduces the inter-survey persistence in child labour. However, the data still suggest some persistence in participation in market work even within community.

105. This observed persistence may reflect parental attitudes or it may reflect persistence in earnings opportunities within a household. To explore this persistence in participation further, Chart 7 examines changes between 1993 and 1998 in hours worked per child by plotting the joint distribution of household fixed effects in hours worked in 1998 and 1993. In order to compute these household fixed effects in hours worked for each year, each child's total hours worked in a given year is regressed against a vector of dummy variables for age, gender, their interactions, and a household fixed effect. Using these regression results, the expected hours worked within the household for a 13-year-old girl is computed. This calculation is made separately in 1993 and 1998, and the resulting fixed effects estimates for each year are pictured in Chart 7. All observations on the same contour have the same likelihood of occurring in the data.

Chart 7. Joint density of hours worked during the last seven days in Vietnam (1993 and 1998)



Source: Edmonds (2002a) using the VNLSS93 and VNLSS98.

106. Chart 7 reveals considerable persistence in working a few hours each week. For example, it appears that observing around 5 hours in 1993 and 5 hours in 1998 is the most commonly seen combination in both years. Overall, the correlation between hours worked in 1993 and 1998 is a surprisingly high 0.24. However, if child labour supply were driven wholly by parental attitudes, without the influence of economic factors, all of the mass of the joint distribution would be on the forty-five degree

line. In fact, as hours worked increases, persistence falls. This is evidence in the general straightening (flattening) of the contours as hours worked in 1993 (1998) increase. For example, if we observe a child working 25 hours a week in 1993, we are most likely to see that child working around 10 hours per week in 1998, and we are almost half as likely to see the child work 25 hours in 1998.

107. Thus, while parental attitudes undoubtedly play some role in child labour supply, there is little evidence within the Vietnamese data that they are fully deterministic. Moreover, the persistence in child labour that we observe within households appears to be in relatively few hours worked. Thus, to the extent that persistence reflects parental attitudes or societal norms, whether or not these are substantive for child welfare is not evident.

108. Another way to examine parental attitudes towards child labour is to directly ask parents about why their children work. While working with subjective qualitative data is always difficult, there is scope for these questions to be informative about why parents have children work. The Pakistan Child Labour Survey contains questions about why parents “allow” their children to work (Table 14).

Table 14. **Distribution of working children 5-14 years old by parents’/ guardian’s main reason for letting children work in Pakistan, 1996**

	All Pakistan			Rural Pakistan			Urban Pakistan		
	All	Male	Female	All	Male	Female	All	Male	Female
To supplement household income	27	30	21	23	25	19	61	61	56
To pay outstanding debt	1	1	0	1	1	0	3	3	2
Assist/help in household enterprise	54	55	53	58	59	54	29	27	39
No one else available for household chores	14	11	23	16	13	25	1	1	1
Other	3	3	2	3	3	2	7	8	2

Source: Federal Bureau of Statistics (2001) using the 1996 Child Labour Survey.

109. Several interesting characteristics stand out in Table 14. First, the “other” category includes questions that allowed parents to respond that children worked because children should work or because there’s little benefit to education. Overall, this explains only 3% of working children in Pakistan. Second, in rural Pakistan, the main reason why children work is to assist in household enterprises (such as the farm). Household chores are also an important reason for why females work. In urban Pakistan, parents claim that supplementing household income is the main reason for sending a child to work. Third, a common theme in the case study literature is that household debts force children into work (especially bonded work). Very few households site the repayment of debt as a reason for sending children to work.

110. Thus, empirically, there is little support for the parental callousness model of child labour. In fact, while there does appear to be some persistence in household participation in child labour, the persistence is concentrated in relatively few hours of worked. Moreover, qualitative responses to the question of why children work reveals little evidence of extremely important attitudes or norms driving child labour supply. Hence, in subsequent sections we consider how child labour supply varies with various household economic characteristics.

5.2 Home Enterprises

111. When asked why children work, households in Pakistan overwhelming responded to help with the household business. In fact, most children work within their own household. Table 15 summarizes the distribution of employer type for the 2 million children working in market work in Nepal, the 18 million children in market work in Pakistan, and the 4 million children working in market work in Vietnam.

Table 15. **Employers of children in market work in Nepal, Pakistan and Vietnam**

(as percentage of all children in market work)

	Male	Female	Total
Nepal 1999			
Wage Employment	5.35	3.32	4.27
Self-Employment	4.47	4.95	4.72
Family Employment	90.18	91.73	91.01
Total	100	100	100
Pakistan 1996			
Wage Employment	25.42	16.88	23.16
Self-Employment	7.04	5.54	6.64
Family Employment	67.54	77.58	70.2
Total	100	100	100
Vietnam 1998			
Wage Employment	4.82	5.85	5.31
Family Business Employment	11.17	12.21	11.67
Family Agriculture Employment	84.01	81.97	83.02
Total	100	100	100

Sources: Pakistan data are from Rosati and Rossi (2001) based on the PCLS. Nepal results are from the NLFS (Edmonds, 2002b) and Vietnam results are from the VNLSS98 (Edmonds, 2002a). Nepal and Vietnam are weighted to reflect sample design. In the VNLSS98, it is impossible to separate work for self from work in a family business or farm. A child is designated as a wage worker if it participates in wage employment, self-employed if it participates in self-employment and not wage work, and family employment if it participates in neither wage nor self but does participate in market work.

112. In both Nepal and Vietnam, approximately 95% of children work within their own household either for themselves, the household farm, or the household business (self-employment is not separable from the household business in the VNLSS). Pakistan stands out with dramatically higher wage employment with 23% of children in market work working for wages. Nevertheless, even with this prevalence of wage work, still 77% of children work for themselves or their household.

113. In the model of Section III, this higher incidence of child work in household production suggests either binding constraints that limit child employment outside of its household or that the value of child time in household work is generally greater than in wage work. In this later case, the activities of children then depend on the types of activities undertaken in the household.

114. Table 16 looks at participation rates in household work and market work but the type of economic activity in the household. The first two panels consider children in rural households and the bottom panel looks at urban households. The first panel separates households into farm and non-farm rural households. In both Nepal and Vietnam, farm households have higher levels of participation in both household and market work than non-farm rural households. The second panel separates rural households by their enterprise status. In Nepal, a household with home enterprises has higher levels of child labour in both household and market work than does a household with neither a home enterprise (non-farm) nor a farm. In general, child labour is highest in agricultural households. Agricultural households also have the highest participation rates in Vietnam. The comparison between non-farm households with and without a home enterprise is less transparent. Non-farm households with a home enterprise have lower participation rates in household work, but higher participation rates in market work than non-farm households without home enterprises.

Table 16. **Child labour and household enterprise status in Nepal and Vietnam**

	Nepal 1999		Vietnam 1998	
	House Work	Market Work	House Work	Market Work
Agriculture - Rural				
Agricultural Household	38.56	47.92	56.94	27.04
Non Agricultural Household	27.68	14.14	48.82	9.03
Home Enterprises - Rural				
Home Enterprise and Agricultural	42.11	52.62	59.05	26.96
Home Enterprise non Agricultural	30.83	18.34	41.69	9.57
Agricultural, No Home Enterprise	33.79	41.61	55.91	27.09
No Home Enterprise, No Agricultural	24.51	9.93	46.87	8.23
Home Enterprises - Urban				
Home Enterprise	30.45	24.97	39.14	4.29
No Home Enterprise	27.31	14.78	42.8	9.29

Sources: Nepal results are from the NLFS (Edmonds, 2002b) and Vietnam results are from the VNLSS98 (Edmonds, 2002a).

115. In urban areas, the association between enterprise ownership and child labour varies by country. In Nepal, home enterprises are associated with greater participation rates in house and market work, but the opposite is true in Vietnam. In the Vietnamese case, households with home enterprises are richer than households without, so this difference in living standards may explain the reverse association found in Vietnam. Unfortunately, such a calculation is not possible in the Nepal data.

116. The panel nature of the Vietnam dataset also permits an examination of how child labour responds to changes in household enterprise status. These results are in Table 17. In columns 1-3, the dependent variable is an indicator for whether a child works in either household or market work, and the dependent variable in columns 4-6 is an indicator for whether the child works in market work. The sample is restricted to children in rural households, and each regression includes a dummy variable that indicates if the household is a non-farm household and a dummy variable that indicates if the household owns a business.

Table 17. **Enterprise ownership and child labour in rural households in Vietnam, 1998**

	Any Work			Market Work		
	(1)	(2)	(3)	(4)	(5)	(6)
Non-farm, Rural Household	-0.031 (0.023)	-0.023 (0.015)		-0.074 ** (0.018)	-0.056 ** (0.016)	
Owns Business	-0.035 ** (0.014)	0.009 (0.01)	0.039 ** (0.017)	-0.04 ** (0.014)	0.005 (0.011)	0.036 * (0.02)
Commune Effects	No	Yes	No	No	Yes	No
Household Effects	No	No	Yes	No	No	Yes
Region*Time Effects	No	Yes	Yes	No	Yes	Yes
Adjusted R2	0.263	0.372	0.432	0.199	0.353	0.41

a) * is significant at 10%. ** is significant at 5%. Standard errors in parenthesis. Standard errors are corrected for arbitrary heteroskedasticity and the cluster / time design of the survey. All regressions include a quadratic in age and gender, a constant, and a year effect.

Source: Edmonds and Turk (2002).

117. In columns 1 and 4, owning a household business is associated with lower participation rates in child labour, and participation is especially low in non-farm households with a business. This result may

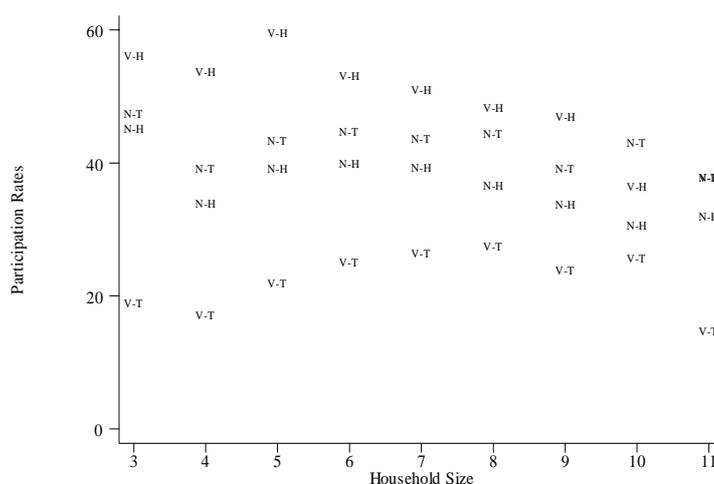
reflect the fact that households with businesses tend to be richer. Thus, columns 3 and 6 include household fixed effects in order to control for time-invariant household characteristics. By including household fixed effects, the “owns business” coefficient is identified by households that change their enterprise status. Opening a business is associated with about a 4 percentage point increase in the probability that the child works in both market and any work. Thus, there is some evidence that the employment opportunities open to a child within the household plays a substantive role in child labour supply.

5.3 Household Composition

118. Employment opportunities open to a child within the household may also depend on household composition. For example, in larger households, there may be more people undertaking economic activities in which children can help. Moreover, household composition may influence the household’s labour demand for child labour. Large households may have more tasks in which children are needed. Alternatively, with diminishing marginal products of labour in household production, more workers may lower the value of a child’s marginal product in household production thereby forcing a decline in work and increase in schooling to maintain equilibrium within the household. Of course, another factor to consider is that larger households tend to be poorer. Thus, demand for child labour may be higher.

119. To evaluate the link between household size and child labour, Chart 8 displays participation rates in household (H) and market work (T) by household size for Nepal (N) and Vietnam (V).

Chart 8. Participation in child labour and household size in Nepal and Vietnam^a



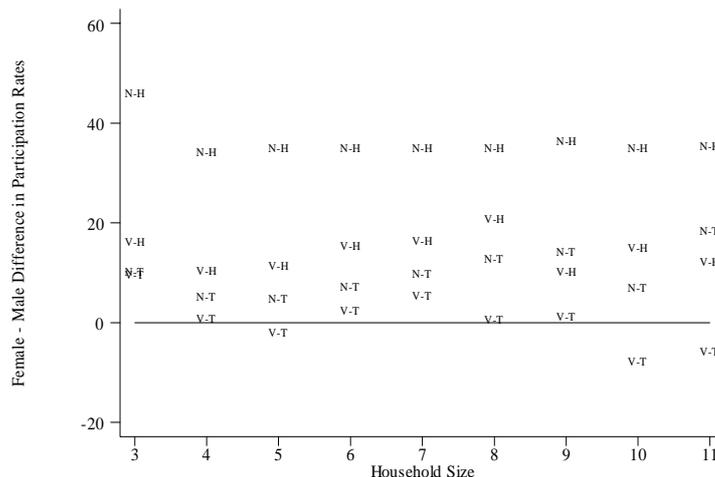
a) Each observation is labelled “country-type of work” where country is Nepal (N) or Vietnam (V) and type of work is household (H) or market (T). Data for Nepal are from 1999 and for Vietnam from 1998.

Source: Author’s calculations from the NLFS and VNLSS98.

120. In Vietnam, there is some evidence of decreasing participation rates in household production with household size. However, there is no evidence of a decline in household production with household size in Nepal. In fact, in market work in Vietnam and in both forms of work in Nepal, there appears to be a hump shape in participation rates by household size. That is, participation rates increase in household size from 4 to 8 people, but begin to decline in larger households. This may reflect a tension between increasing demand and diseconomies of scale. Perhaps diseconomies of scale in general do not become important until larger households. However, in that case, the results in Vietnam seem a puzzle.

121. Chart 9 examines gender differences (female-male) in participation in child labour by household size. In both market and household work, the gender gap in participation rates is larger in Nepal than in Vietnam. Moreover, in Nepal, the gender gap in household production appears flat in household size. That is, boys and girls experience similar changes in child labour supply in household production across household sizes.

Chart 9. Female – Male differences in participation in child labour and household size in Nepal and Vietnam^a



a) Each observation is labelled “country-type of work” where country is Nepal (N) or Vietnam (V) and type of work is household (H) or market (T). Data for Nepal are from 1999 and for Vietnam from 1998.

Source: Author’s calculations from the NLFS and VNLSS98.

122. The gender gap in market work in Nepal appears to be increasing in household size. As household size increases, girls tend to be working more than boys in market work. However, both Vietnamese series exhibit a hump shape in gender differences in participation rates. Gender differences in participation rates in market work are largest in households with seven people, and gender differences in household work are largest for households with 8 members. Interestingly, in the largest households, boys participate more in market work than do girls. This is accompanied by an increase in participation rates in household work for girls. Hence, in large households, girls appear to have to bear more responsibility for within household tasks.

123. In addition to household size affecting child labour supply, the mix of children around a child may affect child labour supply. Consequently, Table 18 considers evidence on the effect of sibling sex composition on child labour supply. These effects may come through higher labour demand inside the household as with household size. Boys may require greater care (or yield a greater return to time spent rearing) than girls. Alternatively, boys and girls may compete for scarce household resources. In the model of Garg and Morduch (1998), households face liquidity constraints. Thus, children compete for resources within the household. If households capture larger returns to investing in boys, then having more boy siblings implies that the household needs to devote more resources to education. This makes all existing siblings worse off, because resources become scarcer.

Table 18. Hours in child labour and sibling gender composition in Nepal and Vietnam

Linear Probability results^a

	Nepal 1999				Vietnam 1998											
	Market Work		Household Work		Market Work		Household Work									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)								
# Younger	1.27 (0.55)	**	0.38 (0.29)		1.85 (0.63)	**	0.94 (0.32)	**								
# Younger * Female	0.5 (0.34)		1.24 (0.21)	**	0.07 (0.37)		-0.13 (0.22)									
# Younger Brothers		1.85 (0.67)	**	0.33 (0.33)		2.32 (0.81)	**	1.01 (0.4)	**							
# Younger Brother * Female		0.56 (0.51)		1.23 (0.32)	**	0.14 (0.45)		-0.30 (0.33)								
# Younger Sisters		0.63 (0.71)		0.44 (0.39)		1.31 (0.79)	*	0.87 (0.43)	**							
# Younger Sisters * Female		0.72 (0.46)		1.22 (0.28)	**	0.25 (0.53)		0.04 (0.31)								
Female	0.89 (1.87)	0.59 (1.9)	7.85 (1.03)	**	7.87 (1.07)	**	0.8 (1.9)	0.56 (1.92)	3.83 (0.87)	**	3.85 (0.87)	**				
Constant	14.65 (1.98)	**	14.61 (1.98)	**	1.49 (1.00)		1.5 (1.00)		7.41 (2.11)	**	7.41 (2.10)	**	3.3 (0.89)	**	3.31 (0.89)	**
Adj R2	0.47	0.48	0.37	0.37	0.71	0.71	0.75	0.75								

a) Dependent variable: total hours worked in the last seven days in the indicated category of work. * Significant at 10%. ** Significant at 5%. Standard errors are in parenthesis. Standard errors are corrected for clustered sample design and arbitrary heteroskedasticity. All regressions include household fixed effects, a vector of dummy variables for the child's age, and a vector of dummy variables for age interacted with the female indicator. A 15-year-old boy is the omitted category. Nepal regressions are for the 14 394 aged 6-15 children (with siblings) of the household head. Vietnam regressions are for the 7 018 children aged 6-15 (with siblings) of the household head.

Sources: Edmonds (2002c) using the NLFS and Edmonds (2002a) using the VNLSS98.

124. Columns 1, 3, 5, and 7 regress hours worked in the indicated category of child labour against the number of younger individuals in a household, household fixed effects, and controls for a child's age, gender, and interactions. The interaction of female with the number of younger sibling in the household allows the effect of adding an additional younger sibling to vary with gender. In both Nepal and Vietnam, adding a younger sibling increase time spent in market work, and this increase is not different (statistically) across genders. However, adding a younger sibling increases household work for both boys and girls in Vietnam, but household work increases only for girls in Nepal.

125. This contrast in gender results for household work persists if the effect of adding a younger sibling is allowed to vary with the gender of the sibling. These results are in columns 2, 4, 6, and 8. In Nepal, adding a younger brother increases time in market work for both boys and girls but only increases household work for girls. The Nepali data do not reject the hypothesis that there is no increase in market work with the addition of younger sisters for both boys and girls. However, adding a younger sister increases household work for girls, and the increases in female time in household work with adding a younger sister is similar in magnitude to the increase in household work for girls when adding a younger brother. Thus, by adding younger siblings in Nepal, there appears to be an increase in necessary household work that is performed by girls. The additional market work with the addition of boys may reflect the need for purchased inputs into schooling or health.

126. The Vietnam results differ from the Nepali results. Market work increases for both boys and girls with the addition of a younger brother or sister. However, the increase in market work is larger in magnitude when the younger sibling is a brother (this difference is not, however, statistically significant). With the addition of a younger sister or brother, household work also increases. Again, the increase is larger when the sibling is a brother, but the difference is not statistically significant. In neither case does

the data present any evidence that girls respond differently than boys to changes in the number of younger siblings or in the gender mix of these younger siblings.

127. Parental residency may also affect child labour supply. In the framework of Foster (1998), co-residency differentially affects investment decisions because of the household's decision-making process. In the present case, having a parent present may influence how the household values investments in the child. Alternatively, there may be a relationship between the presence of the parent and the types of duties expected of a child. For example, a girl may need to take over her mothers household duties if the mother departs for work elsewhere or dies.

128. The Vietnamese data that follow households over time permits an exploration of how child labour supply responds to changes in the presence of parents of the household head. Table 19 contains the results of regressing an indicator for child participation in market or household work (labelled "all work") or market work alone against age*gender controls, a year effect, and other indicated variables.

Table 19. **Adult migration history and child labour (during the last 7 days) in Vietnam, 1998**

Linear Probability results^a

	All Work			Market Work		
	(1)	(2)	(3)	(4)	(5)	(6)
Head Ever Moved*1998	0.017 (0.019)	-0.011 (0.013)	-0.003 (0.022)		-0.028 (0.02)	
Father Resident				0.028 (0.038)		-0.036 (0.028)
Mother Resident				-0.016 (0.046)		0.038 (0.037)
Head Move				0.059 (0.020)	**	0.034 (0.020)
Commune Effects	No	Yes	No	No	No	No
Household Effects	No	No	Yes	Yes	Yes	Yes
Region*Time Effects	No	Yes	Yes	Yes	Yes	Yes
Adjusted R2	0.26	0.372	0.431	0.432	0.41	0.41

a) * is significant at 10%. ** is significant at 5%. Standard errors are in parenthesis. Standard errors are corrected for arbitrary heteroskedasticity and the cluster / time design of the survey. All regressions include a quadratic in age and gender, a constant, and a year effect. Head ever moved is an indicator for if the head in 1993 reported ever having moved. It is interacted with the year effect for 1998. Hence it has the interpretation of being the extra change in child labour in households where the head had moved before 1993 in addition to the general decline in the population.

Source: Edmonds and Turk (2002).

129. After controlling for child characteristics, column 1 reveals that households where the head has ever moved experience smaller declines in child labour. However, households with a head who has moved may be located in different areas than households where the head has never moved. For example, there may be more people who have moved in cities than in remote rural areas. Hence, column 2 controls for differences in the residential location of ever movers with commune fixed effects. Column 2 also controls for differences across regions in the declines in child labour with region * time effects. Results change after including these controls in column 2. Column 2 reveals greater reductions in ever-mover households. Controlling for household differences (in column 3), attenuates the relationship between ever movers and child labour further. Hence, most of the differences between households where the head has a migration history and households where the head does not appear to owe more to differences in the location of households with heads who have moved rather than being something intrinsic about moving itself. Column 5 reveals a similar result for market work.

130. In general, the VNLSS does not capture households that move between 1993 and 1998. However, there are households where one or more members have departed or returned. Columns 4 and 6 examine the effect on child labour of having the residency patterns of parents or the household head change. There are substantially smaller declines in child labour in households where the head has changed between rounds of the VNLSS. This smaller decline in child labour appears in both household work and market work. It is obviously not clear whether this additional work in households that have migrant heads is directly attributable to the departure of the head or if there are common factors causing both. There is no evidence of a statistical effect of parents moving on child labour supply. However, this is an infrequent enough event that there may not be statistical power to detect any effect.

5.4 Living Standards

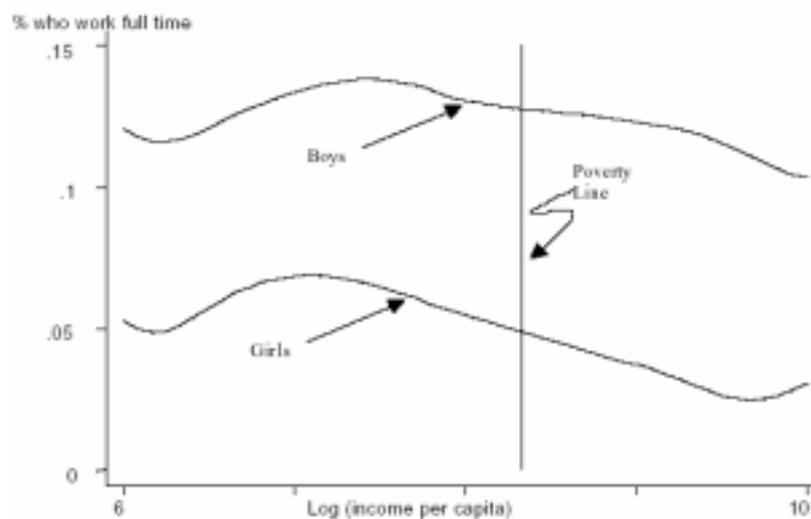
131. Household living standards may be a key attribute in determining how much a child works. On the one hand, poverty may be a key cause of child labour. Poor households likely have higher marginal utilities of consumption. Thus, the value of an additional unit of child time in work is higher in a poor than a rich household. Hence, even if children in poor households value their child's well-being the same as in a rich household and even if poor children receive the same market opportunities and returns to education, child labour will be higher in a poor household. Moreover, any factor that influences household income absent child labour (Y) can affect child labour supply. High non-child labour income lowers the marginal utility of consumption. The household equilibrium of equation (2) in Section III then implies a shift away from work towards education.

132. On the other hand, living standards improvements do not necessarily decrease child labour. Children in richer households may be better nourished and thereby better workers. Similarly, improvements in living standards may affect the technology the household uses for household production or there may be complementarities between purchased inputs and child labour in household production. With diminishing returns to schooling, this increase in productivity in household production may reduce schooling. In addition, it is not necessarily the case that households care about the future well-being of their children. This is an implication of the parental callousness models that pervade the public policy perspective on child labour. Thus, the effect of living standards on child labour is an open, empirical question.

133. Much of the descriptive evidence on living standards and child labour in the three countries considered here suggests a strong link between poverty and child labour. For example, the Kamaiya system of bonded labour in Nepal allegedly exists because children are used as bonds on household loans. When a household is unable to repay its loan, children are taken. Similarly, in Pakistan, households commit children to the Peshgi system of bonded labour for cash transfers. Obviously, the existence of these two systems does not necessarily imply a causal role for poverty in child labour. In the Kamaiya system, perhaps callous parents are defaulting on loans, because they do not value the collateral. However, descriptive evidence from Vietnam argues that negative shocks are responsible for an inability to pay debts. This in turn forces children to work (*e.g.* ILO/IPEC, 2000; Bond and Hayter, 1998).

134. Unfortunately, the Nepali survey does not permit an exploration of the link between living standards and child labour supply, because it does not collect information on non-labour income or expenditure. Two studies, however, consider the link between child labour and living standards in the Pakistani data: Jensen (2000) and Bhalotra (2000).

Chart 10. Percentage of children working full-time against income, in Pakistan, 1991



Source: Jensen (2000) using the 1991 PIHS.

135. Chart 10 plots the relationship between full-time work and household income in the PIHS data. In the poorest households, Jensen (2000) observes that participation rates in full-time employment seem to increase with household income. This may reflect the positive effect of these full-time earners on household income. However, well below the poverty line Jensen observes full-time employment declining with increases in household income (despite the effect of child employment on income). In fact, full-time employment rates are lowest in the wealthiest households. One surprise is that the income elasticity of participation in full-time employment appears similar for boys and girls despite the fact that girls are less likely to attend school.

136. Bhalotra (2000) explores the link between living standards and child labour in the PIHS further. She looks at participation rates by gender and type of work by quartile of the per capita expenditure distribution.¹¹ Her findings are in Table 20. Bhalotra's research reveals three main insights not apparent in Chart 10. First, both wage work and schooling seem much more sensitive to living standards for girls than for boys. This suggests that as households grow richer, they move girls out of work and into school. Alternatively, as households grow poorer, girls are the first to move into work. The fact that the patterns for boys are less dramatic than for girls simply reflects higher general enrolment rates. Second, market work in the household is less income elastic than wage work. This reflects the results observed above: within the household, more flexible working arrangements appear feasible.

11. Income is obviously not the same as expenditure. In general, per capita expenditure is a preferred measure of living standards. There are two justifications for looking at expenditure rather than income. First, most households do not participate exclusively in formal labor markets. Hence, calculating income is very difficult. Second, while income is variable, households tend to try and smooth consumption through time, and expenditure better approximates consumption than income does.

Table 20. Participation rates of children 10-14 in rural agricultural households by quartiles^a of consumption expenditure in Pakistan, 1991

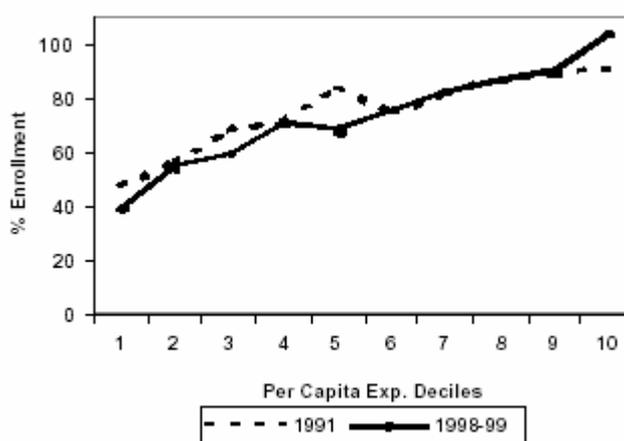
Quartile	Q1	Q2	Q3	Q4
Mean	223.6	362.7	514.1	1176.7
Boys				
Wage Work	8.6	7	5	4.4
Market Work in Household	26.9	25.2	24.2	17.7
Schooling	61.7	65.9	80	83.9
Girls				
Wage Work	20.5	15	7.3	4.8
Market Work in Household	32.6	34.4	26	25.6
Schooling	18.4	25.7	39	39.7

a) Quartiles are of household per capita consumption expenditure per month. The poverty line for rural Pakistan in 1990-91 was Rs. 243 per capita.

Source: Bhalotra (2000) using the PIHS.

137. A recent World Bank study (2002) examines the link between living standards and school enrolment in Pakistan. They have access to the most recent nationally representative household survey, so they can compare the link between living standards and schooling in the 1991 PIHS data and more recent data (see Chart 11).

Chart 11. School enrolment by per capita expenditure in Pakistan, 1991-1999



Source: World Bank (2002).

138. In Chart 11 the role of living standards in child labour and education appears relatively stable through time. Enrolment rates appear slightly lower for poor households in 1998 than in 1991 and slightly higher for richer households in 1998. But overall, not only is enrolment increasing in living standards in both 1991 and 1998, the relationship between the two appears very similar. School enrolment is obviously not the same as school attendance, but given that enrolment is costly to the household in Pakistan, it is likely that they are correlated.

139. This cross-sectional comparison of child labour reduction in households that differ in their income or expenditure is problematic, because income and expenditure decisions are jointly determined with household labour supply decisions. Hence, there may be common factors driving the relationship

observed in the cross-section that do not reflect any causal effect of living standards improvements on child labour. There is no reason to believe that poor households observed at one point in time would have labour supply in anyway similar to rich households observed at the same point in time if the poor households had the rich household's income or expenditure.

140. The VNLSS, however enables a comparison of child labour in the same households through time. Thus, while common factors may drive changes in living standards and child labour, it is possible to observe the within household changes in child labour. Moreover Edmonds (2002d) suggests a decomposition that examines the ability of within household living standards improvements to explain declines in child labour. This analysis is not causal in the marginal effects sense (*i.e.* the results do not imply what happens if household expenditures increase by a small amount). However, the methodology used does not allow spurious factors behind improvements in living standards and declines in child labour through time to generate a spurious correlation between living standards improvements and declines in child labour.

141. The basic idea is to map the relationship between living standards and child labour in the first round of the VNLSS panel, then use this relationship to predict within household declines in child labour that can be compared to the observed declines in child labour. Thus, the first step is to calculation participation rates across the living standards distribution. To do this an indicator for participation in market work is regressed (with a probit model) against per capita expenditure, controlling for differences in child labour associated with age, gender, and household size:

$$(3) \quad y_{i,93} = \pi_{93}(X_{i,93}) + \beta_{1,93}H_{i,93} + \beta_{2,93}A_{i,93} + \beta_{3,93}G_{i,93} + u_{i,93}$$

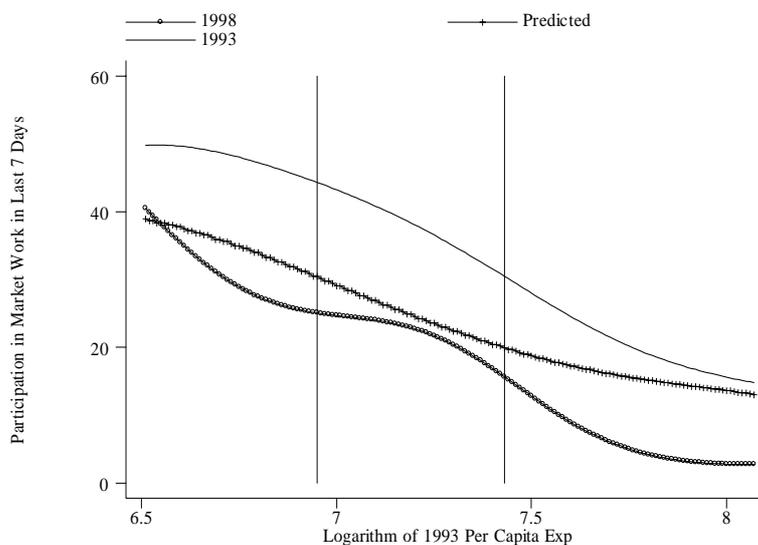
y is the indicator for whether child i works. H is a vector of household size dummy variables, A is a vector of age dummies, and G is an indicator for gender. The relationship between child labour and living standards is likely to be highly non-linear. Edmonds allows for this by modelling the relationship between per capita expenditure and child labour with a flexible Fourier form in per capita expenditure, denoted $\pi_i(X_{it})$. Thus, per capita expenditure is transformed to be on the interval 0 to 2π and included in equation (3) is the transformed per capita expenditure, its square, $\sin(jx)$, and $\cos(jx)$ where $j=1,2,\dots,6$.

142. In order to display the results of equation (3) meaningfully, a reference child is selected. Edmonds selects a 12-year-old boy in a household with 6 members. The choice of a reference child shifts the intercept but does not influence the relationship between per capita expenditure and child labour. He then computes of participation in market work varies with living standards using the results from (3):

$$(4) \quad \bar{y}_{i,93} = \pi_{93}(X_{i,93}) + \beta_{1,93}(H = 6) + \beta_{2,93}(A = 12) + \beta_{3,93}(G = 0).$$

143. This relationship in equation (4) is pictured as the top line in Chart 12. The right vertical line indicates the 1993 poverty line. The left vertical one indicates the minimum per capita expenditure in 1993 with which households were above the poverty line in 1998. Thus, all households in the range of the 1993 living standards distribution pictured between the vertical lines in Chart 12 exit poverty between 1993 and 1998.

Chart 12. Living standards and the decline in market work in Vietnam, 1998



Source: Edmonds (2002d) using the VNLSS98.

144. There are two important parts in the top line in Chart 12. First, in the poorest households with living standards below 7.0 on the log scale (approximately USD 65 per person per year), child labour appears fairly inelastic with respect to per capita expenditure. This level of expenditure corresponds to what the World Bank *et al.* (1999) estimates to be the expenditure necessary to purchase 2 100 calories per day, ignoring all non-food expenditures. However, around the 2 100 calorie per day line, child labour begins to decline with expenditure. The second important part of the top line is around the poverty line. There, the rate of decline in participation rates appears to increase before levelling off slightly at around the equivalent of USD 192 per person per year (7.7 in Chart 12).

145. The second step in Edmonds (2002d) decomposition is to estimate a regression like equation (3) on the 1998 data. The bottom line in Chart 12 is the result of this regression, again computed for a reference child:

$$(5) \quad \bar{y}_{i,98} = \pi_{98}(X_{i,93}) + \beta_{1,98}(H = 6) + \beta_{2,98}(A = 12) + \beta_{3,98}(G = 0).$$

146. It is important to note that the relationship in equation (5) pictured as the bottom line of Chart 12 reflects the link between child labour in 1998 and per capita expenditure in 1993. Thus, this bottom line does not plot the relationship between child labour and living standards. Rather, it results from both the link between living standards and child labour in 1998 and improvements in per capita expenditure that take place between 1993 and 1998.

147. Changes in technology, policy, or prices may change the link between living standards and child labour. Thus, the mapping between living standards in 1998 and child labour supply in 1998 may look different from the mapping using the 1993 data. The aim of this decomposition is to fix the link between living standards and child labour in order to identify how much of the observed decline in child labour comes from household becoming richer as opposed to changes induced by all of these policy, technology, and price changes that accompany growth. Thus, for each value of the living standards distribution, Edmonds' calculates how much living standards improve between 1993 and 1998:

$$(6) \quad X_{i,98} = \theta_{98}(X_{i,93}) + \alpha_{1,98}(H = 6) + \alpha_{2,98}(A = 12) + \alpha_{3,98}(G = 0)$$

148. By plugging $\theta_{98}(X_{i,93})$ into equation (3), it is possible to predict child labour in 1998 based on living standards improvements alone:

$$(7) \quad \hat{y}_{i,98} = \pi_{93}(\theta_{98}(X_{i,93})) + \beta_{1,93}(H_{i,93} = 6) + \beta_{2,93}(A_{i,93} = 12) + \beta_{3,93}(G_{i,93} = 0).$$

149. The middle line in Chart 12 contains the results of (7). Thus, the lines in Chart 12 correspond to estimates of respectively, $\bar{y}_{i,93}$, $\hat{y}_{i,98}$, and $\bar{y}_{i,98}$.

150. Chart 12 reveals that much of the within household declines in child labour observed in Vietnam can be explained by improvements in living standards. 82% of the observed decline in market work for households that exit poverty can be explained by living standards improvements. Living standards improvements explain 86% of the decline in market work observed in the poorest decile of the population and 66% of the decline observed throughout the population. Column 1 of Table 21 summarizes how much of the observed decline in market work can be explained by living standards improvements for various parts of the distribution.

Table 21. **Percentage of observed decline in child labour that can be explained by living standards improvements, by population subgroups and types of work in Vietnam, 1998**

	All	Urban	Rural	Wage	Agriculture	Business	Household	Schooling
Bottom 10 %	85.8	24.8	83.9	69.5	74.5	100.6	256.4	179.1
Bottom 25 %	73.8	8.7	78.1	61.6	75.7	-1.4	139.2	137.5
Bottom 50 %	78.8	21.1	84.3	45.8	86.4	-2.8	171.9	115.4
Bottom 75 %	73.9	34.2	74.6	19.0	82.8	-3.3	146.7	107.1
Poverty Exiting								
Households	81.8	29.6	85.8	16.3	92.9	-47.0	177.9	95.3
Full Sample	65.7	41.0	64.5	25.0	73.9	-29.9	128.4	103.2

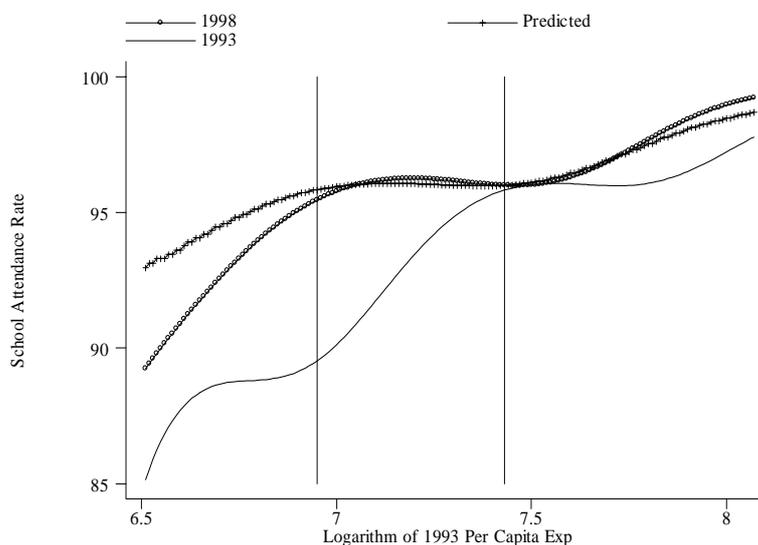
- a) Each cell contains the fraction of the observed decline in child labour that can be explained by living standards improvements for the indicated population group using the series estimator described in text. In columns 1-3, the dependent variable is whether the child participates in market work. In column 4, the dependent variable is whether the child participates in wage work. Column 5 is based on an indicator for if the child participates in agriculture. Column 6 is based on whether the child participates in a household business other than agriculture, and column 7 predicts participation in household production activities. Column 8 predicts changes in school participation.

Source: Edmonds (2002a) using the VNLSS93 and VNLSS98.

151. Columns 2 and 3 of Table 21 consider the ability of living standards improvements to explain the observed declines in child labour in urban and rural households respectively. Living standards improvements explain the observed declines in child labour in rural households better than in urban households. Part of the reason for this urban/rural difference may be attributable to differences in the type of work across urban and rural areas. Columns 4-7 consider the ability of living standards improvements to explain declines in each type of market work (columns 4-6) and in household work (column 7). Living standards improvements have the most explanatory power in the two types of work most common in rural areas: agriculture and household production. A second reason for the observed urban/rural differences may be more practical. The richest households in Vietnam are in urban areas, and many of these urban households attain living standards levels in 1998 that are unobserved in 1993. Hence, this decomposition does a poor job of predicting child labour in these rich urban households in 1998.

152. While market work and household production declined dramatically in Vietnam in the 1990s, school enrolment increased, especially for older children. Chart 13 reproduces the decomposition methodology above to consider how living standards improvements can explain increases in school attendance.

Chart 13. Living standards and the increase in school attendance in Vietnam, 1998



Source: Edmonds (2002a) using the VNLSS93 and VNLSS98.

153. The bottom line in Chart 13 shows the relationship between school attendance and living standards in 1993. As with child labour supply, the rate of increase in school attendance with living standards increases dramatically near the estimated cost of purchasing 2 100 calories per day per person (7.0). However, the association between school attendance and living standards levels off in the neighbourhood of the poverty line.

154. Households whose 1998 per capita expenditure are above the poverty line (the left most vertical line in Chart 13) have approximately a 95% school attendance rate. This corresponds to the attendance rate for households at the poverty line in 1993. Thus, it is not surprising that living standards improvements explain much of the observed increase in school attendance. For households that exit poverty between 1993 and 1998, living standards improvements can explain 95% of the observed increase in school attendance. This finding is consistent with the results in Glewwe and Jacoby (forthcoming) who find that changes in household wealth in Vietnam are associated with changes in the demand of schooling and with Jacoby (1994) who shows that lower income households in Peru withdraw their children from school earlier than do higher income parents. In the poorest households, living standards improvements over-predict the observed increase in school attendance, but the predictive power of living standards for increases in school attendance is dramatic in the rest of the distribution.

155. Thus, the empirical evidence from Pakistan and Vietnam suggests a strong link between household living standards and child labour. This link is confirmed by descriptive evidence from cases in all three countries under study. Overall, household attributes are important determinants of child labour, and household size and employment opportunities clearly play a role in child labour supply. Parental attitudes and social norms also likely play a role. They seem particularly important in explaining the varying role of gender across countries although it is possible that differences in production opportunities explain these gender differences. However, no factor comes close to living standards improvements in its ability to explain variation in child labour. Thus, the evidence in this section is consistent with the claim that household poverty is one of the key determinants of child labour supply.

VI. WHY DO CHILDREN WORK: COMMUNITY ATTRIBUTES

156. The household's problem in determining child labour supply is to weigh the marginal utility of the additional consumption stemming from having the child work against the marginal utility associated with improving the child's well-being from not-working. Community characteristics may affect the household's marginal utility of consumption, because a household's wealth may be strongly correlated with its community's living standards. Community characteristics may also affect the returns to education. For example, Foster and Rosenzweig (1996) find that between community differences in schooling in India can be explained in part by differences in the returns to education associated with the timing of adoption of green revolution technologies. Finally, community characteristics may influence the types of activities that children do. For example, one popular theory of child labour is the "nimble fingers" theory. That is, children have comparative advantage in certain types of production because of their size. Hence, in areas with a concentration of industries that can exploit "nimble fingers," the demand for child labour will be relatively high. Hence, the wages offered to children should be higher and more children therefore work in the model of Section III. Combined all of these factors suggest ample scope for community attributes to be key determinants of child labour supply.

157. Differences associated with geography in the economic activities of children are evident in a simple rural-urban comparison of what children do by age. In urban areas, children tend to be more involved in market based production activities. As shown in Table 22, most of the child activities are in products that will eventually be sold outside of the household. In contrast, whether the activities of children below the age of 12 affect production outside of the households depends on how advanced markets are in the household's region (see Table 23). Given the large differences in types of activities performed across rural and urban areas, one would expect large differences in child labour between communities.

Table 22. Starting age of work by occupations and children's age (Ho Chi Minh City, Vietnam)

6	7	8	9	10	11	12	13	14	15	16	17
Selling Lottery Tickets											
Peeling Onions (at home)											
Making Match Boxes (at home)											
Weaving Mats and Baskets (at home)											
Scavenging at the Dumpsite											
Making shoes (support workers – local)											
Bobbin Fillers (at weaving enterprises)											
Catching Grasshoppers											
Making Ball-Point Pens (boys)											
Making Lanterns											
Classifying Waste Plastic (at home)											
Making Operating Parts of Lamps											
Recycling Glass											
Making Ball-Point Pens (girls)											
Making Chains											
Silk-Screen Printing											
Making Bag Wheels											
Selling Noodle Soup											
Making Nem Chua (Fermented Pork)											
Making Furniture & Wooden Art Products											
Making Scales											
Recycling Glue											
Making Chalk											
Recycling Plastic (boys)											
Making Shoes (migrant support workers)											
Making Plastic Sandals											
Making Bicycle Tyres											
Sorting/Recycling Plastic (at factories – girls)											
Dyeing Materials											
Catching Locusts											
6	7	8	9	10	11	12	13	14	15	16	17

Source: Save the Children (UK) (1999).

Table 23. Starting age of work by occupations and children's age (Rural North Central Region, Vietnam)

4	5	6	7	8	9	10	11	12	13	14	15 ...
Looking after younger siblings											
Sweep house and yard											
Watch house											
Washes dishes											
Feed chickens											
Collect pig feed											
Catch crabs, shrimp and snails											
Dig up worms for ducks											
Wash clothes											
Cook food for humans											
Cook food for pigs											
Feed pigs											
Fetch fuel wood											
Boil water											
Dry paddy											
Process cassava											
Tend cows and buffalos											
Collect grass											
Fetch water											
Collect cattle manure											
Harvest rice											
Transplant rice											
Weed and irrigate crops											
Plough and harrow fields											
Collect firewood from forest											
Mill and husk paddy											
Wage labour											
Go fishing											
Migrate											
4	5	6	7	8	9	10	11	12	13	14	15 ...

Source: Save the Children (UK) (1997).

158. However, while the types of activities performed by children may differ across regions, it does not necessarily follow that participation rates vary as dramatically. In fact, the data suggest that the “between” community variation in child labour is much smaller than the “within” community variation in child labour. Table 24 decomposes variation in participation in market and household work by difference geographic segments. Almost all of the variation in child labour is within urban-rural areas (greater than 99%), and thus urban and rural are not reported in Table 24.

Table 24. **Between versus Within community variation in child labour in Nepal and Vietnam**

	Nepal 1999		Vietnam 1998	
	House Work	Market Work	House Work	Market Work
Region				
Within Region	98	97	93	91
Between Region	2	3	7	9
Province/District				
Within Districts	92	87	89	88
Between Districts	8	13	11	12
Primary Sampling Unit (PSU)				
Within PSU	85	75	83	78
Between PSU	15	25	17	22

a) Each cell contains the percentage of variation in participation in the indicated work category (column) that is across the indicated variable ("between") and across children within the same grouping ("within").

Sources: Nepal results are from the NLFS (Edmonds, 2002b) and Vietnam results are from the VNLSS98 (Edmonds, 2002a).

159. In both Nepal and Vietnam, there are distinct geographic regions that differ substantially in climate, physical environment, and economic activity. Moreover, there are a number of reasons why markets may not be integrated across geographic regions in both countries. However, region explains little of the variation in household or market work in Vietnam and even less in Nepal. Provinces or districts are important local administrative levels. As with regions, very little of the variation in participation in child labour is between provinces or districts. Most of the variation is within the province or district. The smallest unit of analysis in the two household surveys is the primary sampling unit (PSU). In Nepal, this is the ward, and the PSU is the commune in Vietnam. Within commune (ward) variation in child labour is substantially greater than between commune variation in child labour. Thus, ex-ante, the household attributes explored in the previous section should be much more powerful determinants of child labour. Moreover, there is likely to be substantial correlations within a community in these key household determinants such as living standards. The predictive power of community fixed effects then may overstate the role of community factors, because the community fixed effects are misattributed household factors. Consequently, the data will reveal relatively little support for the "nimble fingers" or community specific theories of child labour supply.

160. To better gauge the significance of between versus within community (PSU) variation in child labour, Table 25 looks at the correlation between child *i*'s participation in child labour and that of other children in the child's community. Thus for each child, the participation rate of other children in the community in household and market work is computed. Table 25 considers the ability of these participation measure to explain the labour supply of child *i*.

Table 25. **Community participation rates and child labour in Nepal and Vietnam**

	House Work	House Work	Market Work	Market Work
	(1)	(2)	(3)	(4)
Nepal 1999				
Household Production Participa	0.735 (0.016)**	0.621 (0.021)**		0.056 (0.014)**
Market Participation. Rate		0.157 (0.015)**	0.869 (0.010)**	0.844 (0.012)**
Observations	18181	18181	18181	18181
R-squared	0.30	0.30	0.31	0.31
Vietnam 1998				
Household Production Participa	0.867 (0.020)**	0.836 (0.023)**		0.027 (0.013)**
Market Participation. Rate		0.082 (0.025)**	0.917 (0.015)**	0.905 (0.016)**
Observations	7018	7018	7071	7071
R-squared	0.35	0.35	0.33	0.33

- a) Each column-country grouping is a separate regression of an indicator for child participation in the indicated (column) work category on age, gender, and age*gender effects and the indicated measure of community participation in child labour (a child's own participation rate is excluded from calculating the community rate). Sample is restricted to children with co-resident siblings between the ages of 6 and 15. * significant at 10%; ** significant at 5%. Standard errors are in parenthesis.

Sources: Nepal results are from the NLFS (Edmonds, 2002b) and Vietnam results are from the VNLSS98 (Edmonds, 2002a).

161. Table 25 indicates a robust statistical correlation between community participation rates and child participation rates. Moreover, the correlations are strongest in the same-type of activities. Community house work participation rates better predict a child's participation in house work than they do the child's participation in market work. Moreover, the magnitude of the within community correlations in participation rates and a child's participation rate are surprisingly similar in Nepal and Vietnam. A 10 percentage point increase in the community's participation in market work in Nepal, raises the probability that a child participates in market work by 9 percentage points. Likewise, a 10 percentage point increase in participation in market work in Vietnam also raises the probability that a child participates in market work by 9 percentage points.

162. However, the most striking aspect of the regression results from Table 25 is how small the correlations are relative to that observed within the household in Table 12. The mean participation rate in market work in Vietnam is 0.15. A doubling of the community participation rate from 0.15 to 0.30 implies a 0.15 increase in the probability that a child is observed working in market work. In contrast, having a sibling that works in market work raises the probability that a child works in market work by 0.33. Hence, a doubling of the community participation rate is associated with approximately half the effect of having a sibling working. This illustrates how important within household variation is relative to between household variation in the same community.

163. Even if household attributes are substantially more important in explaining child labour participation in Nepal and Vietnam, the variation in child labour that is across communities (around 25%) may be of substantial policy importance. One obvious problem in exploring this variation is that there is likely to be substantial within community correlation in household attributes such as poverty, household composition, parental attitudes and social norms which is captured by the community variable. Nevertheless, by examining specific community variables, it may be possible to better understand the economic and policy significance of this relative insignificance of community attributes in the determination of child labour supply.

6.1 Industry

164. Much of the policy focus on child labour worries about how the demand for child labour in certain industries increases child labour. This obviously begs the question of whether the presence of certain industries in a community increases child labour. However, a precursor to answering this question is to understand the industry distribution of child labour. In all three countries considered in this study, almost all employment (including wage employment) is in agriculture. Hence, children employed in the industries other than agriculture that have been the target of much existing anti-child labour policy, are a tiny fraction of all working children.

165. The pervasiveness of agricultural employment in Nepal is evident in Table 26. Most children working in market work are employed in agriculture (87%). The largest employer of children outside of agriculture is the private household. Manufacturing accounts only for 1% of child labour. Thus, all of the policy attention on manufacturing misses most child labour.

Table 26. **Employment by industry for currently employed children 5-14, by gender and schooling status in Nepal, 1999**

In thousands

	Total			Whether currently attending school					
				Yes			No		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
	1982	911	1072	1263	694	569	719	216	503
Agriculture, hunting and forestry	1725	804	921	1094	620	474	631	184	448
Manufacturing	26	11	16	12	4	8	14	6	8
Construction	10	7	3	3	1	2	7	6	1
Wholesale & retail trade	29	17	12	24	15	9	5	2	3
Hotels & restaurants	16	9	7	11	4	7	5	4	1
Private households with employed persons	165	58	107	114	47	68	51	11	40
All other categories	10	5	5	4	2	2	6	3	2

Source: Central Bureau of Statistics (2000) using the NLFS.

166. Two industries have received a great deal of special attention in Nepal: carpets and small-scale mining. Concerning the first, based on inspections of 23 carpet factories, the Asian-American Free Labour Initiative (1994) claims that children are 9% of the carpet industry's workforce. A 1995 Ministry of Labour study (reported in ILO, 2001) found that approximately 3% of carpet employees are children. In factories that make carpets for the export market, only 0.2% of employees are children. Moreover, Table 26 suggests that these carpet-weaving children are a tiny fraction of working children. Child labour in small-scale mining of coal, quartz, and magnesite has also received substantial recent attention. Most of the child labourers observed in a joint UNICEF/ILO study were girls carrying coal (ILO, 2001). No estimates of the scale of child labour in mining are available. However, mining would fall under "other" in Table 26. Hence, this appears to be a relatively small fraction of children.

167. The importance of agriculture in child labour in Nepal is not an anomaly for the countries considered here. Table 27 looks at child labour by industry in Vietnam grouping children into three categories: child labour, marginal child worker, and not participating in economic activities. In classifying a working child into each of these categories, the government makes subjective decisions about whether or not an activity is "harmful" for the child. The government's definition of child labour is a child participating in activities that would violate ILO Convention 182. Operationally, this means that a child labourer is: a) a person below 10 years of age that participates in market work and does not attend school;

b) a person 11 to 14 working more than 24 hours a week and not attending school; c) a person 15 to 17 working more than 42 hours a week and not having completed primary school; and, d) a person below age 18 working in dangerous work or being forced to work in exploitative or abusive work. Other children that participate in market work are defined as marginal child workers (MOLISA, 1999).

168. In the three categories of Table 27, most children workers are found in agriculture. Only within wage work, there is some greater significance of other industries, especially bamboo processing. Employment outside agriculture was greater in wage work than in other types of work.

Table 27. **Child labour by industry in Vietnam, 1998**

In percentage

	Child labour in wage work	Child labour in own household	Marginal worker
Agriculture	75.0	93.8	96.8
Agriculture	65.0	92.0	96.2
Forestry	2.5	0.2	..
Fishery	7.5	1.6	0.6
Industry	15.0	3.1	1.8
Metals	2.5	..	..
Rock and Sand	..	0.1	0.9
Food & Beverage	2.5	0.5	0.2
Textiles	..	0.7	0.2
Leather	2.5	..	..
Bamboo	5.0	1.5	0.5
Metals	2.5	0.2	..
Construction	2.5	0.2	..
Transportation	2.5	2.5	1.3
In home personal services	2.5	0.1	..
Other Services	2.5	0.2	0.1

Source: Ministry of Labour, Invalids, and Social Affairs (MOLISA, 1999) based on the CLSSI.

169. In Pakistan, the distribution of market working children across industries is not available, because the government focuses on wage work only. Hence, Pakistani official statistics should reveal substantially less employment in agriculture even if agriculture's importance matches that seen in both Vietnam and Nepal. This bias may permeate Table 28.

Table 28. **Distribution of wage working children 5-14 years old by major industry division and gender, Pakistan 1996^a**

In percentage

	All Pakistan			Rural Pakistan			Urban Pakistan		
	All	Male	Female	All	Male	Female	All	Male	Female
Agriculture, forestry, hunting and fishing	67	63	77	74	71	81	10	9	14
Mining and quarrying	..	..	..	..	..	..	..	..	..
Manufacturing	11	10	12	8	8	10	31	29	46
Electricity, gas and water	0	0	..	0	0	..	..	..	..
Construction	2	2	0	2	2	0	3	4	1
Wholesale and retail trade and restaurants and hotels	9	12	1	7	9	1	23	26	4
Transport storage and communication	4	5	0	3	4	0	13	14	1
Financing, insurance, real estate and business services	0	0	..	0	0	..	0	0	..
Community, social and personal services	8	7	10	7	6	8	19	17	34

a) Data are for children who have worked in the last seven days.

Source: Federal Bureau of Statistics (2001) using the PCLS.

170. As shown in Table 28, most Pakistani children that work for wages are in agriculture. The second largest industry after agriculture is manufacturing. Not surprisingly, agriculture is more prevalent in rural areas whereas manufacturing dominates urban employment. Also prominent in urban areas is the employment of boys in wholesale and retail trade as well as in transportation. Wage working girls in urban areas also participate heavily in the service industry. Thus, the problem of child labour in manufacturing is primarily an urban phenomenon. Moreover, it is only one component of the type of industry that employed urban children work in.

171. Within manufacturing, the carpet weaving industry probably draws the most public attention in Pakistan. The U.S. State Department *Country Reports on Human Rights Practices (1994)* claims that carpet weaving is the only major export industry that regularly employs child labour. A 1992 UNICEF case study from the Punjab province estimated that 90% of the one million workers in carpet weaving are children (many of whom start before age 10 – UNICEF, 1992).

172. Estimates of total employment in carpet weaving vary widely. Hence, estimates of child labour in carpet weaving also vary widely. In part, this is a function of how the carpet weaving industry in Pakistan is structured. Carpet weaving is largely in the Punjab and Sind provinces, and most carpet weaving is performed on looms in individual homes rather than in a factory with a large volume of looms. Of course, this means there is no way to reconcile estimates of 900 000 children working in carpet weaving with the Federal Bureau of Statistics official child labour numbers. Many children could be working in carpet weaving within their own household without pay. These children would not be counted as labourers in official statistics.

173. Because of the cottage nature of the carpet industry, regulation of child labour within the carpet weaving industry is very difficult. Even large manufacturers subcontract out weaving to “thekedars” that control looms set up in individual households. Labour regulations do not apply to employers with fewer than 10 workers, and there is some anecdotal evidence that carpet manufacturers structure production with

this in mind (UNICEF, 1991). The peshgi system also appears rampant in the carpet industry even though the 1992 Bonded Labour Abolition Act prohibits it (Asian-American Free Labour Institute, 1994). Among paid employees, a 1992 UNICEF study reports that children that work for pay in the carpet weaving industry are typically paid based on the number of knots per square foot and are only paid after an apprenticeship period. Working hours were generally long (9 hours per day) in factories but even longer when the child worked on looms within its own household (UNICEF, 1992).

174. The involvement of children in the production of sporting goods in Pakistan has recently garnered a great deal of attention. Approximately 70% of all soccer balls sold worldwide is produced in the Sialkot district of Punjab (Poos, 1999). As with carpet weaving, this soccer ball production is a cottage industry; children stitch soccer balls for export in family units. Save the Children UK estimates that children are approximately 25% of the labour force in soccer ball production (1997), and the ILO estimates that this corresponds to approximately 10 000 children (1998).

175. While most working children work in agriculture in all three countries, there may be scope for the presence of other types of industries in a community to affect child labour. The Vietnamese dataset collects data on the presence of certain industries in a community. Hence it is possible to consider the association between the presence of a given industry and child labour supply. Moreover, because of the panel nature of the dataset in Vietnam, it is possible to also consider whether changes in the presence of industries are associated with increases in child labour.

176. Table 29 contains the results of this analysis. The first three columns result from a regression of whether a child works in the indicated type of work (column) against a vector of indicators for the presence of the indicated industry (row) in the community. Each community may have multiple industries. Thus, the interpretation of each regression coefficient is the association between the presence of the indicated industry and child participation in the indicated type of work. For example, in column 1, children are 16 percentage points less likely to work in household work in a community with agriculture than in a community without agriculture.

Table 29. Industry prevalence and child labour in Vietnam^a

	Vietnam 1998			Vietnam - Panel		
	House Work	Market Work	Wage Work	House Work	Market Work	Wage Work
Farming and Forestry	-0.164 (0.071)**	-0.06 (0.071)	-0.019 (0.011)*	0.001 (0.045)	0.05 (0.043)	-0.003 (0.008)
Aquatics	-0.125 (0.039)**	-0.061 (0.036)*	0.001 (0.005)	-0.092 (0.034)**	-0.034 (0.025)	-0.004 (0.004)
Manufacturing	0.051 (0.040)	-0.008 (0.054)	0.001 (0.007)	0.019 (0.040)	-0.024 (0.044)	-0.008 (0.006)
Handicrafts	-0.01 (0.040)	-0.016 (0.041)	-0.004 (0.004)	0.08 (0.048)*	-0.051 (0.026)*	0.007 (0.005)
Trade and Commerce	-0.034 (0.027)	-0.07 (0.027)**	-0.001 (0.004)	0.028 (0.023)	-0.009 (0.018)	-0.002 (0.003)
Services	0.018 (0.029)	-0.034 (0.031)	0.006 (0.005)	-0.013 (0.028)	0.004 (0.022)	-0.001 (0.006)
Commune Fixed Effects	No	No	No	Yes	Yes	Yes
Observations	6110	6160	6160	10084	10131	10131
R-squared	0.31	0.25	0.04	0.29	0.36	0.07

a) All regressions include a constant and age*gender effects. Columns 4-6 include a year dummy and commune fixed effects. Standard errors in columns 1-3 corrected for clustered sample design. Robust standard errors in columns 4-6 reflect psu-year clustering. * significant at 10%; ** significant at 5%.

Source: Edmonds (2002a) using the VNLSS 1993 & 1998.

177. Children are less likely to work in household work in the presence of agriculture and aquatic industries. They are also slightly less likely to work in household work in the presence of handicrafts or trade and commerce. With manufacturing or services in the community, child labour in household work is slightly higher, but the data do not reject the hypothesis that there is no association between child labour in household work and the presence of manufacturing or service industries in the community. As with household work, the presence of agriculture lowers the probability of market work and wage work. In fact, only manufacturing, aquatics, and services are positively correlated with wage work.

178. Interpreting these regressions as causal effects is, of course, impossible. They merely measure the association between the presence of these industries and child labour in the community. All sorts of community characteristics are associated with the presence of industries in the community, and they may easily be correlated with child labour. Columns 4-6 control for time invariant community characteristics with the inclusion of commune fixed effects. Thus, factors like the accessibility of a community are controlled for. By including the commune fixed effects, the coefficients on all of the industry presence indicators are identified for communities that change the presence of industries in the community between 1993 and 1998.

179. Communities that experience increases in handicrafts observe declines in child labour in market work and increases of child labour in household production. This may reflect children substituting for parents who participate in handicrafts. Children leave market work to fill in for parents who are occupied in local handicrafts industry. Similarly, the presence of manufacturing and trade and commerce increases child work in household production and lowers child participation in market work. Communities that gain aquatics industries observe large declines in household work as well as declines in market work. Hence, there is little evidence within the data of systematically higher levels of child labour in communities with certain types of industries. In fact, the addition of industries where child labour is often feared most (manufacturing, handicrafts) seems to be associated with declines in child labour.

6.2 Employers

180. Some child labour advocates might respond to the above results on manufacturing by arguing that the type of employer in the community affects how child labour is influenced by the presence of manufacturing. The 1998 Vietnamese survey collects data on the ownership of factories in the community. A factory is not constrained to be considered a manufacturing industry, although in most cases they are the same. Table 30 contains the result of regressing an indicator of child participation in a given category of child labour against an indicator for the presence of a factory in the community and several indicators for who owns the factory (when available). Thus the net association between having a specific type of factory in a community is the sum of the factory indicator coefficient and the coefficient on the particular type of factory. For example, having a foreign operated factory in a community lowers the probability that a child works in the household by 8 tenths of a percent.

Table 30. **Factory presence, ownership, and child labour in Vietnam, 1998^a**

	House Work	Market Work	Work for Wage
Factory in Community	0.008 (0.041)	0.018 (0.040)	0.000 (0.006)
Factories are:			
State Operated	-0.024 (0.038)	-0.062 (0.036)*	-0.004 (0.005)
Collective Operated	0.033 (0.043)	0.009 (0.039)	-0.009 (0.005)*
Foreign Operated	-0.016 (0.039)	-0.017 (0.039)	0.009 (0.008)
Private with more than 20 employees	-0.038 (0.036)	-0.071 (0.030)**	-0.003 (0.006)
Private with less than 20 employees	0.079 (0.044)*	0.002 (0.024)	-0.005 (0.006)
Other	0.08 (0.065)	-0.001 (0.040)	0.018 (0.012)
Observations	6110	6160	6160
R-squared	0.31	0.25	0.04

a) Regressions include a constant as well as age*gender and region effects. Robust standard errors corrected to reflect clustered sample design. * significant at 10%; ** significant at 5%.

Source: Edmonds (2002a) using the VNLSS98.

181. The presence of state operated or large private factories lowers the probability that a child works in household, market work, and wage work. Foreign operated firms are associated with less household work and no difference in market work. Collective operated factories are associated with increased household work and market work as are small private factories. These findings obviously do not reflect a causal effect of factories of a certain type on child labour. The location of factories presumably depends on community attributes such as its accessibility, the education and productive capacity of the local labour pool, among others. Nevertheless, the evidence from Vietnam is not suggestive of a strong link between the presence of foreign or large private factories and child labour.

6.3 Other Attributes

182. Aside from industry presence and the type of employers in manufacturing, community attributes such as infrastructure and accessibility may be important community determinants of child labour. Again, the richness of the Vietnam data allows the exploration of these issues. Table 31 contains the results of regressing indicators for participation in the given type of child labour against various types of infrastructure improvements and community accessibility characteristics. For this analysis, Table 31 uses the Vietnamese panel with household fixed effects that control for time invariant household and community characteristics as well as year effects. Table 31 inter-acts community accessibility measures with the year effect in order to explore whether the observed decline in child labour between 1993 and 1998 varies with community characteristics. It also inter-acts year effects with indicators for improvement in local infrastructure such as roads, irrigation, drinking water, schools, or electricity. In addition to infrastructure and accessibility, a measure of adult participation rate in wage work within the community is included. This captures the extent of wage employment in the adult labour market and thereby may be strongly associated with the activities of children. Adult participation rates appear relatively independent of other community characteristics, because inclusion or exclusion of them from the regressions has virtually no effect on the coefficients on infrastructure and accessibility variables.

Table 31. **Infrastructure, accessibility, and child labour in Vietnam, 1992-1998**

	House Work (1)	Market Work (2)	Wage Work (3)	Wage Work (4)
Year 1998	-0.081 (0.040)**	-0.165 (0.039)**	-0.01 (0.005)*	-0.007 (0.005)
Year Interactions:				
Road accessible	-0.046 (0.050)	0.061 (0.033)*	-0.006 (0.009)	-0.005 (0.010)
Year round transportation	-0.01 (0.046)	-0.042 (0.039)	0.006 (0.008)	0.007 (0.009)
Roads improved	0.068 (0.033)**	0.013 (0.028)	-0.009 (0.005)*	-0.009 (0.005)*
Irrigation improved	-0.095 (0.034)**	0.046 (0.027)*	0.007 (0.005)	0.006 (0.005)
Drinking water delivery improved	-0.057 (0.060)	-0.037 (0.034)	0.011 (0.007)	0.009 (0.007)
Schools built or improved	0.008 (0.035)	0.009 (0.028)	-0.003 (0.005)	-0.004 (0.005)
Electricity built or improved	-0.056 (0.031)*	-0.034 (0.034)	-0.004 (0.005)	-0.005 (0.005)
Community adult participation rate in wage work	0.234 (0.163)	-0.015 (0.180)	0.102 (0.045)**	0.051 (0.051)
Household adult participation rate in wage work				0.05 (0.012)**
Observations	9850	9894	9894	9860
R-squared	0.55	0.59	0.41	0.41

a) All regressions include a constant, household fixed effect, age*gender dummies, and season indicators. * significant at 10%.
 ** Significant at 5%. Robust standard errors are corrected for psu-year clustering.

Source: Edmonds (2002a) using the VNLSS 1993 and 1998.

183. Household production declines more in communities with road accessibility and year round transportation access. However, communities with road improvements between 1993 and 1998 have smaller declines in household work. In contrast, communities with irrigation or electricity improvements experience larger declines in household work participation. Participation in market work declines by less in communities that are road accessible or that experience irrigation improvements. However, declines in market work are larger for communities with year round transportation access, improvements in drinking water, and improvements in electrification. Wage work does not appear to bear a substantive (in magnitude) association with any of the observed infrastructure improvements or accessibility attributes.

184. Interestingly, adult participation rates in wage work do not appear to have significant explanatory power for participation in household or market work. With the household fixed effects, the coefficient on the adult participation variables are identified off changes in participation rates. Communities that increase their adult participation rates in wage work experience increases in household work and declines in market work. This is consistent with the view that some household work of children may be filling in for parents that increase their participation in market work. Higher levels of community participation in wage work, raises the probability that a child works for wages. However, when column 4 includes the household's adult participation rate in wage work, it is not possible to reject the hypothesis that community participation rates have no effect on child labour supply. Only within household participation rates predict child participation rates. This is consistent with the main finding throughout this paper: household specific attributes, rather than community or child attributes, appear to be critical in determining child labour supply.

VII. CHILD LABOUR AND GOVERNMENT POLICY

185. The empirical results from the previous sections do not highlight one smoking gun that should be targeted to ameliorate child labour. Employment opportunities available to children appear important as is the household's labour demand. Household living standards appear to affect how important these factors are. Community attributes seem relatively unimportant in determining child labour supply, especially relative to the importance of the household's needs. There is also some role for cultural factors in affecting child labour supply, especially with regards to gender differences. The purpose of the present section of the study is to consider existing child labour policy in Nepal, Pakistan, and Vietnam in light of these empirical findings on why children work.

186. Government policy in all three countries focuses on prohibiting the employment of children. This focus on the prohibition of child labour appears misplaced given the empirical results above. Moreover, this emphasize on prohibiting child labour constrains governments and civil society workers from exploring ways to improve the working environments of children and to make work and schooling more compatible.

187. While poverty is a key determinant of child labour, policy largely attempts to curtail the demand for child labour. That is, poor children are forced to work for their survival, and policy aims to prevent them from doing so. When the type of work being performed by children is hazardous or horrible, this labour demand approach may be justified, but it does not appear to be complimented with efforts to help households avoid the need to send children to work. In Nepal, international and civil society organizations have recognized the importance of this, more so than in the other two countries. Additional household income opportunities are coupled with payments for households that send their children to school.

188. Outside of the limited work on education subsidies in Nepal, the other countries have done little to address why children work. Moreover, because of their focus on prohibiting child labour, policy has not focused on facilitating flexibility in employment so as to enable children attend school while they work. Some non-governmental groups in Pakistan have experimented with this to great success, but there has been nothing in the way of formal policy initiatives. In fact, Vietnam appears posed to move towards longer school days, making work and schooling even less compatible.

189. Moreover, policy aimed at labour demand tends to focus on specific industries that are geographically concentrated with a relatively small share of working children. This concentration could be justified if the conditions in these industries are particularly hazardous to child development, but the consequence of this specific, labour demand driven focus appears to be to ignore the majority of working children in a country.

7.1 Command Measures

190. The establishment of command measures that restrict the types of activities in which children can work or that abolish child labour outright has been a priority for international organizations that work on child labour issues. The domestic legislation of all three countries considered here reflects this emphasis.

International Labour Standards

191. There are two main international conventions on child labour supply advocated by the International Labour Organization (ILO). First, Convention 138 establishes a minimum age for employment. Signatories on this 1973 convention agree to “to pursue a national policy designed to ensure the effective abolition of child labour and to raise progressively the minimum age for admission to employment or work to a level consistent with the fullest physical and mental development of young persons” (Article 1). Convention 138 specifies that the minimum age for employment should not be less than 15.

192. Second, Convention 182 attacks the worst forms of child labour. It defines a child as all persons under the age of eighteen. Signatories on this 1999 convention commit to “take immediate and effective measures to secure the prohibition and elimination of the worst forms of child labour as a matter of urgency” (Article 1). The convention defines what it means by worst forms of child labour: a) all forms of slavery or practices similar to slavery, such as the sale and trafficking of children, debt bondage and serfdom and forced or compulsory labour, including forced or compulsory recruitment of children for use in armed conflict; b) the use, procuring or offering of a child for prostitution, for the production of pornography or for pornographic performances; c) the use, procuring or offering of a child for illicit activities, in particular for the production and trafficking of drugs as defined in the relevant international treaties; d) work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children” (Article 3).

193. In addition to these two conventions, the ILO also encourages poor countries to sign a memorandum of understanding with the ILO to take active steps to participate in the ILO’s International Programme for the Elimination of Child Labour (IPEC). Joining IPEC entails the creation of a national steering committee that develops a national plan of action for the elimination of child labour in the country.

194. There is considerable international pressure for low-income countries to sign Convention 138 and especially Convention 182. In November 2001, a meeting of European finance ministers committed to employing trade sanctions against countries that fail to sign and enforce international labour standards on child labour. In the U.S., there are three pieces of legislation designed to coerce countries into adopting and enforcing labour standards towards child labour. First, the 1997 Sanders Amendment to the Trade Act of 1930 prohibits the importation of products made with “forced or indentured child labour.” Second, the Generalized System of Preferences authorizes over 4 000 products from 140 developing countries (including Nepal, Pakistan, and most recently Vietnam) to enter the U.S. duty-free. However, these preferences can be removed from countries that fail to enforce international labour standards. Third, the Trade and Development Act of 2000 denies trade preferences to countries that fail to enforce Convention 182 explicitly. However, the preferences under the Trade and Development Act have not been extended at present to Nepal, Pakistan, or Vietnam.

195. Nepal, Pakistan, and Vietnam have all signed Convention 182 on the worst forms of child labour. (Vietnam in November 2000, Pakistan in November 2001, and Nepal in January 2002). Of these three nations only Nepal has signed Convention 138 on the minimum age. However, as discussed below, Nepal domestic legislation on child labour contradicts Convention 138 and it is not at present clear how this contradiction will be resolved.

196. Both Nepal and Pakistan have signed memorandums of understanding with IPEC, and Nepal has recently become one of the three nation’s participation in IPEC’s Time-Bound Programme. The Time-Bound Programme outlines a comprehensive plan of action to eliminate the worst forms of child labour. In Nepal the implementation of this programme has just begun and it will target approximately 120 000 children in 35 districts with a proposed budget around USD 13 million. Vietnam is currently

developing its own (independent) guidelines for eliminating the worst forms of child labour (MOLISA, 2001).

197. At present, there does not appear to be any evidence that signing Conventions 182 or 138 has any effect on child labour. It is possible that in the future the threat of trade sanctions or the denial of trade preferences may take actions directly to enforce the terms of the conventions. However, as is clear in the next section, passing domestic legislation supporting international labour standards by itself does not eliminate or necessarily affect child labour. Moreover, in many ways, these conventions limit the international discussion on how to address the problem of child labour. For example, a signatory of Convention 138 agrees to prohibit any children under the age of fifteen from working. In so agreeing, a signatory cannot explore ways to ameliorate the negative consequences of child labour. Discussions are eliminated of ways to make schooling more compatible with work. Similarly, if enforced, these conventions do nothing about the reasons why children work. Thereby, they may simply force child labour into less visible, and perhaps more dangerous, or less lucrative arenas.

Domestic Legislation

198. All three countries have national legal prohibitions of child labour in place. However, enforcement of these laws appears to be limited as shown by the empirical work on child labour in the preceding sections.

Nepal

199. The 1990 Constitution of Nepal contains a provision to protect children and to guarantee them certain fundamental rights. It directs the state to establish and protect these rights and to make gradual arrangements for free education. The Nepal Labour Act 2048 (1991) is the first piece of post-constitution legislation directed at child labour. In the Act a 'child' is a person who has not attained the age of 14 years. The Act establishes that "no child shall be engaged in work of any Enterprise".

200. The Children's Act of 1992 also addresses child labour. While the National Labour Act made child work in an "enterprise" illegal, the Children's Act makes employment of children below the age of 14 as "labourers" illegal. The Children's Act has not been amended to conform to Convention 138 that specifies age 15 instead of age 14. Children 14-16 are not allowed to work at night. No child below the age of 16 can be made to work against his/her will. The Children's Act also prohibits the employment of children below age 16 in hazardous work or in "immoral professions". Efforts have not been made to reconcile this with Convention 182's prohibition of persons under 18 in hazardous work.

201. More recently, Nepal has passed several acts designed to target specific forms of child labour. The Bonded Labour Act prohibits the Kamaiya system and threatens sanctions against employers with bonded labourers. The Traffic in Human Beings Act prohibits trafficking in both children and adults. The general mismatch between Nepal's legislation and its signatures on international conventions is of relatively minor significance given the lack of enforcement of domestic laws on child labour. At present none of the child labour legislation described above contains rules, procedures, or substantive funding for enforcement. In most cases, it is not clear what ministries are responsible for enforcing the legislation. Moreover, according to an ILO study, only a handful of sanctions have ever been attempted against employers and there is little awareness of the legislation at the ministerial or public level (ILO, 2001). Likewise, legal action through Nepal's court system is generally infeasible because of its notorious delays and difficulties.

202. Perhaps most promising for future enforcement of child labour laws is the Local Self-Governance Act that transfers substantive powers to local Village Development Committees. These local governments

may be able to work with international organizations and non-governmental organizations to monitor and enforce child labour laws. ILO (2001) documents several community level initiatives that have been effective in mobilizing local police and judges in enforcing child labour laws.

Pakistan

203. In Pakistani law, a “child” is a person aged 14 or younger. The 1973 constitution of Pakistan establishes 14 as the legal minimum age for employment in shops, commerce, industry, or at sea. 15 is the legal minimum for work in mines or in railways. In the early 1990s, the government began to take steps to address labour demand in some of the worst forms of child labour.

204. Two main pieces of legislation in the early 1990s were designed to address some of the worst forms of child labour. The Employment of Children Act of 1991 prohibits the use of child labour in hazardous occupations and environments. Children are not allowed to work overtime or at night. Moreover, the employment of children is prohibited in the following industries: carpet making; cement manufacturing; cigarette making; soap manufacture; cloth dyeing; garment manufacture; shoe-making; tanning and leather; printing, and weaving; manufacturing of matches, explosives, and fireworks; mica cutting and splitting; precious stones; paper; shellac manufacture; glass; tanning; metal and wood handicrafts; furniture; wood cleaning; and fishing.

205. Unlike the Nepali legislation, the Employment of Children Act specifies penalties for employers that violate the act. An employer using a child in a prohibited occupation may be imprisoned for up to one year and receive a 20 000 rupee (approximately USD 300) fine. The second main piece of legislation is the Bonded Labour (Abolition) Act of 1992. It abolished and made illegal indentured servitude and the peshgi system of bonded labour in Pakistan. Moreover, the act cancelled all debt that bonded labourers owed their employers. Officially, the Department of Labour has labour inspectors that enforce these laws. A US Department of Labor report (1994) found little evidence of monitoring or enforcing of either of these acts.

206. More recently, the government of Pakistan has developed a national plan of action to eliminate child labour (NCCWD, 2001). The plan calls for making primary school education universal and for “rehabilitating” working children through education and job training. The concrete steps within the act seem to be largely directed towards helping facilitate many of the actions that international and non-governmental organizations have been undertaking to curtail child labour.

207. As with Nepal, enforcement of domestic legislation has historically been lacking in Pakistan. However, recently there appears to have been an increase (at least in Punjab Province) of enforcement actions (U.S. Department of Labor, 2002). Inspections in Punjab rose fivefold between 1998 and 1999. Out of 120 000 inspections, more than 3 000 employers were fined for violation of the Employment of Children Act. The average fine was 158 rupees (approximately USD 2.50).

208. Like Nepal, Pakistan has experimented with local level enforcement of child labour laws. The Bonded Labour Act empowered “Vigilance Committees” to inform the labour department of violations of the Bonded Labour Act. However, a Department of Labour Study from 2000 reports little activity or effort coming from these Vigilance Committees (Department of Labour, 2000).

Vietnam

209. Vietnam has a history of aggressive, anti-child labour legislation. Vietnam was the first country in Asia, to sign the International Convention on the Rights of the Child in 1990, and there are a variety of legislative and regulatory measures in place. Article 65 of the 1992 Constitution of the Socialist Republic of Vietnam defines a child as a person under the age of 18. Articles 119-122 of the 1994 Labour Code

specify conditions in which children age 15-18 may work legally. By law, children 15-18 are entitled to the same wage as adult in the same task. The Labour Code imposes three main restrictions on the employment of children 15-18. First, they may not work more than 7 hours per day, 42 hours per week. Second, they may not participate in dangerous activities. Third, participation in abusive or exploitative work is prohibited.

210. The Ministry of Labour, Invalids, and Social Affairs (MOLISA) enacted administrative guidelines in 1999 to describe what types of activities children under age 15 may participate (Circular No. 21/1999/TT-BLDTBXH). Children under 12 may not work and children aged 12-14 may not work more than 4 hours per day or 24 hours per week. Employers need written consent of the child's parents and are obliged to ensure that the child 12-14 receives schooling.

211. There is little evidence on the enforcement of these laws in Vietnam. MOLISA claims that the lack of evidence on enforcement reflects the absence of child labour, and hence the need for enforcement. In light of the discussion in previous sections of this paper, it seems likely that other factors may be in play. Obviously though, an inability to find information about the enforcement of labour standards does not necessarily imply an enforcement problem.

Compulsory Schooling Laws

212. All of the domestic legislation above focuses on children employed in wage work or in bondage. However, most children work within their household where labour regulations do not apply. Even if legislation applied to own-household employment, enforcement would be impossible. Thus, many countries complement legislation against child labour with compulsory schooling legislation.

213. Compulsory schooling laws have two advantages relative to legislation against child labour. First, there is little ambiguity in school attendance. While it may difficult to establish if a child is working or how much it is working, it is relatively transparent if the child attends school. Second, one of the reasons to be concerned about child labour is because of its effect on schooling. By legislating schooling, it may be possible to attenuate the negative consequences of child labour without depriving households of the income that depend on from working children.

214. Of the three countries considered here, only Vietnam has compulsory schooling. In 1991, the government introduced the Law on the Universalisation of Education and the 1992 Constitution asserts that primary education is both free and compulsory to all children. Schooling is not compulsory in Nepal, but the constitution specifies that education be free and available for all children between the ages of 6 and 12.

215. In Pakistan, two provinces have compulsory education laws. In December 1994, Punjab Province made primary education compulsory throughout the province. The North-West Frontier Province passed compulsory primary education in 1996. Unlike Vietnam and Nepal, there is no legislation in Pakistan requiring the primary education be free to all.

216. In reality, legislation that requires primary school education to be free does not make schooling costless. Beyond tuition, households face uniform, supplies, books, and transportation costs. Nepal has attempted to mitigate the ancillary costs by making books free through grade three. But in Vietnam, the evidence suggests that the real costs of primary school education have been increasing in the 1990s (Government of Vietnam – Donor Working Group, 2000). Moreover, the opportunity cost of time spent in school may be the most important cost of schooling, and there is little scope for changes in tuition fees to influence this.

217. Although violations of compulsory schooling laws may be more observable than violations of employment laws, enforcement may be even more difficult. Laws against child labour sanction employers.

To the extent that they affect employment, they also sanction parents and children, but this is not evident in the act of sanctioning. However, enforcing compulsory schooling laws would directly affect children and their parents. If children are not attending school because of work and if work is because of poverty, it seems likely that there would be little appetite for sanction households, because they are poor. Perhaps for this reason, the compulsory schooling laws in Vietnam do not contain any sanctions for violators.

7.2 Incentive Measures

218. Policy towards child labour in all three countries (and in most of the world) focuses on these command measures against child labour. Thus far, there is little evidence of any effect of these command measures themselves on child labour. If anything, these laws prohibiting child labour may restrict discussion and debate of incentive measures to influence child labour. In much of Latin American, incentive based policies to encourage schooling and discourage child labour have recently become popular. However, the experience in Asia is more limited. Nevertheless, there are some promising signs for the future.

Financial Incentives

219. A number of countries have experimented with financial incentives for poor households to keep their children in school. Incentives take several forms. Some programmes such as the *Merenda Escolar* Programme in Brazil provide breakfast and lunch to students. This type of programme benefits the household only in that it alleviates the need to feed the child, but it has the added benefit of potentially improving the nutritional intake of students. School feeding programmes are in place in a diverse array of countries including Egypt, Mexico, and South Africa.

220. However, school feeding programmes likely only benefit children that have a low opportunity cost of time spent in schooling. One of the reasons for child labour discussed in Section III is that the return to spent out of school is relatively high. It seems unlikely that the low financial value of a lunch would be enough to alter the household's perception of the return to school substantively.

221. More recently, several governments have enacted programmes that make cash or in-kind transfers conditional on school attendance. For example, PROGRESA in Mexico pays a bimonthly cash stipend to families that maintain an 85% school attendance record. Evidence in Schultz (2001) suggests approximately a 10% increase in attendance with PROGRESA. In Bangladesh, a Food-for-Education Programme provides monthly food rations to families that send their children to primary school. Approximately 2.2 million children participate, and Ravallion and Wodon (2000) find that the Food-for-Education Programme increases schooling with modest effects on child labour.

222. In Nepal, the World Food Programme recently launched the Girls Education Initiative. It provides a midday snack to primary school students and three litters of cooking oil per month for mothers that send their daughters to primary school. Unfortunately, financial incentive programmes are expensive and therefore relatively rare in most low-income countries. Moreover, donors and bureaucrats are often averse to transferring cash directly to recipients because of concerns about corruption or about how recipients spend the money.

223. A novel solution to this corruption problem is to transfer something less easily co-opted than cash. In the Goat-to-School Programme in Brazil, children that attend school are given goats and training on how to tend and rear goats. Beneficiary households are directed to use the milk to feed their children and to repay the programme in goats without interest. Thus, this programme provides the household with an asset that yields an income flow, ameliorating the concerns about how cash transfers are spent. Moreover, the goat yields a flow of income, in part replacing income that the child would have provided by

working. In addition, the children tend the goat, contributing resources to the household. The work associated with the goat is flexible and not so difficult that the child is too tired for schoolwork.

224. This particular Goat-to-School Programme is small in scale and has not been carefully evaluated in any easily identified research. Nevertheless, it illustrates a potential way to create financial incentives for schooling that are relatively inexpensive and address some of the concerns about cash transfers. It also illustrates how a policy approach focused on banning child labour can constrain creative solutions to problems associated with child labour. In this case, far from eliminating child labour, the programme redirects it towards activities more compatible with schooling. Of course, it also helps school attendance by replacing income earned by children and by creating an additional return to school. Similarly creative projects may hold hope for the countries considered in this project.

225. Another question regarding financial incentives is whether to direct financial incentives towards school attendance or towards child labourers. After all, if part of the object is to ameliorate child labour, providing incentives for schooling may do nothing for child labour. Schooling incentives may merely make children worse off, because their scarce leisure time now must be spent in school. However, targeting child labourers creates incentive problems. There is always the concern that targeting child labourers may draw more children into child labour. Therefore, targeting based on a good (schooling) seems preferable to targeting based on a bad.

Sector specific programmes

226. Many international and non governmental organizations have focussed their anti-child labour efforts on specific types of employment. This is based on the perception that child labour is uniquely significant in a given industry or that certain kinds of work are unusually hazardous to child well-being. Sector specific programmes are the primary tool for addressing child labour in both Nepal and Pakistan.

227. Sector specific programmes generally have two components. First, they aim to stop children from working in a specific sector. For example, the Rugmark Foundation certifies carpets produced in Nepal and (primarily) Pakistan as being “child free” if the manufacturer does not employ children. If consumers are willing to pay more for child labour free carpeting, or given equal prices, choose child labour free carpeting, then this type of labelling may induce companies to not hire children. Second, sector specific programmes attempt to provide some retraining for displaced child labourers and occasionally replacement income support for the families of the children who have lost their job. For example, in 1998, the Pakistan Carpet Manufacturers and Exporters Association (PCMEA) and the ILO reached an agreement aimed at eliminating child labour in carpet-weaving. The agreement focuses on an area of Punjab Province where estimates suggest that approximately 8 000 children work in carpet weaving. The project has two components. The project withdraws children (physically) from worksites then provides these working children and their families with formal and informal education. Mothers within these families are to be trained in new income generating activities.

228. In a second example, the ILO, UNICEF, and the Sialkot Chamber of Commerce and Industry signed in 1997 what is known as the Atlanta Agreement. The NGOs Save the Children – Pakistan, Bait-ul-Mal, and Bunyad Literacy Community Council also joined the project. The ambitious objective of the Atlanta Agreement was to end child labour in the soccer ball industry in Pakistan within 18 months through a combination of labelling soccer balls as child labour free and cash for schooling. The impact of the Atlanta Agreement is not presently clear (International Labour Rights Fund, 1999).

229. Bonded labourers in Nepal and Pakistan have also received a great deal of sector specific attention. Founded in 1998, the Bonded Labour Liberation Front fought and successfully passed the Bonded Labour Act in 1992 in Pakistan. The Bonded Labour Liberation Front both frees children and

adults from their servitude and also builds schools to enable liberated children to attend school (Silvers, 1996). In Nepal, the government has been substantially more supportive of efforts to liberate and assist bonded labours and their families. The Ministry of Land Reforms and Management has provided approximately USD 900 000 in fiscal years 2000 and 2001 for debt relief, housing, rehabilitation, and training of bonded labourers and their families.

230. Moreover, both Nepal and Pakistan are developing national retraining programmes geared towards rehabilitating displaced child workers. In Nepal, the Swiss Development Cooperation has been active in building a national skills development programme to improve retraining opportunities, and IPEC has been working with the SDC initiatives to both build awareness about child labour and to retrain children who lack skills. In Pakistan, Bait-ul-Mal, the government welfare agency, has opened 33 centres around the country to retrain former worker children. The centres target children in hazardous forms of labour. They provide training and stipends to children and their families. Moreover, graduating students are guaranteed full assistance to continue higher education inside or outside of Pakistan.

231. There is little evidence on the efficacy of the retraining and income generation components of these sector specific programmes. Their main idea is to combine the command approach while either creating incentives for schooling or providing income support, thereby lowering the household's marginal utility of consumption today. Coercing employers to fire existing children appears to be relatively easy. Research is needed on whether this lowers child labour or improves the well-being of children and their families over the near, medium, and long-term. In addition, particularly generous retraining schemes such as that in Pakistan may create incentives for children to enter into hazardous forms of child labour. This issue needs further exploration.

Flexible schedules

232. One of the problems with formal forms of employment is that it often takes place during the same time as school. However, there have been two types of recent efforts to solve this natural conflict between schooling in work. One possibility is to move schooling times around to conform to the work schedule. In general, this approach seems like a good one as many communities also face limited schooling space. Unfortunately, teacher shortages are also a problem and this type of flexible scheduling of schooling might only worsen the problem. A second possibility is to move employment around school. There has been some success among carpet manufacturers in Punjab Province, Pakistan in encouraging employers to let children out for school.

233. Adapting schooling or work schedules to each other seems like an additional way to make the consequences of child labour less bad while recognizing that households with working children are so poor, ending child labour is not an option. At present, Vietnam's school day is sufficiently short (4 hours) that it in effect has this flexibility. Students can easily work substantial hours while attending school full time. Perhaps as a result, Vietnam achieves nearly universal school attendance. Vietnam appears poised to dramatically lengthen the school day. In so doing, it may create new tensions between schooling and work that have not existed in recent history.

Educational Infrastructure

234. The reason why children work in the theoretical framework of Section III is that the return to schooling to the household is below the return to work. There are many reasons why the return to schooling might be low. First, the market might not reward schooling. Second, school quality might be so low that the type of schooling rewarded by the market is unavailable. Third, schooling might be sufficiently inaccessible that the travel costs of schooling eliminate much of its benefit.

235. In Nepal, inadequate schooling infrastructure appears to be a tremendous problem. Its schooling infrastructure is in disrepair. Only 43% of all teachers in Nepal have an education beyond secondary school, and a majority lacks any teacher training. Government, with the help of the Asian Development Bank, has recently begun a nine-year initiative called the Basic and Primary Education Project to recruit new teachers and to provide training to existing training to teachers.

236. In Pakistan, access to schooling seems to be a large problem with relatively few rural children living in proximity to a primary school. This problem is particularly acute for girls. In contrast, most children in Vietnam live near a primary school. However, school quality problems and school costs have been rising as government revenue to finance schools has dissipated with Vietnam's recent reforms.

Labour Replacement

237. Finally, one incentive based programme in Nepal builds on an understanding of why children work. Namely, UNICEF observed that a significant amount of the time of older girls is spent in household production, especially the care of younger siblings. Hence, UNICEF has been experimenting with establishing community based childcare centres so that older girls can attend school rather than watching siblings. This programme, like the Goats-to-School Programme acknowledges why children work and attempts to eliminate the household's need for child labour rather than simply trying to prevent children from working even if their household's subsistence depends on it.

7.3 Other Factors

Technological Change

238. Another policy option for eliminating child labour is to replace the technology that uses child labour. This could be accomplished through subsidizing mechanization or technology adoption. However, in the case of the three countries considered here, an easing of restrictions on imports of new technology might radically alter the structure of production.

239. A great deal of existing research suggests that the large declines in child labour experienced in Western economies at the end of the nineteenth century owes to changes in technology.¹² In low-income countries, there is also substantial support for the role of technological change in ameliorating child labour.¹³

Poverty Alleviation

240. A casual comparison across countries suggests that child labour is lower in rich countries than in poor ones. Krueger (1997) considers the cross-country evidence and finds that 80% of the cross-country variation in child labour can be explained by income variation. This provides hope that as countries become richer, child labour may decline.

241. To help low-income families, the World Food Programme in Nepal is operating an anti-child labour programme, the "Rural Infrastructure Construction Works" project. It is a food for work programme that works through employing the parents of children by providing income to adults who work for three years in community infrastructure projects. Research by the ILO in Nepal suggests that the projects regular income mitigates the need for children to work (ILO, 2001).

12. See for example Brown *et al* (1992), Moehling (1998).

13. See Levy (1985) for Egypt and Foster and Rosenzweig (1996) on India.

242. Other income generating schemes may have similar effects. There is, however, the possibility that improvements in household income may lead to increased earnings opportunities for children. For example, micro-credit schemes are designed to create new household enterprises. The findings of this paper suggest that improved within household earnings opportunities increase child labour. Thus, there is scope for increases in child labour with improvements in household income.

243. Edmonds and Pavcnik (2002) explicitly consider how child labour responds when households receive large increases in income and large increases in the return to child labour attributable to a trade reform in Vietnam. They observe a positive correlation between child wages and the probability a child works. However, the overwhelming factor affecting dramatic declines in child labour appears to be increases in household income. Households use increases in income to replace the income previously brought into the household by children, even though the same factor that increases income also increases the potential returns to child labour.

VIII. CONCLUSION

244. This study has examined the determinants of child labour supply in three South Asian countries through an empirical examination of available household survey data. Several common themes appear in the data. In order to understand child labour supply, time spent in wage work, household farm and enterprises, and household production must be considered. Time spent in household production is strongly correlated with time spent in other activities. In both Nepal and Vietnam, the correlation between household production time and time in other work is 0.2. Thus, focusing on market work alone understates child labour supply. Moreover, there are a number of children working large hours in either household production or market work. Focusing on market work alone would make a number of children appear to not work who are actually spending in excess of 20 hours a week in household production.

245. Most child labour is in own-farm agriculture. In rural areas of Nepal, for example, 88% of working children work in their own household in agriculture. Wage work is rare, and most wage work is in agriculture. Manufacturing receives almost all of the attention of child labour advocates, yet less than 15% of children who work for wages are in manufacturing in each of the three countries. That is, approximately 0.5% of children in these three countries are even potentially affected by policies aimed at child labour in manufacturing.

246. Not only is employment in manufacturing rare, the presence of manufacturing or other industries in a community has no discernable effect on child labour supply. Within manufacturing establishments, there is also no evidence supporting a significant connection between ownership type (*e.g.* foreign, state, private) and child labour.

247. In general, community attributes cannot explain a majority of the variation in child labour. In Nepal and Vietnam only 15% and 17% of the variation in household production is between communities. For market work, 25% of the variation in Nepal and 22% of the variation in Vietnam is between communities. These estimates even overstate the importance of community attributes, because household attributes within communities are likely to be correlated.

248. Most of the observed variation in child labour supply is between households rather than between communities. For example, in Vietnam, doubling the community participation rate in market work increases the probability that a child is observed working by half as much as that child having a sibling working. Overall, in both Nepal and Vietnam approximately 60% of the variation in household work and 65% of the variation in market work is between households.

249. Three household attributes appear to be particularly important in determining child labour supply.

- The earnings opportunities available to children within the household affect the opportunity cost of child time spent outside of work. Employment within the household appears more flexible than employment outside the household. Hence, households with farms or enterprises are more likely to have children work, and these children are likely to work relatively few hours.
- Household composition influences child labour supply. Each younger sibling appears to increase household production time for children by 1 hour a week in Vietnam and by 1.5 hours per week for girls in Nepal. Adding a younger brother increases hours in market work by approximately

2 hours per week in both Vietnam and Nepal. It is not possible to identify whether household composition works through the value of the child's marginal product in work or the household's marginal utility of consumption.

- Living standards appear to be a key determinant of child labour supply. The data reveal declines in child labour with improvements in living standards in both Pakistan and Vietnam. Moreover, improvements in living standards can explain 94% of the decline in market work that occurs between 1993 and 1998 for Vietnamese households near the poverty line.

250. There is also evidence that parental attitudes influence child labour supply. Namely, there appears to be persistence in the number of hours worked by children in the household through time. For example, if a Vietnamese household has a child working five hours a week in 1993, it is also likely to have a child work five hours in 1998. However, there is no observed persistence in extreme hours. For example, it is very unlikely to observe a child working 20 hours a week in a household in 1993, then to observe another child also working 20 hours a week in 1998.

251. Variation in child labour across children of different ages is similar in the countries studied. Differences in age and gender can explain 22% of the variation in household work in Nepal and 23% in Vietnam. For market work, age and gender capture 12% of the observed variation in Nepal and 14% in Vietnam.

252. While there are many striking similarities in child labour supply across all three countries, the determination of the labour supply of girls relative to boys appears very different. For example, gender explains little of the variation in household work in Vietnam, but it explains over 10% of the variation in household work in Nepal. Gender differences show-up throughout the Nepali results. Birth order influences the labour supply of boys and girls equally in Vietnam, but birth order affects the labour supply of girls substantially more than boys in Nepal. Similarly, while boys and girls respond similarly to sibling sex composition in Vietnam, girls are more affected in Nepal.

253. Perhaps a large part of the gender differences in child labour observed in Nepal owe to the relative seclusion of the female in Nepali society. Girls are more likely to work overall, but they are less likely to participate in work outside of the household. They are even less likely to shop for the household than are boys. This dichotomy between female and male participation seems especially large in Pakistan where it is unusual for girls to participate in any form of market work.

254. The findings of this study have several implications for policy. The problem of child labour is not divorced from the problem of the status of women in a country. Gender differences in society materialize at a very young age, and this appears to influence both the types of activities girls do and how much girls work. Policies that attempt to prohibit child labour may be ineffective. First, most child labour is within the household and thereby difficult to observe. Second, most working children work relatively few hours per week. Hence, child labour is not necessarily in conflict with schooling. Third, to the extent that policy is successful in limiting child labour outside of the household, this may only force the household to substitute child time for adult time within the household. Prohibitions on child labour do nothing (in the partial equilibrium) to affect the household's demand for children to work.

255. Policies that focus on limiting labour demand for child labour may leave households worse off. In the results on living standards, it appears that one of the important reasons for child labour is the household's high marginal utility of consumption today relative to the return to schooling. Curtailing labour demand does not raise the return to schooling, it only lowers household income. Hence, children may become more likely to work, only in less easily prohibited ways.

256. Programmes that attempt to mitigate the household's internal labour demand may reduce child labour supply. For example, community childcare programmes may mitigate the household's demand for children to work in that capacity. Likewise, programmes that facilitate cooperation and mutual support among farmers or businessmen in a community may help lower the household's reliance on child workers.

257. Programmes that do not attempt to eliminate child labour but instead channel it into activities more compatible with schooling also seem promising. That is, one way to reduce the costs of child labour is to help children work in activities where the opportunity cost of schooling is less. One promising example of this discussed in the text is of the Goats-to-School Programme that helps children manage goats in exchange for attending school. Of course, a complimentary approach to making work more compatible with schooling is to improve the flexibility of schooling to acknowledge work patterns.

258. Likewise, programmes that attempt to increase the return to schooling through providing financial incentives for school attendance also seem likely to be effective in both increasing schooling and mitigating child labour. Unfortunately, the expense of these programmes may limit the ability of these extremely poor countries to undertake financial incentive schemes where the rewards to the household of taking the desired action are large enough to make schooling worthwhile.

259. In general, technological progress and economic growth hold considerable promise for the long-term elimination of child labour, but economic development does not necessarily reduce child labour in the short term. The household's problem is to weigh the return to child labour against the return to schooling. If growth and development raise the return to child labour without increasing the return to schooling, it is possible, but not necessary, that child labour may increase. Growth and development may raise household income independent of what children do. In that case, the household's value of child earnings may decrease (because of diminishing marginal utility of consumption) even if market wages increase. This appears to have happened in Vietnam. Nevertheless, it would seem sensible for a country experiencing an episode of growth to make sure that part of the increase in economic resources goes towards improving the return to schooling.

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ANNEX A

BACKGROUND ON NEPAL, PAKISTAN, AND VIETNAM

Nepal, Pakistan, and Vietnam are 3 of the world's 50 poorest countries (measured in terms of GDP per capita at purchasing power parity in 1998). All three are primarily agricultural economies with a small number of very large urban areas. This section highlights some of their differences as well as their similarities that may inform the analysis below.

Economically, Pakistan and Vietnam appear very similar while Nepal is substantially poorer. Table A1 presents various economic indicators for each country taken from the World Bank's World Development Indicators, 2000. Nepal's economy is the smallest of the three. Vietnam's economy is five times the size of Nepal's, and Pakistan's economy is thirteen times the size of Nepal's. Adjusted for population and purchasing power differences, Pakistan and Vietnam appear to have similarly sized economies with a GDP per capita of approximately 1 700. In 1998, Vietnam was the fastest growing economy of the three with an annual growth rate of 6%. During the 1990s, Vietnam has been averaging almost an 8% growth rate, well above Nepal (4.8%) and Pakistan (4.3%).

Table A1. **Economic Characteristics of Nepal, Pakistan, and Vietnam, 1998**

	Nepal	Pakistan	Vietnam
GDP (Millions of 1995 US\$)	4,970	67,201	25,322
GDP per capita (at PPP)	1,157	1,715	1,689
Percentage growth in GDP (annual, 1998)	2	3	6
Percentage growth in GDP (average annual rate 1990-98)	4.8	4.3	7.7
Agriculture value added as a percentage of GDP	40	26	26
Trade as a percentage of GDP	7	8	13
Aid per capita (current US\$)	18	8	15

Source: World Development Indicators, 2000.

While employment in all three economies is concentrated in agriculture, agriculture's role in GDP is substantially larger in Nepal than in Pakistan or in Vietnam. In fact, value added in agriculture accounts for 26% of GDP in both Pakistan and Vietnam compared to 40% in Nepal. Trade is less important in landlocked Nepal than in Pakistan and Vietnam's trade accounts for 13% of its GDP. Pakistan is the largest recipient of foreign aid of the three countries, but in per capita terms, Nepal is the largest aid recipient. Between 1980 and 1993, both Pakistan and Nepal have received substantially more foreign aid (both in actual dollars and in per capita terms) than Vietnam, but Pakistan's aid fell dramatically in the mid and late 1990s while Vietnam's increased.

While Pakistan and Vietnam look similar economically, they look very different in terms of demographics. Table A2 summarizes demographic characteristics from the three countries. Pakistan has the largest population of the three nations. Pakistan's population is over 6 times that of Nepal's. The ratio of the under 15 population to total population is similar in Nepal (45%) and Pakistan (42%) while Vietnam's population is relatively older. Vietnam also has a much lower birth rate, and its under 5

mortality rate is one third of Pakistan's. In school enrolment's, Vietnam has the highest gross primary school enrolment rate although its secondary school enrolment is below that of Nepal's.

Table A2. **Demographic Characteristics of Nepal, Pakistan, and Vietnam, 1998**

	Nepal	Pakistan	Vietnam
Population (Millions)	22	132	77
Under 15 Population (Millions)	10	56	27
Birth rate per 1,000 people	34	35	21
Mortality rate, under-5 (per 1,000 live births)	107	120	42
Primary gross school enrollment, 1993	109	74	111
Secondary gross school enrollment, 1991	35	26	31
Adult female illiteracy rate	78	71	9
Adult male illiteracy rate	43	42	5

a) All data are for 1998 unless otherwise indicated.

Source: World Development Indicators, 2000.

Education differences are most dramatic in looking at adult illiteracy statistics. Vietnam's adult female illiteracy rate is 9%. Nepal's is 78% and Pakistan's is 71%. Male illiteracy is even lower than female illiteracy in Vietnam, but the gap between male and female illiteracy in Nepal and Pakistan is substantially larger than in Vietnam.

Thus, in considering child labour across these three countries, Pakistan and Vietnam seem to have similar economic environments, but in several measures of child well-being Vietnam appears to be doing substantially better than either Nepal or Pakistan.

*ANNEX B***HOUSEHOLD SURVEY DATA IN NEPAL, PAKISTAN, AND VIETNAM**

The analysis in this study is based on data on child labour collected from nationally representative household surveys. All of the surveys randomly select households from a registry of households (typically compiled during a census). This advantage of randomness is that the results are representative of the sampling frame. Thus, there is no scope for the researcher to select a sample based on the point the research intends to make.

There are however three main weaknesses of the household survey for studying child labour. First, by design, the survey instrument is inflexible across households. This inflexibility is necessary for inference across households, but a great deal of individual detail is necessarily lost. For example, describing and understanding working conditions is often very difficult. Second, with a randomized household survey, analysis of the survey enables the research to make inferences about child labour on average (or some other part of the population distribution). However, most of the worst forms of child labour are sufficiently rare that they are of no consequence to the average child. But the plight of children in the worst forms of child labour may be sufficiently dire that they deserve attention, and nationally representative household surveys are poor instruments for this. Third, a randomized survey is only representative of its sampling frame. Street children, migrant children, children in bondage, sex-workers, etc may all be outside of the sampling frame. Hence, while a nationally representative household survey is useful for understanding the child labour supply of the typical child, it may not be appropriate for learning about some of the most vulnerable children.

Moreover, the household survey is only useful if independent researchers are free to analyze it. Without this, findings from the survey are suspect. All of the surveys drawn on in this paper have received considerable support and funding from international (typically publicly funded) organizations. Yet, somehow, many of these surveys are not publicly available for research. For example, this study was not able to acquire any of the many household surveys that have been conducted in Pakistan. While the Statistics Office of Nepal and the General Statistics Office of Vietnam have been progressive and eager in providing their surveys for outside researchers, surveys conducted by other agents in those countries have been withheld from the public realm. Throughout much of recent history, the lack of reliable survey data was a major impediment to understanding child labour supply. Today, the problem is not a lack of data so much as the availability of that data.

Nepal

There are three main surveys in Nepal that can provide information about child labour. In 1995 and 1996, the Central Department of Population Studies, Tribhuvan University with various sources of external support conducted a Migration and Employment Survey (1995/96). 19 200 households were interviewed about their employment status and the activities of migrant members. This (MES) data appears to be the primary source of data in ILO studies.

The Central Bureau of Statistics in Nepal has conducted two nationally representative household surveys with child labour information: the Nepal Living Standards Survey 1995/96 (NLSS) and the Nepal Labour Force Survey 1999 (NLFS). The NLSS interviews 3 388 households about a wide range of

household characteristics. Its employment module focuses only on wage employment, and it does not collect employment information on children below 10. Thus its usefulness in child labour studies is limited. However, it is the best available data about other household attributes. The NLFS, however, is a nationally representative survey of over 14 355 households. The NLFS collects detailed data on a wide range of economic activities for children ages 5 and higher. The Central Bureau of Statistics has made widespread dissemination of its household surveys a priority. Hence, the data have been analyzed by many researchers and are considered to be of high quality.

Pakistan

There appear to be two primary sources of data on child labour in Pakistan. First, there is the Pakistani Integrated Household Survey conducted in 1991 (PIHS). This survey was supported in part by the World Bank, and consequently many researchers have been able to work with the data. Unfortunately, the survey did not collect information on household production for boys, and it asks employment questions for children who are 10 and older. There have been several follow up surveys to the PIHS, but academic researchers in general have not been permitted to work with the data.

Second, there is the Pakistan Child Labour Survey conducted with the help of the ILO in 1996 (PCLS). This data has not been made available to researchers in general. Summary statistics from the dataset are available from the ILO and one ILO affiliated research team has worked with the data. Unfortunately, all publicly available research reports based on the PCLS are ambiguous in how they define the economic activities of children. Based on the results reported with the PCLS, this project has assumed that they define a child as economically active if it works for wages, cash or in-kind, outside of the household. Moreover, while, this project reports results from the PCLS, the reader should regard them with greater scepticism, because they have had less scrutiny.

Neither collects substantive information about household production, so the discussion of Pakistan neglects this important area of child labour.

Vietnam

The primary sources of statistical data on child labour in Vietnam are the Vietnam Living Standards Surveys (VNLSS). There are two nationally representative rounds of the VNLSS. The first round conducted in 1992/93 interviewed 4 800 households, collecting data on a wide variety of household characteristics and activities. The second round took place in 1997/98 and followed a similar questionnaire and field design. The 1997/98 round of the VNLSS was designed to be a nationally representative, stand-alone cross-sectional survey sampling 5 999 households, but it also revisited 4 305 households from the first round of the VNLSS. Thus, with the VNLSS, it is possible to track changes in child labour through time in the population as well as in individual households. The VNLSS received technical support from a number of sources including the World Bank, and the General Statistics Office of the government of Vietnam has made the data easily accessible to academic researchers and international institutions. Thus, there has been considerable scrutiny of the data, and they are generally considered reliable.

Two other sources of data on child labour are sometimes cited. Neither is publicly available, and their credibility is therefore suspect. First, the Centre for Information and Statistics on Labour and Social affairs (with UNICEF and the ILO) ran a survey on economically active children in 1998 that interviewed 2 291 households (the CLSSI survey). This is similar in content and design to the ILO surveys performed in Nepal and Pakistan. Second, the Institute of Labour and Social Studies interviewed 600 of the VNLSS households to gather additional information on child labour in these households (the ILSSA survey). Greater detail about the questions asked or how the 600 households were selected is not in the public realm.

There are three limitations with the VNLSS that are particularly important when this study considers trends through time in the VNLSS or uses the panel design of the VNLSS. First, households of unregistered migrants are less likely to be included in the VNLSS (World Bank *et al.*, 1999), and studies suggest that their children are more likely to work for a living (SCF (UK), 1999). Second, the VNLSS does not track households that move. Hence, in addition to missing unregistered migrants, the VNLSS misses migrant households that appeared in the first VNLSS but moved before the second VNLSS. Third, the VNLSS follows households rather than individuals. Hence, children that leave VNLSS households for work may be missed. Edmonds and Turk (2002) consider this problem in the VNLSS by examining what happens to children that were in households in 1993 when the household is re-interviewed in 1998. They find that of 6 003 sampled children between the ages of 0 and 10 in 1993 in panel households, a total of 36 appear to have left the household for reasons other than death, parental movements, or marriage by 1998.¹⁴

14. The reasons given for migration of these 36 children are evenly split between employment, schooling, and other. 9 out of the 20 girls report leaving home for employment whereas only 3 out of the 16 boys do. However, 8 of the 16 boys report leaving for “other” reasons (only 4 girls report “other”).

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