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Child Labor in Transition in Vietnam

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Abstract

Vietnam experienced a dramatic decline in child labor during the 1990s. Edmonds and Turk explore this decline in detail and document the heterogeneity across households in both levels of child labor and in the incidence of this decline in child labor. The authors find a strong correlation between living standards improvements and child labor so that much of the variation in declines in child labor can be explained by variation in living standards improvements. Ethnic minority children and the children of recent migrants appear to remain particularly vulnerable even by the late 1990s. Children of all ethnicities in the Central Highlands appear to have missed many of the improvements in the 1990s, while children in the rural Mekong and in Provincial Towns have experienced the largest declines in child labor. The results suggest embedding efforts against child labor within an overall antipoverty program. The authors find that the opening or closing of household enterprises seems to be associated with increases in child labor. So attention should be devoted to the activities of children in the government's current program to stimulate nonfarm enterprises.

This paper—a product of Macroeconomics and Growth, Development Research Group—is part of a larger effort in the group to study household welfare and poverty reduction in Vietnam. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rina Bonfield, room MC3-354, telephone 202-473-1248, fax 202-522-3518, email address abonfield@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at eedmonds@dartmouth.edu or cturk@worldbank.org. February 2002. (55 pages)

Child Labor in Transition in Vietnam*

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I. Introduction

Child labor[1] is endemic in most of the world's poorer countries. As a response to chronic poverty and idiosyncratic shocks, poor children around the world are withdrawn from school, if they are attending, and are required to make an economic contribution to the household. This may have a positive effect, in allowing the household and children within the household to maintain essential basic consumption in times of real hardship. A moderate amount of work in safe conditions can allow children to develop useful skills and a sense of responsibility. Child labor may also have negative effects, diminishing a child's human capital accumulation, creating an enduring poverty trap for (potentially) generations and exposing children to harmful situations that restrict their physical, psychological, and emotional development. There are clearly documented problems in outlawing all forms of child labor (Crawford, 2000). Such prohibitions, if enforced, can cause severe hardship for households who are barely surviving and drive the economic contributions of children underground into illegal and exploitative areas of work. At the same time, there is also a need to safeguard children from abuses to protect them from harmful situations, to ensure their education and to uphold their basic rights as children.

The incidence of child labor appears to be negatively correlated with living standards. Using a cross-section of countries from 1995, Krueger (1997) shows that child labor virtually disappears once a country's GDP per capita reaches $5,000. He finds that 80% of the international variation in child labor can be explained by GDP per capita alone. Vietnam does not appear to be an exception to this relationship. Driven by rural and other reforms in the late 1980's and early 1990's Vietnam enjoyed rapid economic growth of over 6% per annum over the last decade. This in

turn generated impressive reductions in the incidence of poverty, with the poverty headcount falling from 58% to 37% between 1993 and 1998 (World Bank et al). Edmonds (2001) documents that the probability that a child (ages six to fifteen) works in agriculture, a family operated business, or wage employment drops by 28% between 1993 and 1998. He shows that 94% of the drop in child labor for rural households at the poverty line in 1993 can be explained with improvements in household economic status.[2]

Not all households benefit equally from improvements in living standards. The aim of this study is to explore in detail the decline in child labor that Vietnam experienced during the 1990s and to document the heterogeneity across households in both levels of child labor and in the incidence of this decline in child labor. Our primary aim is to develop a set of indicators to help direct policy to children who remain vulnerable despite general improvements in living standards.

We find that even after controlling for time invariant household characteristics, we still observe substantial heterogeneity across households in the amount by which child labor has declined in Vietnam in the nineties. Decreases in the probability that children participate in any type of economic activity have been largest in provincial towns, minor cities, the southeast, and the rural Mekong river delta. Declines in the fraction of children working have been the smallest in urban areas, the south central coast, and the Central Highlands.

In addition to geographic indicators, we consider other observable household characteristics associated with variation in the decline in the probability a child works. Ethnic minorities appear to work more than non-ethnic minorities, but most of this additional work can be explained by time

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[1] In much of the literature on child labor, distinctions are made between children "working" and child "labor". The former is often used to describe situations where children's economic contribution is not harmful to their overall development while child "labor" describes situations where a child's opportunities for development are being constrained by their work. In this paper we use the terms "labor" and "work" interchangeably.

[2] Glewwe and Jacoby (1998), in looking at retrospective school enrollment and labor market information in the 1993 VNLSS, argue that schooling declined and formal labor market participation rates increased in Vietnam from 1986 to 1991. Unfortunately, there is no data available to link these patterns to changes in household economic status.

invariant household characteristics. Ethnic minorities constitute 14% of the population of Vietnam, but represent 29% of the poor. They have less access to infrastructure, social services and other resources (Baulch et al 2001). Girls experience smaller reductions in child labor than do boys. Older children experience greater reductions, but that appears to be because older children were more apt to work in 1993. Both a past migration history or the actual departure of a household head are associated with higher levels of child labor, and migrant households experience smaller declines in child labor than do non-migrant households. The creation of a new household business seems to be associated with smaller declines in child labor, although households that had a household business in 1993 experience larger reductions in child labor than other households.

Taken together, the results of this paper paint an optimistic picture for child labor in Vietnam. Children are doing better in 1998 than in 1993. Although there is substantial heterogeneity across households and regions in the amount by which they have reduced their child labor, we do not find any observable household characteristics that clearly indicate a failure to participate in the declines in child labor that we observe between 1993 and 1998. There is still ample scope for policy to help improve the well-being of children and there are groups of children who remain vulnerable even in the context of rising living standards. Some of the worst forms of child labor are not easily captured with household surveys. Nevertheless, for the average child in Vietnam who is represented in the VNLSS, there is every reason to be optimistic about their future.

II. The Child Labor Environment in the 1990s

A. Recent Trends in Child Labor

In this paper, we rely on the Vietnam Living Standards Surveys (VNLSS). There are two nationally representative rounds of the VNLSS. The first round conducted in 1992/93 interviewed 4800 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 5999 households, but it also revisited 4305 households from the first round of the VNLSS. When our analysis is based on nationwide comparisons, we treat the two rounds of the VNLSS as separate, nationally representative (when appropriately weighted) cross-sectional surveys. We complete our descriptive work with regression analysis where we limit our sample to the panel households that appear in both rounds of the survey.

There are limitations associated with using the VNLSS to investigate patterns and trends in child labor. First, some of the most exploitative forms of child labor, such as child prostitution, are likely to be hidden because they are illegal. Second, the VNLSS collects little information on working conditions. Whether or not work is harming the development of a child lies partly in the nature of the work and the exposure to physically hazardous and/or psychologically stressful conditions. Because the VNLSS does not attempt to document working conditions and the data on hours worked in agriculture is not comparable between rounds, our quantitative analysis focuses on participation in work rather than working conditions. We supplement our analysis by drawing on a growing body of qualitative studies that examine issues around child labor. Third, some of the children who are laboring are likely to be hidden. Street children[3], for example, are often not part of households and are therefore likely to be omitted from household surveys. Households of unregistered migrants are less likely to be included in the VNLSS (World Bank et al, 1999), though studies suggest that their children are more likely to work for a living (SCF (UK) 1999).

The VNLSS may also miss the labor activities of children who have left their household. Children who have been "trafficked" overseas are very likely to be working but, since they no longer reside in Vietnam, will not show up in household survey data. Likewise, there is a case

study literature documenting children leaving their parental home to stay and work with other families for periods of time, either in exchange for board, lodging, and education or to work for a wage as a domestic helper (SCF (UK), 1997; VN-Sweden MRDP, 1999). The work of these children may not be adequately captured by the data because these children very often remain both unregistered in the host family (survey respondents may not consider the child when listing household residents or members) and absent from the family home (SCF Sweden et al, 2000).

Fortunately, it is possible to assess the scale of this missing children problem with the VNLSS data. The 1993 survey collects a household roster of all individuals in the household at the time of the survey, and the 1998 survey asks about the location of each of those members. Of the children ages 10 and under (and thus between 5 and 15 in 1998) in the 1993 survey, 92% are still in the household in 1998. Of this missing 8%, 10% died. 56% of the dead are boys (in other countries, boys have been found to have slightly higher mortality rates). Of the surviving 421 children present in the household in 1993 but not in 1998, 365 (or 87%) moved out when their family moved. For the remaining 56 children, 31 (55%) are female. 11 of these females left the household for marriage (9 boys of the 25 boys left the household for marriage). Thus, out of 6003 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. 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). Thus, although departing one's household for work is undoubtedly an important event in the lives of those children being sent away, this experience does not appear to be an integral part of the childhood

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[3] The term "street children" here is used to describe children who are working on the streets and who live on the street (with or away from their families) or who live in basic shelter away from their families or who return at night to live

experience of either the average boy or the average girl and is unlikely to substantively alter our conclusions.

The VNLSS surveys present several ways to define child labor. We present these in table 1. For each household member, age 6 and older, the VNLSS asks whether the person works for pay outside of the household ("works for wages outside of household"), works for the household in agriculture ("works in agr. for hh"), and works for the household in self-employment or a household run business ("works in bus. for hh"). Collectively, we refer to these three work categories as traditional work. The survey also asks whether a person performs household work and chores such as cleaning, cooking, washing, shopping, collecting water or wood, and building or maintaining the house, its surroundings, or furniture. Collectively, we refer to this set of activities as household work.[4] The VNLSS collects data on participation in each of these activities for the last seven days and in the last twelve months. Throughout this paper, we focus on participation in the last seven days.

Table 1: Participation in Child Labor (in last 7 days) by Type of Work for Children 6-15 (%)

	1992/93		1997/98	
	Mean	S.E.	Mean	S.E.
Works for wages outside of household	2.3	0.3	1.3	0.2
Works in Agr. in Hh	25.6	1.6	19.3	1.7
Works in Bus. in Hh	4.4	0.6	2.6	0.4
Works in Traditional Work	30.7	1.5	22.0	1.6
Works in Household Work	52.8	1.2	53.0	1.6
Works	62.1	1.3	56.8	1.5

Population means weighted to reflect sampling probabilities. Standard errors corrected for clustered sample design. The 1992/93 data are from a sample of 6071 children 6-15 representing a population of 16,340,704. The 1997/98 data are from a sample of 7071 children 6-15 representing a population of 19,117,671.

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with their families off the street. This is a mixed group of children with different vulnerabilities.

[4] We are missing household work information for 47 children (0.4% of our total sample). 6 of these children report working in traditional work. Thus, throughout this paper when we consider participation in traditional work will we have 41 more children than when we consider work participation across all categories and 47 more children than when we consider work participation in household work. Because we are missing household hours for these 47 children, all hours worked observations contain 47 less children than does hours in traditional work.

Table 1 documents the economic activities of children 6-15 in both rounds of the VNLSS. The outstanding feature of table 1 is that a majority of children in Vietnam are engaged in some form of economic activity within the last seven days. This is true in both the 1993 and the 1998 rounds of the VNLSS. However, participation rates declines by 9% between the survey years from 62% to 57%. This decline is composed of a large (28%) decline in participation in traditional work and a small (0.4%), statistically insignificant increase in participation in household work.[5] For the components of traditional work, children are most likely to be engaged in agricultural work within the household. The participation rate in agriculture within the household in 1993 is 26%. This declines to 19% in 1998, a 25% reduction relative to the 1993 level. Work outside of the household and work for a household business are rare with participation rates of 2% and 4% respectively in 1993. However, both these categories experience large, statistically significant percentage reductions. Work outside of the household declines by 44%. Work in a household business declines by 42%.

B. The Economic and Policy Context

These changes in child labor are taking place in a rapidly evolving economic and policy environment. The rural reforms of the late 1980's returned responsibility for agricultural production to the autonomous farming household and this reform is correlated with impressive growth in agricultural output. Over the 1990's agricultural GDP grew by nearly 5% per annum, prompting a rise of 60% in farm incomes between 1993 and 1998 (World Bank, 2000). The industrial sector has also been expanding rapidly, growing at 13% per year between 1993 and 1998. Policies that promoted capital-intensive industries and protected domestic markets have meant that

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[5] When we discuss changes in child labor through time, we will either consider percentage point changes which are calculated by subtracting the 1998 participation rate from the 1993 participation rate (i.e., the fraction of children working in traditional work drops by 8.7 percentage points) or percentage changes that are calculated by dividing the percentage point decline by the 1993 base (i.e., we find a 28% decline in participation in child labor).

industrial employment over this period grew relatively slowly (at approximately 4% per annum over the same period). The introduction of a new Enterprise Law in 2000 and recent announcements that the Government of Vietnam intends to embark on further reforms to create a stronger environment for enterprise and international trade suggest that a more labor intensive sector may develop rapidly over the coming years. Recent estimates based on GSO data suggest that 300,000 new jobs were created in the private sector during 2000 (World Bank estimates based on GSO data).

1. Education

Government policies in the post-Independence period have demonstrated a commitment to achieving universal primary education and to protecting children from exploitative situations. Vietnam entered the 1990's with net enrollment rates in primary school of 86% (Government of Vietnam, National Literacy Committee estimates). This emphasis on the provision of education was reinforced in 1991 by the introduction of the Law on the Universalisation of Education and in the 1992 Constitution, which asserts that primary education is both free and compulsory. Though it is the case that tuition fees are not charged for primary education, many sources have described the burdensome nature of a whole range of other costs associated with educating children (Actionaid, 1999; Oxfam GB, 1997; World Bank, 1999).

These studies suggest that the costs have become more onerous over the 1990s and that they are an important cause of interrupted education. Recent estimates using VNLSS data suggest that the costs of educating one student at primary level are equivalent to nearly 5% of non-food expenditure for a household in the lowest quintile of the population and that their primary school costs have risen between 1993-1998 (Government of Vietnam – Donor Working Group, 2000). Households in the lowest quintile are well below the poverty line. As such, any non-food expenditure diverts funds from basic consumption needs (World Bank et al, 1999). Much of the qualitative literature on child labor and working children in Vietnam tracks a path from household economic difficulties to

withdrawing children from school to, shortly afterwards, scaling up the economic activity of children as a strategy for coping with hardship (SCF(UK), 1998; SCF(UK), 1999; VN-Sweden MRDP, 1999).

Even though the costs of educating children can be considerable, enrollment rates in all levels of schooling have risen over the 1990's. Table 2 contains school enrollment rates by quintile and level of schooling for 1993 and 1998. In 1998, net enrollment in primary education (grades 1-5) was 91 percent with little difference between the enrollment rates of girls and boys. Enrollment in lower secondary school (grades 6-10) had climbed to 62 percent by 1997. However, poor children have generally lower enrollment rates at all levels of schooling in Table 2 and the quality of education services varies widely across the country. Moreover, Vietnam has one of the shortest primary school curricula in the world in terms of hours in the classroom (though this is currently under revision, following the National Assembly's adoption of resolution No 40/2000/QH on curriculum reform) and, particularly in rural areas, does not demand more than a few hours' attendance a day (DFID 2001). For many children, progress through primary school is fully compatible with a moderate amount of work, either inside or outside the household, paid or unpaid. In fact, for some children, the costs of pursuing education may necessitate economic activity.

Table 2: School enrollment rates by quintile in Vietnam, 1993-98 (%)

	Primary		*Lower sec*		*Upper sec*		*Post sec*	
	1993	1998	1993	1998	1993	1998	1993	1998
Net enrollment rates								
Vietnam	87	91	30	62	7	29	3	9
Poorest quintile	72	82	12	34	1	5	0	0
Richest quintile	96	96	55	91	21	64	9	29
Gross enrollment rates								
Vietnam	120	115	42	78	9	36	4	12
Poorest quintile	100	112	15	47	1	8	0	0
Richest quintile	130	104	77	105	24	75	13	37

Source: Nguyen Nguyet Nga (forthcoming), based on estimates from VNLSS1 and VNLSS2

A child only has so much available time, and time spent working may reduce time in school, time studying, or leisure time. A vast descriptive literature suggests that low levels of work are compatible with continued school enrollment, but as hours worked increase, schooling and work become incompatible. Even if school enrollment is compatible with child labor, work may still affect a child's human capital accumulation. First, a working child may be enrolled in school, but it is not clear that we observe time spent in class with enrollment information. Second, physically being in school is only a necessary, not sufficient, condition for learning. Work may limit the child's energy for school, or it may limit the child's ability to develop skills outside of the classroom. Third, even if working has no effect on schooling whatsoever, leisure is important in a child's development. Play enables a child to develop both its social and creative thinking skills. It is possible that this cost to a child could be even greater than the lack of general skill accumulation. Of course, the types of general skill that a child learns in school are not the only types of skill that are useful to a child. A child may use the skills it develops while working throughout its life. Thus, the relationship between schooling and child labor is very difficult to analyze. This fact is further complicated because we cannot separate whether a child works because it does not attend school or the child does not attend school because it works.

With this in mind, we look at school enrollment rates in 1993 and 1998 for different work categories. We can say nothing about the quality of time spent in school for working children, and we do not observe the working child's consumption of leisure. With these caveats, it seems useful to consider school enrollment rates by the type of work performed by a child. We also consider whether school enrollment rates differ by type of work through time. This is in table 3:

Table 3: School Enrollment by Age and Type of Work in Last 7 Days

	All Ages		Ages 6-11		Ages12-13		Ages 14-15	
	1993	1998	1993	1998	1993	1998	1993	1998
Doesn't Work	83.3	92.3	83.7	92.9	88.3	93.3	67.0	85.8
Works for wages (outside)	15.9	7.5	46.2	39.9	32.4	16.2	4.5	4.0
Works in Agr in Hh	63.0	74.7	89.8	93.3	66.3	80.6	34.0	58.3
Works in Bus in Hh	48.9	59.7	86.8	90.1	58.8	62.9	28.1	51.4
Works in Traditional Work	59.3	70.2	89.5	92.6	63.2	76.9	30.9	53.3
Works in Household work	72.5	86.3	88.8	96.0	72.1	88.2	43.0	72.4
Works	71.8	84.7	89.2	95.5	70.7	86.7	41.6	69.6

In table 3, each cell is calculated by stratifying the sample by the each row. Hence, in the first row, we compute school enrollment rates for all children that do not work. In the third row, we compute school enrollment rates for all children that work in agriculture for their household. Any individual child can appear in multiple rows. For example, if a child works in agriculture and a household business, it is counted in both rows. The first two columns calculate school enrollment rates by year for all ages. The remaining columns compute school enrollment rates for children 6-11, 12-13, and 14-15.

Several interesting traits appear in table 3. First, school enrollment rates are generally highest for nonworking children. 88% of 12-13 year olds who do not work are enrolled in school in 1993, but only 71% of 12-13 year olds that work attend school in 1993. The only exception to this is for primary school age children (6-11). In this group, children who work report slightly higher enrollment rates, but this difference in enrollment rates for primary school age children is not statistically significant. Second, in both 1993 and 1998, children are least likely to attend school if they work outside of the household (only 8% of children in this group enroll in school in 1998) or if they work in a household run business. For a majority of children, it is possible to both enroll in school and work in agriculture or in household work. For children above the age of 11, however, children that work in any type of traditional work have enrollment rates that are below (statistically)

enrollment rates for children who do not work. Third, between 1993 and 1998, school enrollment rates increase across all rows of table 3 except for those children who work outside of the household. School enrollment rates are actually lower for children who work outside of the household in 1998, but this lower rate of school enrollment is only statistically significant at the 10% level for one age group: 12-13. Fourth, outside of ages 6-11, school enrollment rates increase between 1993 and 1998 by more for working children than nonworking children. Part of this may be attributable to the fact that school enrollment rates are bounded at 1, and they start off very close to 1 for non-workers in 1993. In addition, work could be becoming more compatible with schooling in 1998. One mechanism for this increase in the compatibility between schooling and working might be that a reduction in hours worked accompanies the reduction in work participation rates that we observe in this paper. Hence, in the VNLSS data we observe that older children who work are less likely to be enrolled in school than children that do not work, and we see that children who work become more likely to be enrolled in school through time.

2. Legislation

Vietnam was the second country in the world, and the first country in Asia, to sign the International Convention on the Rights of the Child in 1990. Article 32 of the Convention underscores the need for Governments to "recognize the right of the child to be protected from economic exploitation and from performing any work that is likely to be hazardous to or interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development". The Government of Vietnam has acted on this through a number of legislative and regulatory measures, seeking to maintain an uneasy balance between allowing children to contribute to their own survival in times of hardship and safeguarding the rights of children to physical and intellectual development. Of particular importance are the Law on Child Protection, Care and Education (1991); the 1992 Constitution of the Socialist Republic of Vietnam

(especially Article 65); the Labor Code (1994); many Decrees and Circulars which clarify specific issues in connection to child labor; and Decision No 134/1999/QD-TTg which approves the Program of Action to protect vulnerable children in the 1999-2002 period.

The outcome of these laws, decrees, regulations and instructions is a regulatory framework that outlines the key definitions and priorities in relation to child labor. A child is a person under the age of 18 (according to the Constitution), but Articles 119-122 of the Labor Code specify conditions under which adolescents or juniors (15-18 year-olds) may work legally. Restrictions that apply to the employment of 15-18 year-olds include:

- Not working more than 7 hours per day or 42 hours per week;
- Working under dangerous conditions[6] ; and,
- Being forced to work or being involved in abusive or exploitative work.

Junior employees between the ages of 15 and 18 are entitled by law to the same wage as an adult, provided they are performing the same work. Children under the age of 15 are allowed to work in a very restricted range of activities specified by MOLISA (Circular No 21/1999/TT-BLDTBXH), but are not permitted to work more than 4 hours per day or 24 hours per week, must be over the age of 12, and may only work with written consent of their parents or sponsors. The employer is obliged to ensure the child's schooling. Children under the age of 13 can be employed legally if they are being trained in certain occupations identified by the MOLISA (Decree No 90/CP).

The Government of Vietnam ratified the ILO Convention No 182 on the Worst Forms Of Child Labor in November 2000. As such the Government of Vietnam has indicated its commitment

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[6] Defined by Circular 09/TTLB, 13.4.95, issued by the Ministry of Labor, Invalids and Social Affairs and the Ministry of Health, specifies 13 harmful situations and 81 forbidden occupations.

to eliminating "the worst forms of child labor" as defined in Article 3 of Convention 182 and is in the process of drafting a plan to implement the requirements of Convention 182 (MOLISA, 2001).

Vietnamese tradition accords an important role for children within the households and, in common with many cultures, a moderate amount of work within the household can be considered positive for the physical, intellectual and personal development of children. This is legal as long as it is not harmful, dangerous or exploitative and it does not interfere with the completion of primary education (Institute of Labor Studies and University of Wollongong, 2000).

III. Winners and Losers Among Child Laborers in the Nineties

The allocation of child time is an important component of a household's decision-making process. The household must weigh the value of child time spent in many activities including schooling, wage work, work inside the household, and work in household chores or other components of household production. The value of child time in any of these activities may depend on both child and household attributes. In this section we consider how observable child and household characteristics are associated with the degree to which a household benefits from improved living standards in Vietnam in the 1990s.

A. Child Attributes: Age and Gender

The types of work that a child can perform vary with the child's age and may vary with the child's gender. A child age 6 is a less capable worker in most activities than is a child age 15. Sex-typing of economic and household activities can lead to different age/gender distributions of the activities of children. If boys and girls perform different types of activities, it is possible that they have been differentially affected by the changes that Vietnam has experienced in the 1990s. In this section, we consider changes in child labor by gender, then discuss gender differences by age.

Table 4 presents participation rates in various types of economic activities by gender. Girls are more likely to work than are boys in both rounds of the VNLSS. In traditional work, higher

participation rates appear to be driven by greater participation by girls in the household business. Also, girls are more apt to participate in household work, and this extra participation in household work than boys. Most of the large gender differences in participation in any form of work ("works") appear to owe substantially higher participation rates of girls in household work. The reduction (in percentage terms) in participation rates between the two rounds of the VNLSS is larger for boys, although the decline in levels of participation are nearly identical for boys and girls.

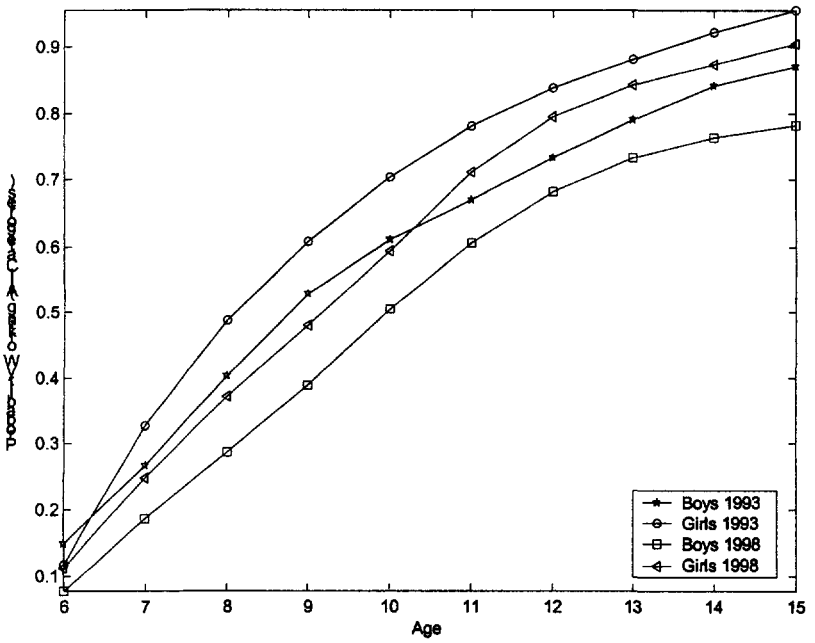
Table 4: Participation in Child Labor (in last 7 days) by Gender for Children 6-15

		1992/93		1997/98	
		Mean	S.E.	Mean	S.E.
Boys					
	Works for wages outside of household	2.2	0.3	1.2	0.2
	Works in Agr. in Hh	25.4	1.7	19.1	1.9
	Works in Bus. in Hh	3.6	0.5	2.5	0.5
	Works in Traditional Work	29.9	1.6	21.6	1.9
	Works in Household Work	45.2	1.6	46.8	1.8
	Works	57.9	1.6	52.5	1.8
Girls					
	Works for wages outside of household	2.4	0.4	1.4	0.3
	Works in Agr. in Hh	25.9	1.7	19.4	1.7
	Works in Bus. in Hh	5.3	0.7	2.7	0.5
	Works in Traditional Work	31.6	1.5	22.4	1.6
	Works in Household Work	60.7	1.3	59.6	1.6
	Works	66.5	1.3	61.3	1.6

However, the activities of boys and girls differ with their age. Hence, while there may be little difference between the way boys and girls as groups benefit from the growth in Vietnam in the 1990s, there may be important by age differences. Figure 1 presents child labor participation rates

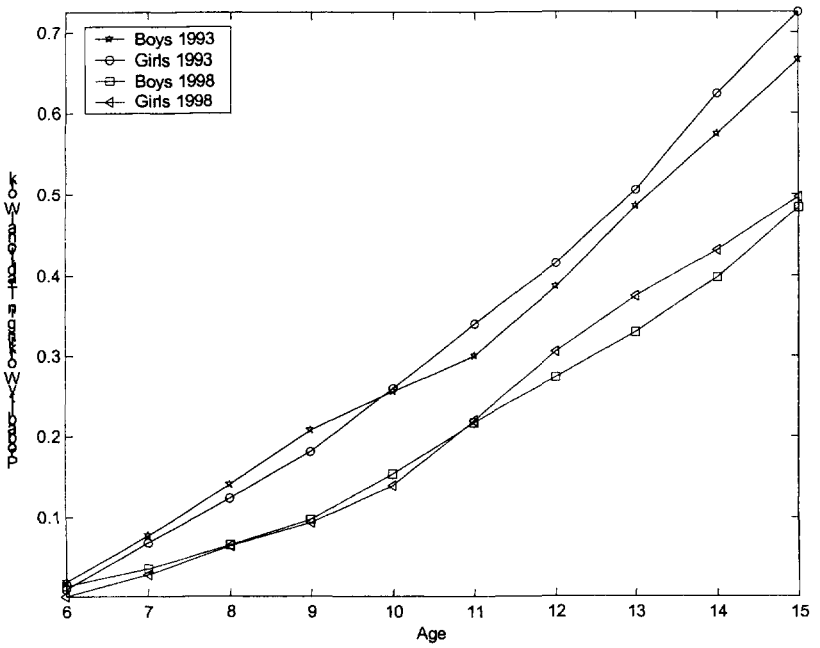
by age and gender.[7] Throughout this paper, we examine figures similar to figure 1. Hence, it is important that the interpretation of figure 1 is clear. Figure 1A considers participation in all categories of work. Figure 1B only considers participation in traditional forms of work (the difference between the two being household work).

Figure 1: Participation in Work by Age and Gender
A. All Work Categories



[7] Though the sample sizes in the VNLSS are relatively large, when we separate children by age and by gender, the number of children that we observe of a given age and gender becomes relatively small. Hence, we smooth our estimates of child labor participation rates using a nonparametric (local) regression smoother. The lines are local regression lines estimated with an Epanechnikov kernel and a bandwidth of .9. With such a small bandwidth, these regression lines look only slightly smoother than just the raw, by age, sample means. Later, when we bifurcate the sample by household characteristics where the number of children at a given age is very small, we use a larger bandwidth, and this regression procedure imposes more smoothing.

B. Traditional Work



Each line in figure 1 connects the participation rates by age for the group indicated in the legend. The vertical axis is labeled the "Probability of Working". It has the interpretation of being the fraction of children at a given age in a given group (e.g., boys 1993) who are working or of being the probability, upon observing a child at the indicated age in the given group, of finding that the child works. When multiplied by 100 these are identical to the labor participation rates in the tables.

The large drop in the probability that a child works as well as the improvements experienced by each gender is evident in these pictures. However, there are some interesting age/gender differences evident in figure 1. In figure 1A (all work categories), the largest drop in work probabilities appear between the ages of 8 to 10. These are primary school ages. The decline in work is smaller in older age groups, particularly for girls. However, for traditional work, the decline in labor participation is greatest for older (post-primary school) ages. In figure 1B, girls after the age of 11 are more likely to engage in traditional work than are boys although the

differences are very small. Both boys and girls experience a similarly large drop in participation rates in traditional work between 1993 and 1998. The magnitude of this drop (percentage point) increases with age. Since older children are substantially more likely to work in traditional work in 1993, it makes sense that they should experience the largest reductions over time.

The interpretation of these gender differences is complex. Boys and girls may have different economic opportunities open to them, and the value of their time outside of work may vary dramatically. Within the household, members may not agree on how to allocate child time. It is particularly important to recognize that the benefits from any particular decision may not accrue to those bearing the costs associated with that decision. This repeatedly emerges as a theme in studies on children in Vietnam. It is common, for example, to see one child (often a girl) withdrawn from school and set to work in order to allow the other children to carry on their education (SCF (UK) (1999)). Since an important part of the difference in work participation between boys and girls lies in their contribution to household work it is likely that the gender division of labor and gender-based inequities in decision-making within the household are important determining factors. We return to this issue in the conclusions.

There also appear to be gender differences in hours worked. Figure 2 examines the distribution of hours worked in nonagricultural traditional work for children that work. The questionnaires from the 1993 and 1998 VNLSS are virtually identical with respect to child labor except for a substantive change in the way hours worked in agriculture is collected. Consequently, we can only compare hours worked in wage work and work for the household business ("nonagricultural traditional work").

Figure 2: Distribution of Hours Worked in Nonagricultural Traditional Work

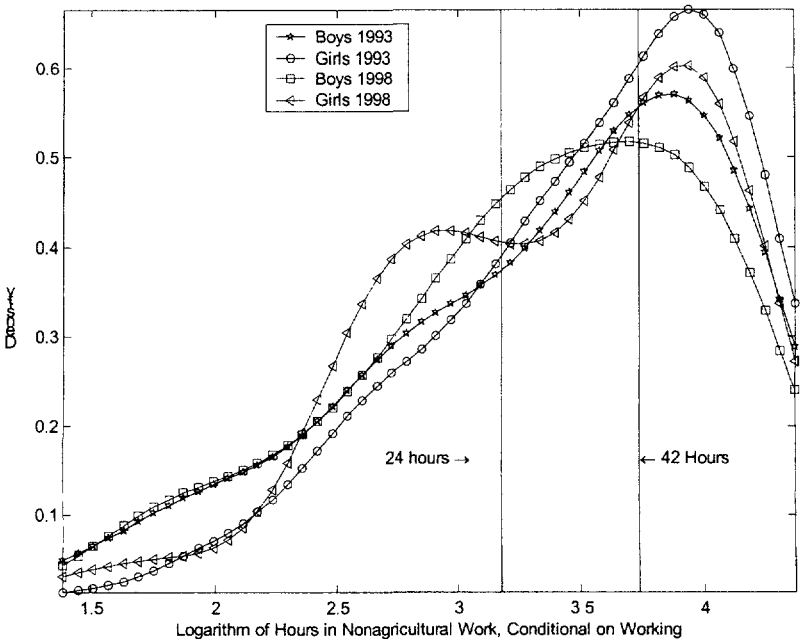


Figure 2 contains nonparametric estimates of the density of the logarithm of hours worked in the last week.[8] We separately estimate the densities for 1993 and 1998 and boys and girls. Focusing first on the 1993 density estimates, we observe that the density of time spent working for girls is more concentrated than for boys. This is evident by the higher peak in excess of 42 hours of work in the last week. We find a greater mass of boys working less than 24 hours in 1993 and a greater fraction of girls working about 42 hours per week.

The distribution of hours worked changes significantly in 1998. For both boys and girls, we observe a drop in the mass of workers working in excess of 42 hours. We see an increase in the mass of boys who are working close to 24 hours per week. For girls, we see the emergence of two clear mass points in the 1998 distribution. The largest subset of girls work more than 42 hours per week (although the fraction of girls working 42 hours declines between the two years). However, in

[8] Density estimates are kernel densities estimated with a Gaussian kernel and a bandwidth chosen by Silverman's rule of thumb (1986).

1998, we see a mass of girls working slightly less than 24 hours per week as well. We have not corrected the pictures in 1998 to reflect the fact that the probability of observing a child working in nonagricultural work is lower in 1998. Hence, the type of children pictured in the 1993 distribution might be different than the children remaining in the 1998 picture. Nevertheless, to the extent that the children working in nonagricultural work in 1993 and 1998 are comparable, the picture in figure 2 is consistent with many girls shifting their work from a large number of hours in 1993 to relatively few hours in 1998.

Figure 2 shows that a considerable number of those children, particularly girls, that work outside of agriculture are working hours above the legal limits set out in the Labor Code. 45% of these children are working in enterprises with five or less employees, but these legal limits are still relevant as indicators of what Vietnamese society and legislators have decided is acceptable within the specific social, cultural and economic context of Vietnam. The mean child who is working in nonagricultural traditional work in 1998 is still working 34 hours per week, above the legal maximum set by the Ministry of Labor, Invalids and Social Affairs (MOLISA) for children under the age of 15 years. These children could be described as vulnerable in the sense that their working arrangements might be restricting their wellbeing and interfering with their basic rights as identified in Article 32 of the International Convention of the Rights of the Child. The second peak at above 42 hours per week is especially worrying, since this exceeds by some margin the legal limits established for the 15-18 year age group and in our data, only 15% of the children who work more than 42 hours are even enrolled in school. A study of working children in Ho Chi Minh City (Viet Nam Youth Institute, 1999) corroborates this pattern, indicating that working hours for girls peaked at a higher level than for boys and at levels above the maximum limit set by law.

B. Residential Location

The distribution of improvements in living standards has been different across rural and urban areas of Vietnam (Glewwe and Nguyen 2000). For that reason alone, we might expect to see differences in the improvements in the child labor situation across rural and urban areas (or in even greater geographic detail). However, children also engage in different types of economic activities in rural and urban areas. Table 5 describes the types of activities undertaken by children of different gender and ages in Ho Chi Minh City, and table 6 considers the activities of children in rural Vietnam.

Table 5: Starting Age of Work of Children In Different Occupations (Ho Chi Minh City)

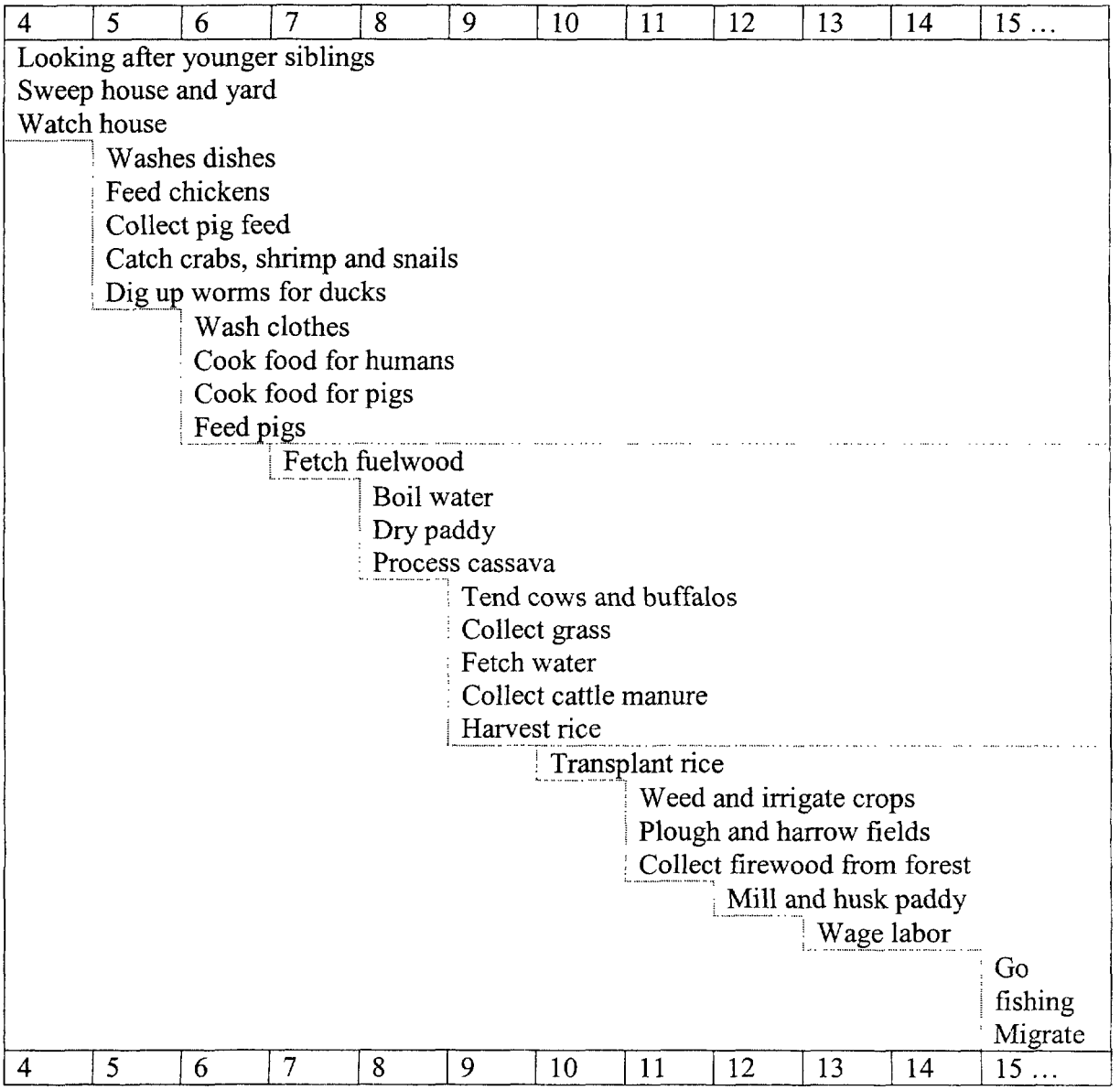
Children's Age

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 6: Starting Age of Work of Children In Different Occupations (Rural North Central Region)

Children's Age



Source: Save the Children (UK) (1997)

Both tables are taken from participatory research with working children in different locations of Vietnam. The scope of activities open to children in rural areas at earlier ages is much greater. Thus because of both the nature of the economic change in Vietnam and differences in the

activities of children between rural and urban areas, it is important to examine differences in child labor improvements by geographic area. We begin considering rural and urban differences. Then, we refine our discussion to consider differences across the ten main geographic regions in Vietnam.

Table 7: Participation in Child Labor (in last 7 days) by Residential Location for Children 6-15

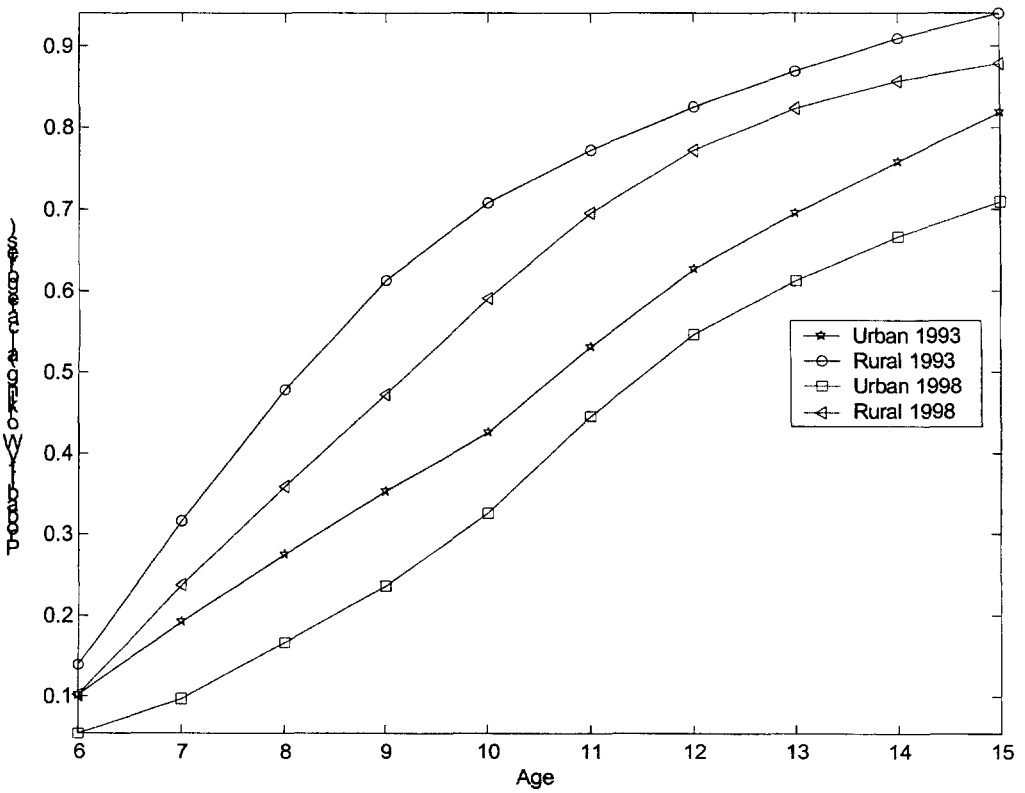
	1992/93		1997/98	
	Mean	S.E.	Mean	S.E.
Urban				
Works for wages outside of household	2.8	0.5	1.7	0.5
Works in Agr. in Hh	7.1	2.2	2.8	1.4
Works in Bus. in Hh	5.4	1.1	1.6	0.4
Works in Traditional Work	14.9	2.5	6.1	1.5
Works in Household Work	44.3	3.3	40.5	2.6
Works	48.7	3.4	42.2	2.6
Rural				
Works for wages outside of household	2.2	0.3	1.2	0.2
Works in Agr. in Hh	29.8	1.8	22.7	2.0
Works in Bus. in Hh	4.2	0.6	2.8	0.5
Works in Traditional Work	34.3	1.7	25.3	1.9
Works in Household Work	54.7	1.3	55.7	1.8
Works	65.1	1.4	59.8	1.8

Table 7 considers participation in each of the different work categories by geographic location. Participation rates are much higher in rural areas than in urban areas. This is true in both traditional work and household work. The extra participation in traditional work appears to be primarily in agriculture as children seem to have similar levels of participation in wage work or in household businesses in both urban and rural areas. The reduction in work participation rates through time is slightly greater in percentage terms in urban areas, although that appears to be largely because the probability that a child worked in urban areas in 1993 was smaller. One place where there is a notable difference in the changes in child labor through time between rural and urban areas is in the probability that a child works in a household business. Participation rates in a household business for a child in an urban area drops by 70% to 0.02 between 1993 and 1998. In rural areas, the incidence of working in a household business drops by 34%. This larger decline in

urban areas occurs despite generally higher participation rates in household businesses in urban areas in 1993. This may be the result of increases in rural, nonfarm enterprises[9]. We return to this issue below.

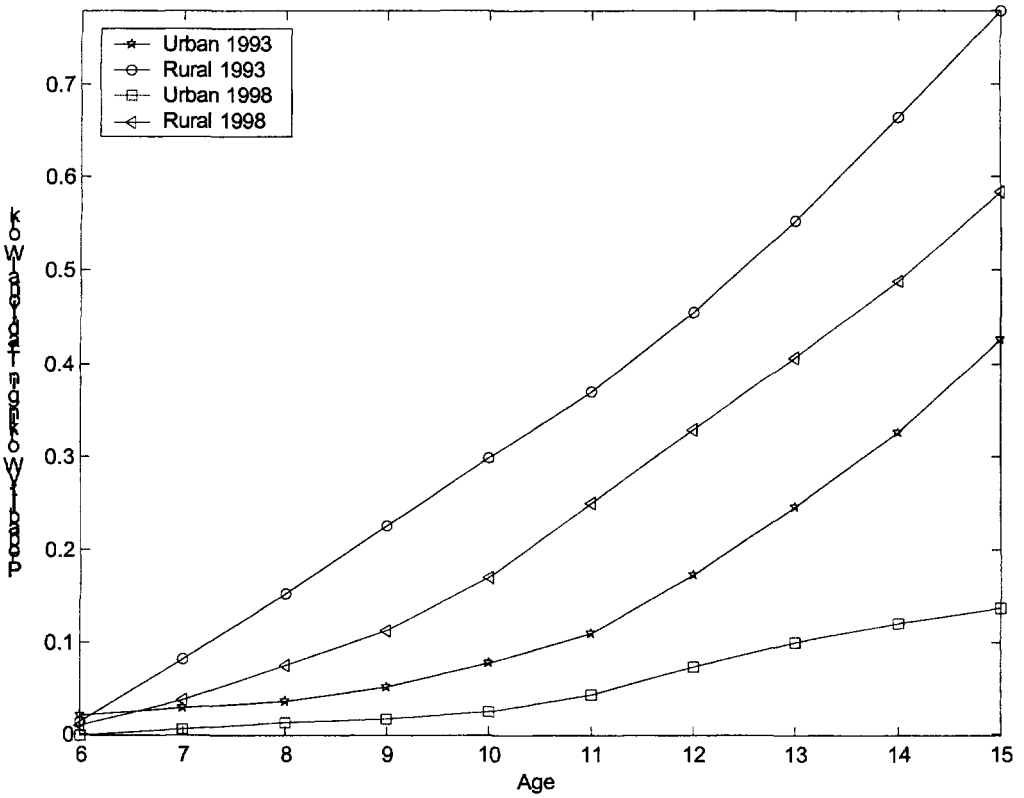
The description of child work in tables 5 and 6 suggest that there are important differences associated with age in the allocation of child time between urban and rural areas. Thus, we consider work participation rates by age. Figure 3 replicates the methodology that we employed in figure 1 (by age and gender pictures). Each line in figure 3 represents a separate regression for each urban and rural region as well as each round of the survey.

Figure 3: Participation in Work by Age and Location
A. All Work Categories



[9] Vijverberg and Haughton (2001) examines the growth and survival of household enterprises in more depth.

B. Traditional Work



Children in rural areas are much more likely to work, at every age, than are children in urban areas. Considering all forms of work (figure 3A), urban-rural differences in work probabilities appear largest for children age 8 to 11. It is this same group where we observe the largest reductions in work probabilities for rural areas between the 1993 and 1998 rounds of the VNLSS. Urban areas appear to experience an approximately uniform reduction in work probabilities between 1993 and 1998. Consequently, for children ages 8 to 11, rural-urban differences appear to decrease between 1993 and 1998, while for older children they appear almost unchanged.

When we consider traditional work (figure 3B), the evidence looks different. Here, the probability of working appears to decline more for older children in both rural and urban areas. Older children are much more likely to engage in traditional work, so it is not surprising that they would experience greater reductions in the probability of working in traditional work. As with all

forms of work, children in rural households are more likely to engage in traditional work at every age past 6. However, the largest reductions in traditional work appear to take place among older, urban children. Recent work on poverty in Vietnam shows how per capita expenditures in urban areas have risen twice as fast (by 9.9 percent per annum) over the 1993-1998 period as per capita expenditures in rural areas which rose at 5.4 percent per annum (World Bank et al, 1999). Given the strong correlation between household economic status and child labor participation documented by Edmonds (2001), these large reductions in traditional work for older, urban children are likely the result of the relatively high economic growth rates in urban areas.

Comparing households in different settings is difficult, because it is not unreasonable to argue that households in rural areas are fundamentally different than households in urban settings. The consequences of improvements in standards of living may be very different in the two different environments. Nevertheless, we wish to be able to compare improvements in child labor in one geographic region to another or in cities to towns to the countryside. In order to make this comparison, we employ a linear regression framework where we can control for many of the differences across households in Vietnam. In each regression, our dependent variable is an indicator that is 1 if a child works (in all work or in traditional work) and 0 otherwise. We estimate each regression using the linear probability model and control for differences associated with a child's age, gender, and the year of observation in each regression.[10]

In table 8, we consider how changes in child labor vary across the 10 main administrative regions of Vietnam. In addition to the age, gender, and year controls, we also control for time invariant household characteristics by including household fixed effects. These household fixed effects control for factors such as the remoteness of a household's location, its ethnicity, the

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[10] Age and gender differences are controlled for by a quadratic in age and gender plus all interactions. Standard errors are corrected for commune (psu) / survey round clustering and arbitrary heteroskedasticity.

household's size (but not changes in household size), the education of the head of the household, or any other household traits that do not change over time. Throughout this study, our regression results aim to document differences in declines in child labor across observable household characteristics. Our results should not be interpreted as the impact of any given characteristic on child labor. For example, the largest declines in child labor are in the Mekong River Delta. If we picked up a household from the Central Highlands and moved it to the Mekong River Delta, we do not have any reason to believe that the Central Highlands household would experience the same decline in child labor as other households in the Mekong.

Table 8: Regional Differences in the Decline in Child Labor
Linear Probability Model, Household Fixed Effects Results

Dependent Variable:	All Work		Traditional Work	
	Coef.	s.e.	Coef.	s.e.
Change in Rural Mekong River Delta	-0.250	(0.033)**	-0.181	(0.023)**
Changes Relative to the Rural Mekong				
Urban Areas				
Major Urban	0.191	(0.078)**	-0.024	(0.034)
Minor Cities	0.029	(0.056)	-0.027	(0.050)
Provincial Towns	-0.023	(0.063)	-0.026	(0.036)
Rural Areas				
N. Mt & Midlands	0.077	(0.041)*	-0.020	(0.047)
Red River	0.143	(0.050)**	0.066	(0.041)
N Central Coast	0.048	(0.051)	0.131	(0.051)**
S Central Coast	0.207	(0.051)**	0.073	(0.061)
Central Highlands	0.287	(0.095)**	0.079	(0.074)
Southeast	0.038	(0.059)	0.083	(0.038)**
Adjusted R2	0.432		0.410	

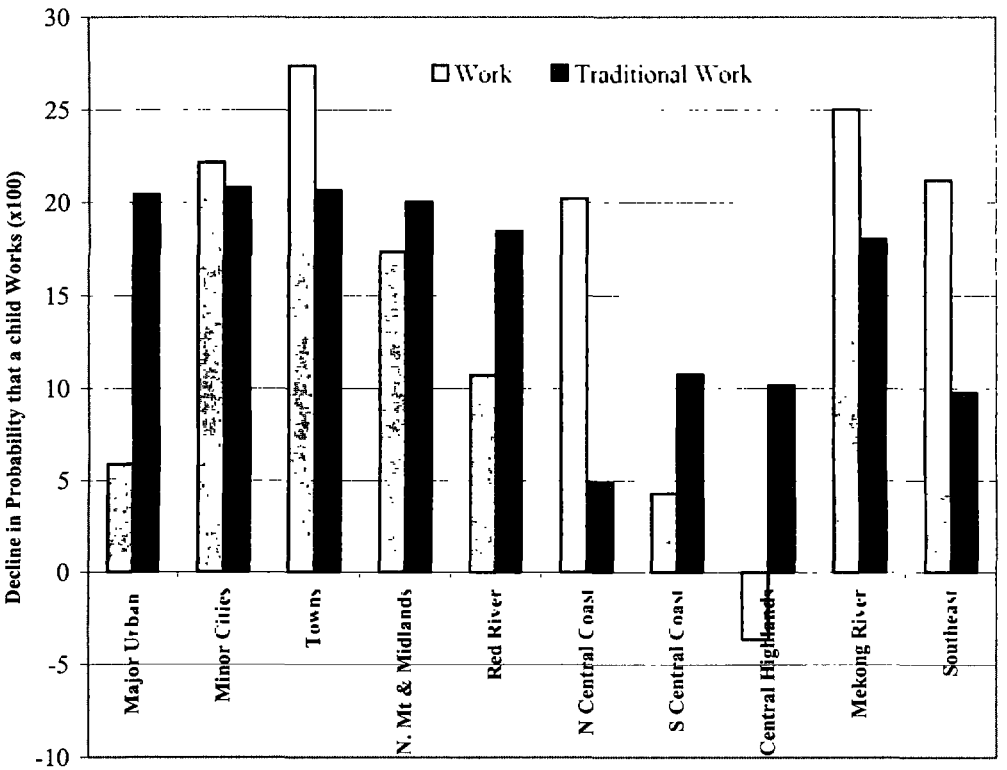
* is significant at 10%. ** is significant at 5%. Standard errors in parenthesis. All regressions include a quadratic in age and gender, a constant, a year effect, and household fixed effects. Standard errors are corrected for arbitrary heteroskedasticity and the cluster / time design of the survey.

In table 8, we show the change in child labor that occurs in the rural Mekong River Delta and the additional changes (relative to the Mekong) that occur in other administrative regions. Thus, in column 1, the probability that a child works in any type of work declines by .25 (or 25 percentage points) in the rural Mekong River Delta after controlling for household fixed effects and

child attributes. On the other hand, the probability in major urban areas that a child works in any type of work declines by only .059 (5.9 percentage points: -.250+.191). For all forms of work (column 1), we find that most areas of Vietnam decrease their child labor by less than the rural Mekong River Delta. The particularly large declines in child labor in the rural Mekong may stem in part from Vietnam's integration into world rice markets (Edmonds and Pavcnik 2001). The only place that experiences larger reductions than the Mekong is in provincial towns. However, for traditional work, major urban areas, minor cities, and provincial towns all decrease the probability that their children work by more than the rural Mekong River Delta.

We can calculate the percentage point change for each of the regions in table 8 in both all work and traditional work for every region. We present these changes graphically in figure 4:

Figure 4: Reductions in the Probability that a Child Works (in last 7 days) by Region, Household Fixed Effects Results



Provincial towns have experienced the largest reductions in both categories of work. On the other hand, we find an increase in the probability that a child works in the rural Central Highlands. The Central Highlands is the second poorest region in Vietnam with more than half the population living below the poverty line in 1998[11]. The incidence of "hunger poverty" barely fell at all in the period between the two surveys and the poverty gap index shows poverty to be deeper here than elsewhere in the country (Government of Vietnam, 1999; World Bank et al, 1999). School enrollment rates are lower in the Central Highlands than elsewhere in the country for all levels of education (Nga, forthcoming). The difference that we observe between traditional work and household work implies that this increase in work probabilities in the Central Highlands is driven by participation in household work, but there is an active labor market associated with the coffee plantations in the rural Central Highlands, and it is possible that this influences the results here. This could be the case if increased demand for adult labor shifts the burden of household work on to children. Also, the rural Central Highlands is a destination for migrant agricultural workers (including children) during the coffee harvest (SCF(UK), 1997) and this may also contribute to the unusual result here. There is also a concentration of ethnic minorities in the rural Central Highlands. Later, we find that the slight increase in children who work in the Central Highlands is not the result of the greater presence of minorities in the Central Highlands.

C. Other Household Characteristics

1. Living Standards

The effect of improvements in living standards on child labor has received substantial recent attention. Ample qualitative studies suggest that improvements in living standards in Vietnam have enabled children to work less. Interviews with working children in a range of different situations and locations identify the strong causal link between poverty and child labor. Though these studies

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[11] The poverty headcount and the incidence of food poverty here are calculated based on VNLSS consumption data.

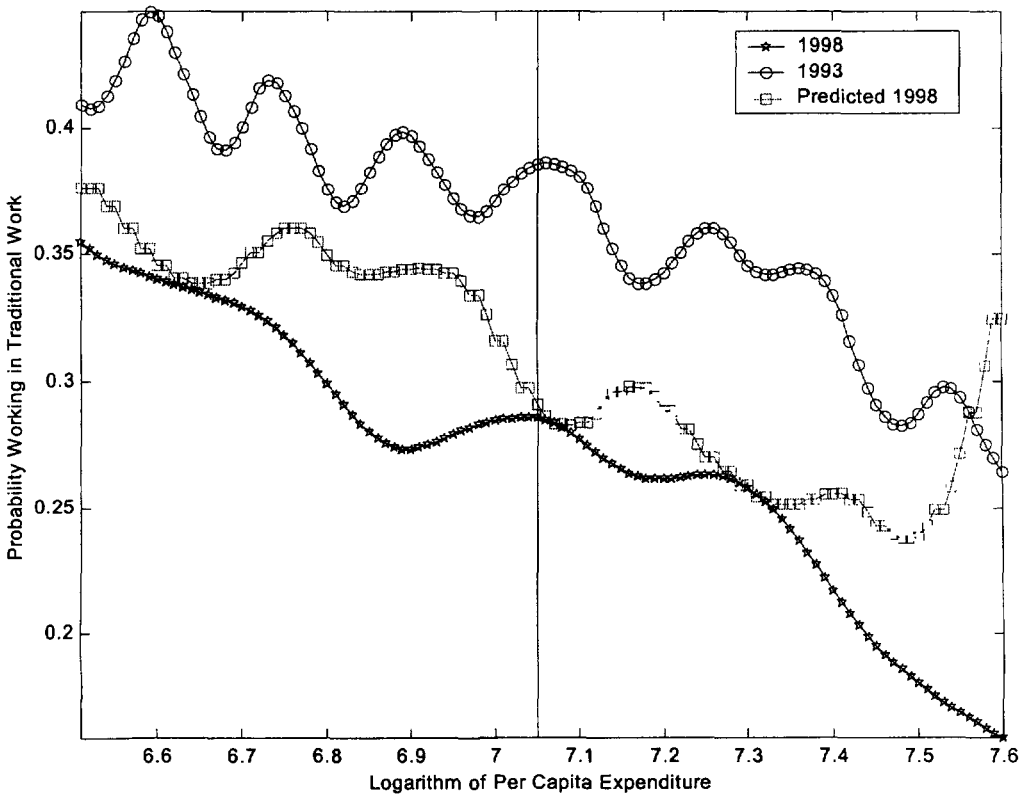
do not really permit authoritative quantification, they do indicate that the primary reason for leaving home to find work is grinding poverty for at least three quarters of the respondents. Very often this is tied in discussion to the need to assist families in paying of debts and servicing debt interest payments. These debts have often been acquired in response to a health crisis or other shock in the household (ILO/IPEC, 2000; Bond and Hayter, 1998) or to invest in housing (Youth Research Institute et al, 1999).

The experiences of households in the VNLSS appear consistent with this qualitative literature. In the VNLSS, we measure household living standards with the logarithm of per capita expenditure. 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 the expenditure measure in the VNLSS is designed to approximate household consumption. In the extreme, the permanent income hypothesis suggests that households consume their permanent income so that consumption represents the household's information about the income path before it.

Edmonds (2001) studies the relationship between living standards and child labor in the VNLSS, and his results are reproduced here. First (using nonparametric regression techniques), he calculates participation rates in traditional work across the entire range of the per capita expenditure distribution. His estimates for children in rural (A) and urban (B) households are in figure 5. Actual participation rates in 1993 are at the top of each picture (marked with a 'o'), and 1998 participation rates are at the bottom of each picture (labeled with a '*'). Second, using the VNLSS, Edmonds calculates by how much living standards improve for each household between 1993 and 1998. He then uses the cross-sectional relationship between child labor and living standards from 1993 (the 'o' line) to predict what child labor should be in 1998 based only on improvements in

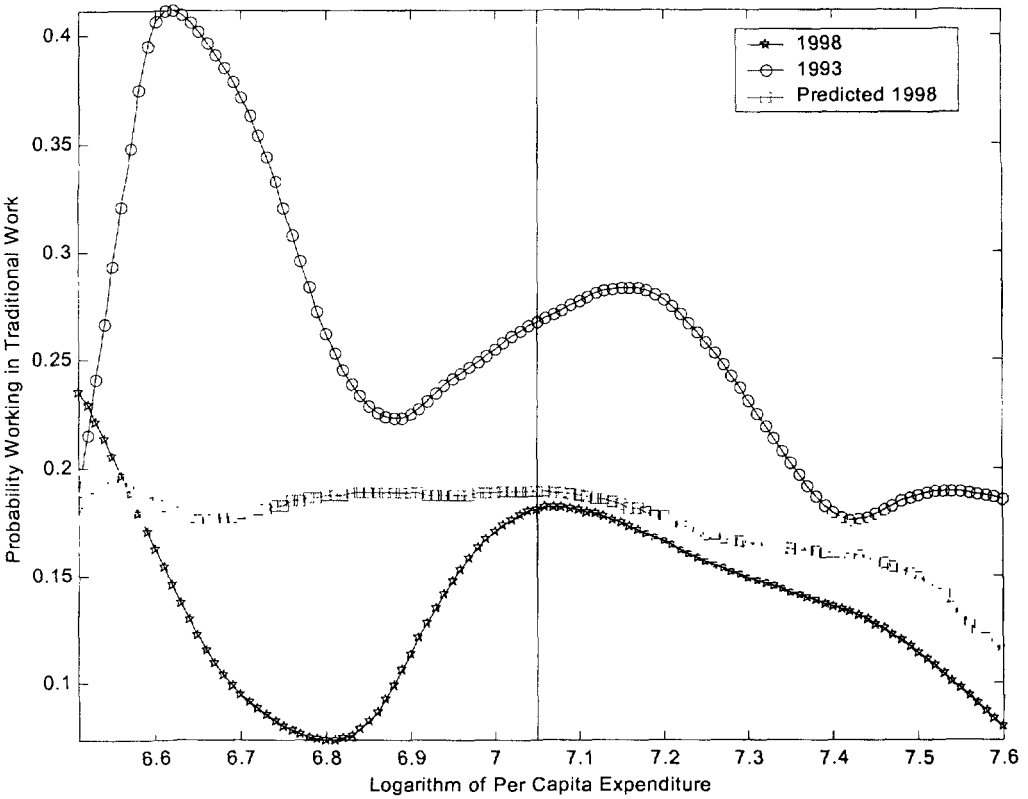
living standards. This prediction is the middle line in both graphs of figure 5 and is marked with a square. The vertical line in figure 5 is the 1993 poverty line.

Figure 5: Living Standards and the Decline in Child Labor
A. Rural Households



source: Edmonds(2001)

B. Urban Households



Generated for this study based on the methodology in Edmonds (2001)

Most of the decline in child labor experienced in Vietnam in the 1990s can be explained by improvements in living standards. For rural households at the poverty line, living standards can explain most (94%) of the drop in child labor. Improvements in living standards do less well for households below the poverty line in 1993. In urban households, living standards improvements can explain 91% of the decline in child labor in urban households at the poverty line in 1993, and they can account for 67% of the fall in child labor experienced in households that are within one standard deviation (of 1993 per capita expenditure) of the poverty line. Above the poverty line, living standards improvements also explain most of the drop in child labor in urban households. Improvements in living standards vary a great deal across households in Vietnam, and in the

remainder of this paper, we consider how improvements in child labor vary across different subgroups of the population.

2. Migration

Many case studies highlight migrants as a particularly vulnerable group in Vietnam. A participatory poverty assessment in Ho Chi Minh City (SCF (UK) 1999) illustrated the multiple disadvantages faced by migrants, particularly those who lack official registration. Official registration can be important in determining the access of migrant children to mainstream education and the access of migrant families to subsidized health care and credit facilities (World Bank et al 1999). Migrants are often moving as a result of economic circumstances, so we expect children in migrant households to be more apt to need to work. In addition, the process of migration itself may influence the likelihood that a child works because of the disruption in the child's life associated with the move.

Figure 6 considers the relationship between work participation and whether or not the household head has ever moved. We define a household where the head has ever moved as a "migrant" household.[12] Households that have moved are more likely to have children work in both traditional and all forms of work in both 1993 and 1998. When we consider work as traditional and household work (figure 6A), we find that participation rates in child work are very similar in-migrant and nonmigrant households for all ages in 1993. In fact, for children age ten and above, the probability that a child works appears virtually identical across migrant and non-migrant households. In 1998, however, we observe much larger differences between migrant and non-migrant households. This difference owes to large declines in the probability that a child works in

[12] In practice, most households that report the head having ever moved report doing so within the last 5 years. Hence, using a more narrow definition does not affect our conclusions.

non-migrant households. Further, the distinction between migrant and non-migrant households appears to increase especially for ages 11-14 (part of the group that looks identical in 1993).

Figure 6: Participation in Work by Age and Migration Status of Head
A. All Work Categories

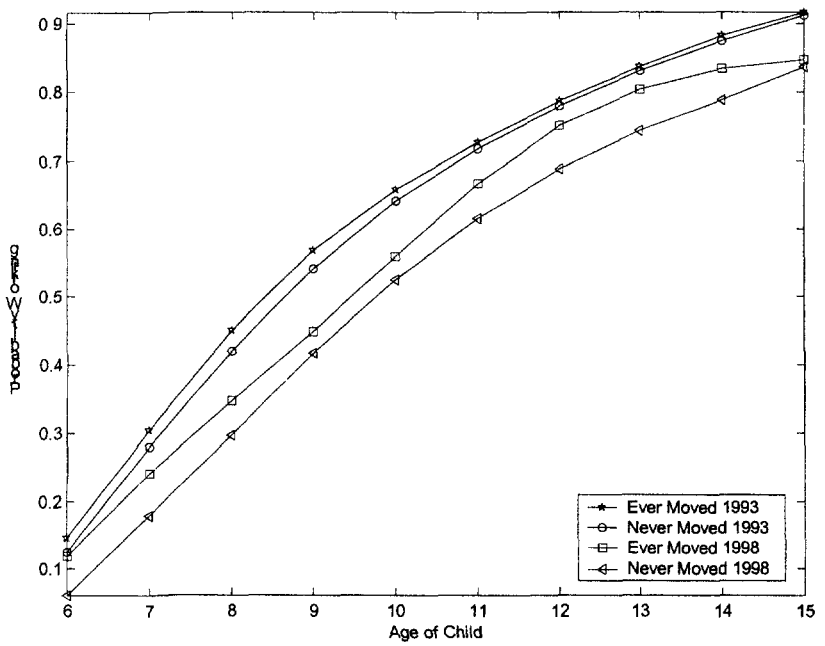
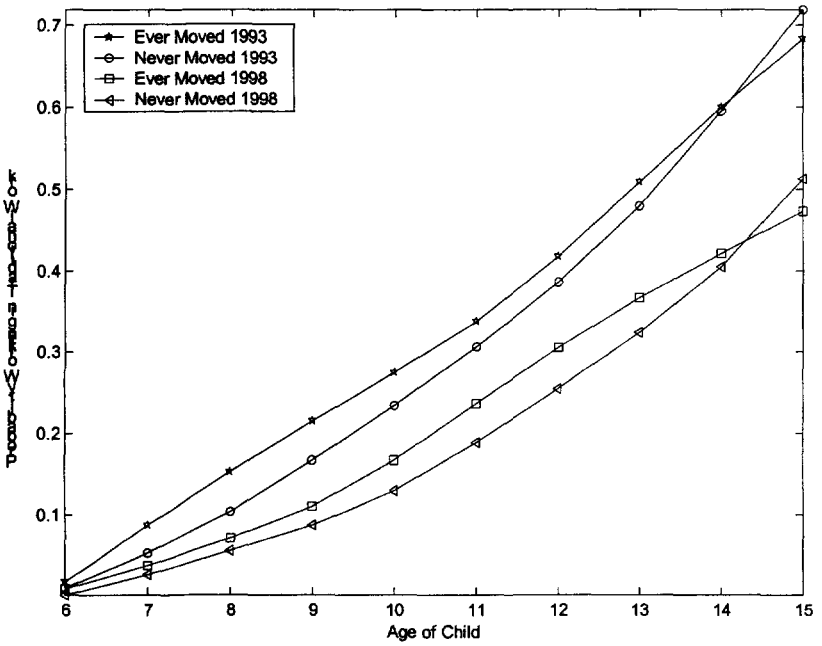


Figure 6B presents the probability that a child works in traditional work by age and migration. We observe declines in the probability that the child works in traditional for both types of households much as we have seen throughout this paper. In traditional work, we observe greater drops in participation in traditional work for non-migrant children between the ages of 10 and 13. Interestingly, for 15 year olds, migrant households actually have a slightly reduced probability of working in traditional work.

B. Traditional Work



Of course, heads that have moved are likely substantively different than heads who have never moved. Hence, we return to our regression methodology described in the context of table 8. These results are in table 9. Columns 1-4 focus on participation in all forms of work as in figure 6A and columns 5 and 6 are for participation in traditional work only. To gauge the relative changes in child labor for households who heads have ever moved in 1993, we include a variable that is the interaction of head ever moved before 1993 and a variable to indicate that an observation is from 1998. Hence, the interpretation of the first row in table 9 is the change in child labor participation experienced by a household where a head ever moved before 1993 relative to the change in child labor experience by households where the head has never moved. Thus a positive regression coefficient indicates smaller declines in child labor for households where the head moved and a negative coefficient indicates larger declines for ever-movers.

Table 9: Adult Migration History and Child Labor (in last 7 days)
Linear Probability Results

Dependent Variable:	All Work				Traditional Work	
	(1)	(2)	(3)	(4)	(5)	(6)
Head Ever Moved*1998	0.017	-0.011	-0.003		-0.028	
	(0.019)	(0.013)	(0.022)		(0.020)	
Father Resident				0.028		-0.036
				(0.038)		(0.028)
Mother Resident				-0.016		0.038
				(0.046)		(0.037)
Head Move				0.059**		0.034*
				(0.020)		(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	0.260	0.372	0.431	0.432	0.410	0.410

* 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. 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 labor in households where the head had moved before 1993 in addition to the general decline in the population.

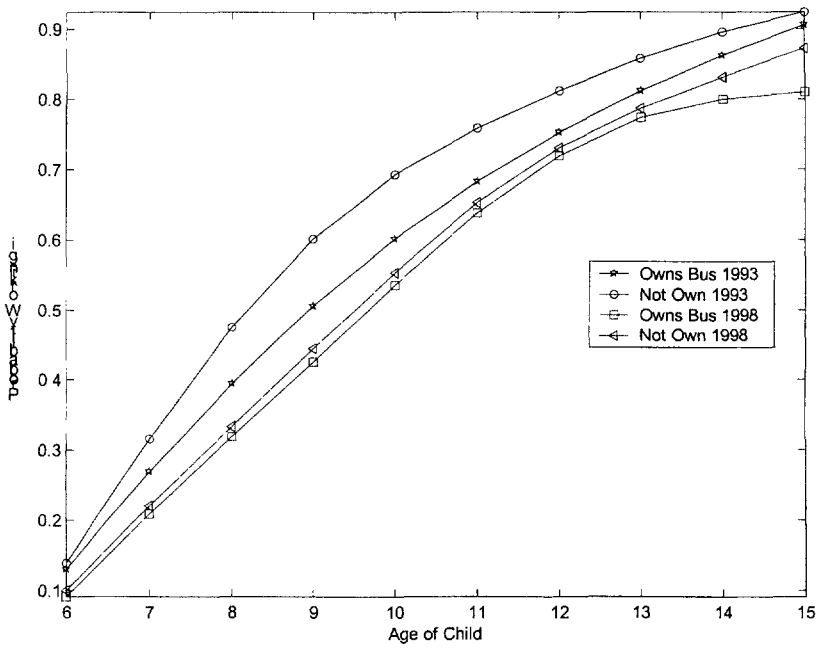
After controlling for child characteristics, we find in column 1 of table 9 that households where the head has ever moved experience smaller declines in child labor. However, households with a head who has moved may be located in different areas than households where the head has never moved. For example, there may be more people who have moved in cities than in remote rural areas. Hence, in column 2, we control for differences in the residential location of ever movers with commune fixed effects. We also control for differences across regions in the declines in child labor with region * time effects (these are the regression coefficients in table 8). After controlling for differences in the location of movers, our results change. In column 2, we observe greater reductions in ever-mover households. Controlling for household differences (in column 3), attenuates the relationship between ever movers and child labor further. Hence, most of the differences in figure 6 appear to owe more to differences in the location of households with heads who have moved rather than being something intrinsic about moving itself. We observe a similar result for traditional work in column 5.

In general, the VNLSS does not capture households that move between 1993 and 1998. However, we do observe households where 1 or more members have departed or returned. In columns 4 (all work) and 6 (traditional work), we examine the effect on child labor of having the residency patterns of parents or the household head change. We observe a substantially smaller decline in child labor in households where the head has changed between rounds of the VNLSS. This smaller decline in child labor appears to be in both household work and traditional work, because we observe a significant, but slightly smaller effect of changes in the head on traditional 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 that cause both.

3. Enterprise Ownership

Whether or not a household owns a business is likely to influence the economic activities of children. It is easier for a child to work inside its home than for an outside employer, so we might expect to see more child labor in households with home enterprises. Further, it is often easier for children to begin to contribute to home enterprises at an earlier age than it is for a child to perform the manual labor of agriculture. On the other hand, generally richer households can afford to start home enterprises. Wealthier households often enjoy better access to formal financial services and information, both of which are important in the establishment of household enterprises (World Bank, 1999). We consider three issues here. First, are households with home enterprises more likely to have children work? Second, are changes in child labor different in households with and without a home enterprise? Third, are changes in child labor associated with changes in home enterprises?

Figure 7: Participation in Work by Age and Household Enterprises
A. All Work Categories



B. Traditional Work

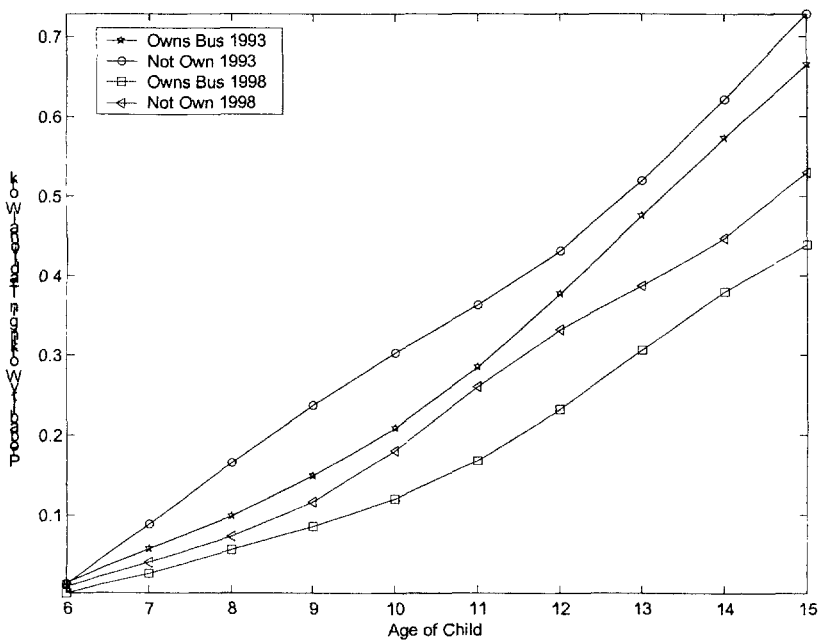


Figure seven considers the probability that a child works by whether the household operates its own enterprise. As we have seen in every picture, we see uniformly lower probabilities that a

child works in 1998 for both traditional and all work participation rates. There are two interesting characteristics that are unique to figure 7. First, in both work categories and years, children in households without a household business work more than children in households with a household business. This is difficult to explain, but we suspect (and find supporting evidence in the next paragraph) that this result is attributable to the fact that households with family businesses live in richer areas and are richer on average than households that do not operate a family business. Second, in 1998, the difference between households with and without a family business is greater in traditional work than in all work. This suggests that children that are performing generally less traditional work in households with a business must be contributing more household work in 1998 than are children in households without business. This extra household work in households with businesses in 1998 appears especially large for children between the ages of 9 and 13.

Much of the extra decline in child labor associated with the ownership of a household business appears to come from the location of household enterprises. In table 10, we return to the regression approach employed in table 9. In columns 1 and 4 for all work and traditional work respectively, we control for age, gender, and year of survey differences. We find greater declines in child labor in nonfarm, rural households and in households that own a business. In fact, the probability that a child works in all work categories is a statistically significant 6.6 percentage points lower in a rural, nonfarm household that own a business works than in a rural farm household. As in figure 7, the incidence of traditional work is even lower. However, once we control for commune differences and region*time differences, we actually observe slightly higher, but not significantly different than zero, rates of participation in both all work and traditional work.

Table 10: Enterprise Ownership and Child Labor (in last 7 days)
Linear Probability Results

Dependent Variable:	All Work			Traditional Work		
	(1)	(2)	(3)	(4)	(5)	(6)
Nonfarm, Rural HH	-0.031	-0.023		-0.074**	-0.056**	
	(0.023)	(0.015)		(0.018)	(0.016)	
Owns Business	-0.035**	0.009	0.039**	-0.040**	0.005	0.036*
	(0.014)	(0.010)	(0.017)	(0.014)	(0.011)	(0.020)
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	0.410

* 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.

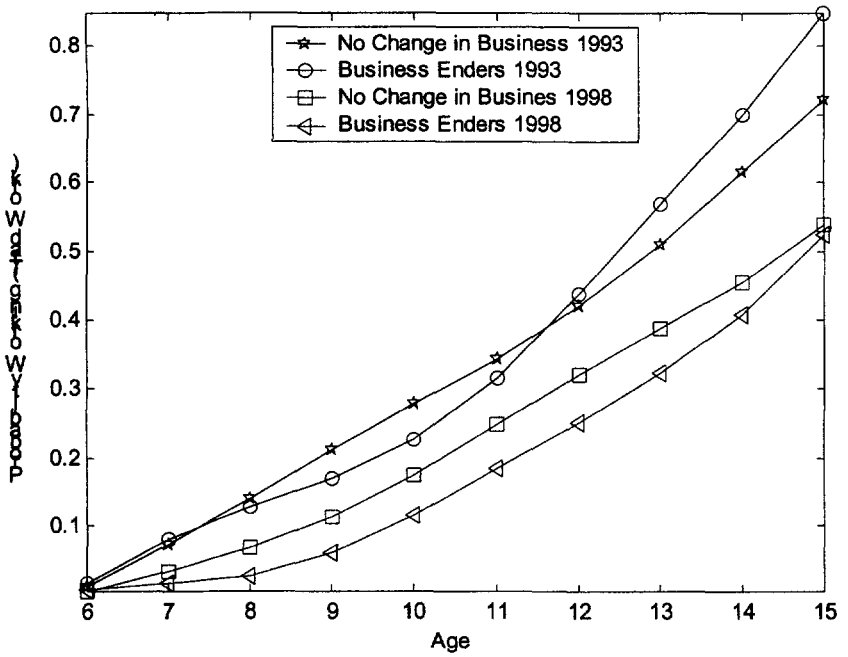
While we cannot reject the hypothesis that the differences in child labor associated with enterprise ownership observed in figure 7 stem from differences in the location of enterprises, we find strong evidence that changes in household enterprise status are associated with changes in the economic activities of children. In column 3 and 6 of table 10, we control for household differences with household fixed effects, and we also include a variable that indicates whether a household owns a business. With the household fixed effect, the coefficient on this variable is interpreted as how a change in whether the household owns a business is associated with changes in child labor. In both traditional work and household work, creating a new household business between rounds of the VNLSS is associated with smaller reductions in the probability that a child works. The effect of owning a household business is slightly larger for all work than for traditional work. Thus, the creation of a household business seems to lead to more work (relative to a child in a household that did not create a business) for children in both traditional and household work.

The changes in household businesses that take place between 1993 and 1998 involve both openings and closings. Thus, the finding that creating a household business leads to more work relative to a child in a household that did not open a business also implies that closing a household business is associated with a larger decline in the probability that a child works. In figure 8, we

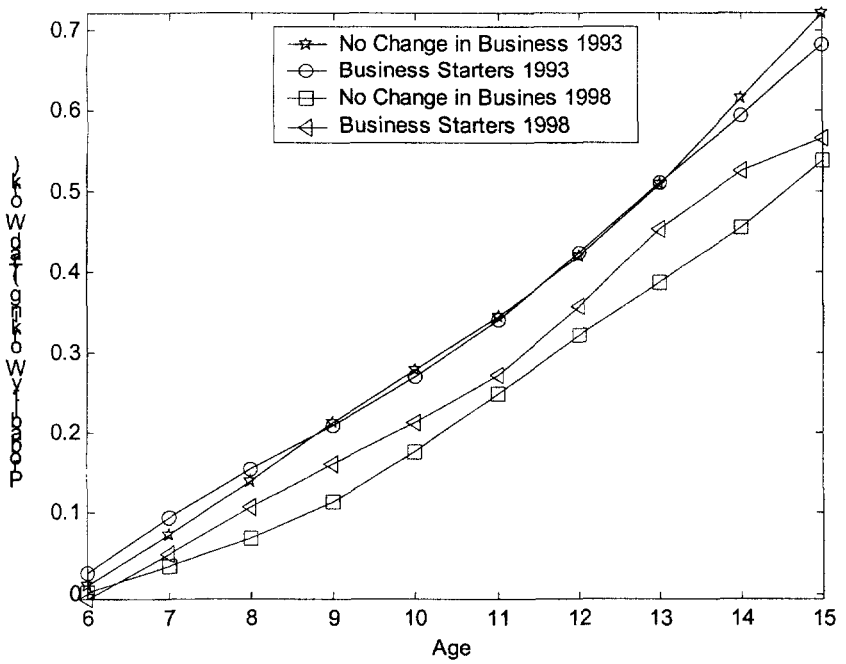
compare children in households that open and close a family business between the 1993 and 1998 rounds of the VNLSS to children in households that had no change in the family business.

Figure 8A compares children in households with businesses that closed between 1993 and 1998 (more precisely, the household reported at least one enterprise in 1993 and did not report any enterprises in 1998) to children in households that did not change their household enterprise status. Figure 8B compares children in households with businesses that opened (no enterprise reported in 1993; at least one enterprise reported in 1998) to children in households that did not change.

Figure 8: Participation in Traditional Work by Age and Household Enterprise Change
A. Close Business



B. Open Business



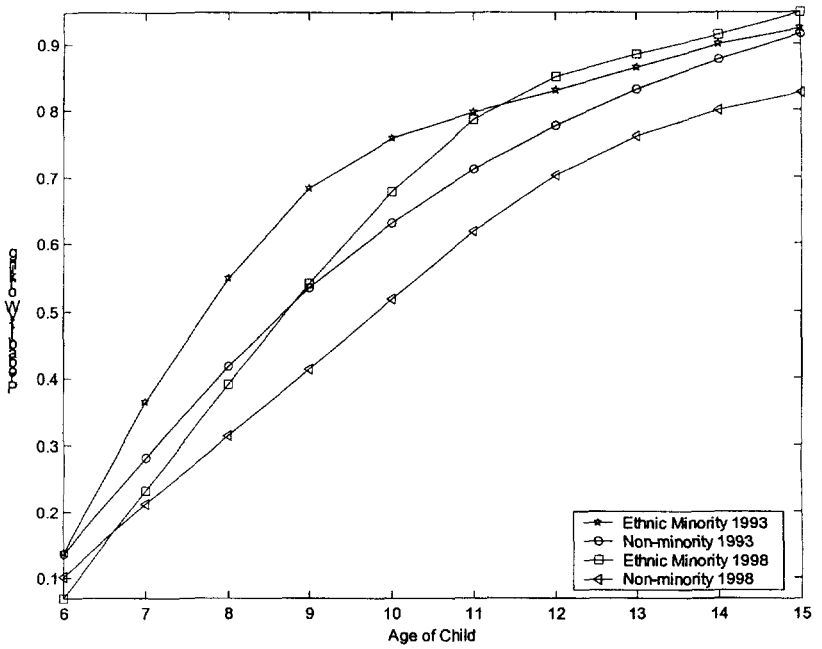
Two interesting trends emerge from figure 8. First, (in figure 8A) households whose businesses end between 1993 and 1998 experience larger reductions in the probability that children 12-15 participate in traditional work than households without a change in enterprise status. Younger children appear to experience approximately the same drop in households that close and do not close businesses. This large drop in child labor for older children in households that close their business appears to come from the fact that these older children in 1993 are more likely to be working in traditional work. We believe a potential explanation for this higher level of work is that these older children are working in order to help in the household business. We are surprised that children in households who closed businesses have lower work probabilities than the general population. Households owning businesses in 1993 are generally wealthier (in 1993 and 1998) than households who do not, and it is possible that this explains why they have lower work probabilities in 1998 than the general population. This would then imply that the closure of the household enterprise was not a permanent, negative shock to household well-being. Second, we observe (in

figure 8B) that children in households that open enterprises between 1998 and 1993 experience smaller drops in child labor between 1998 and 1993. In 1993, households that open enterprises between 1993 and 1998 and households that have no change in enterprises between 1993 and 1998 appear to have very similar probabilities of having a child work in 1993. However, children in households that open enterprises work more in 1998. This is true at every age but it appears largest for ages 12 and 13. This trend takes place despite the fact that households that create new enterprises are generally better-off than households who do not. Hence, households in new businesses appear to rely on family labor to help with the business.

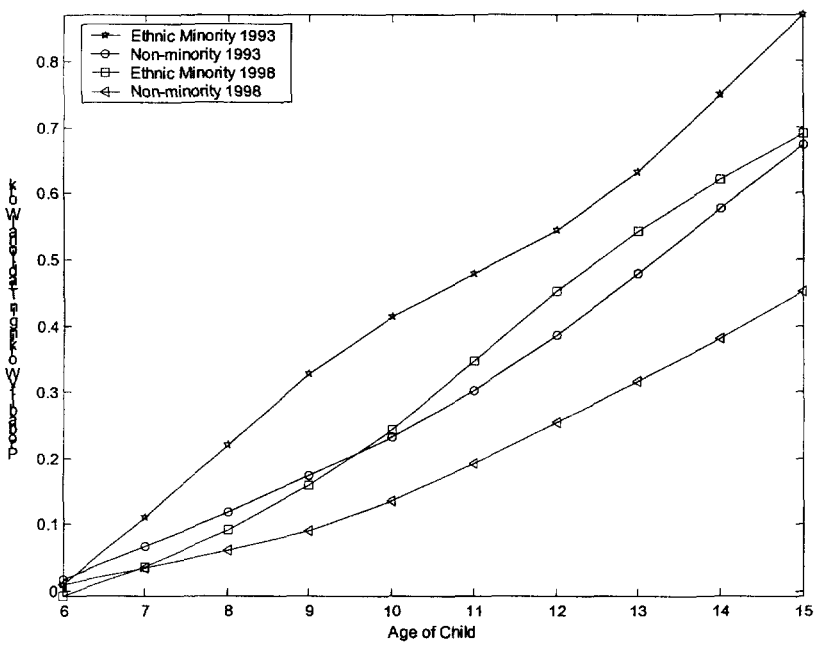
4. Ethnicity

Recent analysis of poverty in Vietnam illustrates that consumption poverty among ethnic minority groups is declining far more slowly than for the majority population (World Bank et al 1999, Baulch et al 2001). Social indicators for ethnic minority groups also lag behind. Because we know that reductions in child labor in general have been closely associated with improvements in per capita expenditures it is important to examine how child labor has moved for those groups whose poverty appears to be particularly intractable. The unusual trends observed in the rural Central Highlands (figure 4), where a concentration of ethnic minorities lives raise the possibility that child labor for ethnic minorities is not reducing as rapidly as for the majority. The question of this section is whether there is any evidence that children in minority households have reduced their child labor by less than the majority ethnic groups.

Figure 9: Participation in Work by Age and Ethnicity
A. All Work Categories



B. Traditional Work



In both traditional work and household work, ethnic minorities tend to work more than non-minority groups. In the "all work" category, we observe a slight increase in the probability that

ethnic minority children above age 11 work between 1993 and 1998. For traditional work in figure 9B, we see that ethnic minority children in 1998 work more than non-minority children in 1993. However, we do not observe an increase in the probability that children work between 1993 and 1998 in traditional work. Thus, part of the increase between 1998 and 1993 in "all work" must stem from increases in household work.

The differences between ethnic minorities and others in the 'all work' category appears to be largely the result of differences in the geographic location of ethnic minorities. However, in traditional work, we find differences between ethnic minorities and others even when we control for household fixed effects. Our linear regression results are in table 11.

Table 11: Ethnic Minorities and Child Labor (in last 7 days)
Linear Probability Results

Dependent Variable:	All Work			Traditional Work		
	(1)	(2)	(3)	(4)	(5)	(6)
Ethnic Minority*1998	0.117**	0.028	0.017	0.124**	0.063**	0.084*
	(0.033)	(0.022)	(0.035)	(0.044)	(0.027)	(0.046)
1998	-0.100**	-0.195**	-0.252**	-0.135**	-0.163**	-0.189**
	(0.024)	(0.028)	(0.033)	(0.024)	(0.020)	(0.024)
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	0.264	0.372	0.432	0.197	0.352	0.411

* 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. Ethnic Minority is a dummy variable that is 1 if the household was identified as a minority household in the VNLSS in 1993. It is interacted (row 1) with the 1998 indicator so that the reported coefficient has the interpretation of being the extra change in the probability a child works in a minority household relative to the decline experienced by non-minority households.

We report two variables in table 11. The 1998 indicator reports the average decline in child labor across all households between 1993 and 1998. The coefficient on 'ethnic minority*1998' reports the extra increment experienced by ethnic minorities. In column 1, we control for child attributes and find that child labor appears to increase in "all work" for ethnic minorities between 1993 and 1998. In traditional work (column 4), we observe a 13.5 point decline in child labor in non-minority households between 1993 and 1998 but only a 1.1 point decline for minorities. In columns 2 and 5,

we control for community fixed effects and region * time effects. In all work, we are unable to reject the hypothesis that minorities experience the same decline as the rest of the population. However, we still observe a statistically significant, smaller decline in child labor in traditional work for minority households. In columns 3 and 6, we control for household fixed effects. This further attenuates minority and non-minority differences in all work. However, we still observe significantly smaller declines in traditional work for minority households. Interestingly, in the region * time effects (not pictured in table 11), for both traditional work and "all work", controlling for a household's minority status does not change the fact that households in the Central Highlands experience smaller improvements in child labor than do households in the rural Mekong.

IV. Conclusion

This paper demonstrates overwhelming evidence of a reduction in child labor over the 1990's. This holds true for rural and urban areas, for all regions of the country except the rural Central Highlands, for all kinds of work, for all age groups (except for ethnic minorities age 10 and above) and for both sexes. The survey of qualitative work presented here suggests that rising living standards have been important in driving this reduction in child labor, and the quantitative results of this and other studies are consistent with these qualitative findings. In 1998, girls are more likely to work than boys in all age groups and the difference between the sexes becomes slightly wider with age. Children in rural areas are much more likely to work than urban children and this difference is particularly remarkable for children participating in traditional work. Ethnic minority children are more likely than non-minority children to work at all ages and in all work categories.

The evidence from qualitative and quantitative work is that children still working are doing so because their families are too poor to support the basic needs of the family without the economic contribution of the children. This link between poverty and child labor is clearly very important in shaping appropriate policy responses and public action. It indicates, first, that a future development

path that puts equitable growth and poverty reduction at its core (such as the Government of Vietnam has recently articulated in its Socioeconomic Development Strategy 2001-2010) is likely to generate further reductions in child labor. Secondly, it demonstrates that at the household level, there should be concern surrounding the hardship that could confront poor families - including their children - if attempts are made to eliminate child labor without due consideration to the consequences for household income. This underscores the need for Government responses to child labor to be formulated in a participatory way which involves all stakeholders at appropriate times, including working children and their families. Mechanisms to involve vulnerable children in planning are not well developed within Government, though there have been some interesting innovations piloted by non-Governmental organizations.

These trends identified from the analysis of the VNLSS data are undeniably positive in terms of child welfare. But it would be misleading to suggest either that the problem of child labor will completely evaporate as the economy continues to grow over the next decade or that child labor has reduced to the extent of becoming a non-problem for policymakers. Economic growth over the 1990's has not delivered benefits evenly across all groups of children and households and there are a number of concerns remaining despite the general pattern of improvement.

First, though the trends indicate that working children have reduced the number of hours they work during the 1993-1998 period, there is clear evidence (Fig 1) that there is a group of child laborers, with many girls, involved in traditional work who are still working hours well in excess of the legal maximum set for their age group (24 hours per week). Indeed, these under-15 year olds are working hours well in excess of the legal maximum (42 hours) for an older category of 15-18 year olds. The fact that they are working outside legal limits suggests that enforcement of child labor regulations is not influencing their work patterns and must raise the question of whether other safeguards designed to protect young workers are effectively enforced. The VNLSS tells us little

about this, but other studies suggest that these safeguards may not be enforced (Institute of Labor Studies and University of Wollongong, 2000). As the environment for enterprise development improves and more competition is introduced, working conditions may become an issue of importance. Limited information on labor standards and working conditions is publicly available. MOLISA conducts regular Labor Force Surveys, but these alone may be unable to pick up potential problems of deteriorating labor standards – particularly for children – as industrial growth continues.

Secondly, at every age group girls are more likely to work than boys (fig 2). In particular, the evidence is that they bear a greater burden of household work at every age than do their male counterparts. The literature on women in Vietnam illustrates clearly that this is a pattern which continues into adulthood and which sees women shouldering heavy daily workloads (World Bank et al, 1999; Population Council, 1999). Although net enrollment rates in primary school are similar for boys and girls for the country as a whole, there is a disparity in the lowest expenditure quintile of the population (where 80% of girls are enrolled in school against 84% of boys). It appears that girls may be more vulnerable than boys under situations of economic stress.

Actions to address gender-based inequities in decision-making within the household are likely to be fundamental for reducing the domestic workload of girls. This, in turn, is likely to require longer-term attitudinal change by both men and women to overcome gender-based stereotyping of roles and responsibilities. More immediately, there is scope for further research into the vulnerabilities of girls in poor households and for an assessment of specific interventions that might reduce their work burden.

Thirdly, ethnic minority children work more than non-minority children at all ages. Qualitative studies suggest that concerns raised over differences in work patterns for boys and girls may be particularly acute in ethnic minority areas and that the burden of work inside the household

for girls is likely to be more onerous and more likely to interfere with education for girls than for boys (VN-Sweden MRDP, 1999; Duong Van Thanh, 1997). For traditional work, ethnic minority children have experienced smaller reductions in the likelihood of working than have non-minority children. Other work shows how ethnic minority children suffer multiple disadvantages. They are more likely to live in poverty, have less access to health and education services (World Bank et al, 1999 and World Bank, 1999), are more likely to be malnourished and are less likely to survive childhood (Ministry of Health, 2000). Their parents are less likely to have access to information and are more likely to be isolated from broader policy- and decision-making processes (World Bank et al, 1999). Addressing child labor among ethnic minority groups is unlikely to be effective if many other deprivations they face are not simultaneously addressed. These are critical areas for public action that should form part of the ethnic minority development plans that the Government of Vietnam has undertaken to formulate over coming years (Socialist Republic of Vietnam, 2001).

Fourthly, some of the patterns observed raise the question whether Government of Vietnam development strategies for the next 10 years might exacerbate some forms of child labor. The Government of Vietnam's Socioeconomic Development Strategy to the year 2010 implies that rural-urban migration is likely to increase (the urban population is predicted to increase to 30-33% by 2010, a rate of increase beyond natural population growth). Though VNLSS data is likely to exclude much of the unregistered migrant community in urban areas, we still find in this paper that children of migrants are more likely to work than average. This is strongly reinforced by other studies (SCF (UK), 1999; Caseley and Buom, no date). Children of migrants demand particular attention in the future if a concerted program of support to child laborers is to be developed as Vietnam becomes more urbanized. In particular it will be important to ensure that children of migrants are not denied access to basic services on account of their residential status (as SCF (UK) 1999 documents).

Fifthly, government strategies (MARD, 2000; Communist Party of Vietnam, 2000) envisage a shift in the rural economy that places far greater emphasis on off-farm activities and employment generation. This is widely accepted as being an important step in raising agricultural productivity and incomes and reducing rural poverty (World Bank, 2000) and, by extension, child wellbeing. Our analysis shows that children in households that start new enterprises work more than do children in households without enterprises or with stable, long-term enterprises. It is necessary that agencies concerned with child welfare remain vigilant to possible changes in the profile of child labor as rural livelihoods become more dependent on off-farm sources of income.

A sixth area of concern relates to education. Though enrollment rates in primary education are high for a country of this level of per capita GDP and are good for both non-working and most categories of working children (table 3), children who work outside the household emerge very clearly as a group who are educationally at risk. These children need to be targeted carefully under the Government of Vietnam's Education For All initiative. Children's ability to combine work and education may be undermined as full-day primary schooling is introduced over the next few years. Education may well become less compatible with working while simultaneously becoming more expensive if the costs of extending the hours of education are borne privately. It is too early to anticipate what the impact of this change might be on child labor, but careful monitoring will be important.

Finally, there are categories of child labor which defy easy monitoring but which are both harmful – falling within the ILO description of the "worst forms of child labor" – and, reportedly on the rise. Though there are no clear estimates for example of the number of children involved in the commercial sex industry, some studies indicate that the sex industry is expanding rapidly and as

many as one third of commercial sex workers are children[13] (ILO/IPEC, 2000). Street children and underage domestic workers are vulnerable to abuse because of the nature of their work and are likely to be neglected or underrepresented in current data collection. The scale of child labor in these areas is really very difficult to assess given current information but reports suggest that it is on the rise (Bond and Hayter, 1998; Youth Research Institute et al, 1999; Swedish SCF et al, 2000). There have also been reports that children working in gold mines are both unregistered (and unenumerated) and "forced" to stay through practices of withholding wages (SCF (UK) 1997). It will be important to generate more reliable indications of the extent of these very harmful and exploitative forms of child labor if effective action is to be designed and implemented.

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[13] "Children" here are defined as people under 18 since Vietnam's laws expressly forbid the involvement of those under the age of 18 in the sex industry. One study calculates that nearly 90% of sex workers are children (quoted in Bond and Hayter, 1998).

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