Small Hands Should Play, Not Work:
A Theoretical Analysis of Interventions in Child Labor

by

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Abstract

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Supervisors: Gaute Torsvik (UiB) and Magnus Hatlebakk (CMI)

Twelve hours a day, 7 days a week, there are 150 million children below the age of 15 working to make the clothes we wear, the carpets on our floors and the phones in our pockets. Most of these children do not have a choice: the alternative is worse. In this thesis, I use economic models to study how interventions (such as increased educational opportunities, firmer legislation, international conventions and product labeling) affect the incidence of child labor. I find that most interventions are likely to reduce the incidence of child labor either at a national level, a local level or in a specific industry. Some interventions (such as bans) are more likely to reduce the welfare of children than others (such as increased educational opportunities). It appears that if households do not chose by themselves to withdraw children from the labor market and are not given any form of compensation for lost income, the welfare of households (and thus the children as well) is reduced. Having this in mind, I take a closer look at one intervention in the carpet sector in Nepal: the Nepal GoodWeave Foundation. This organization labels carpets that are exported to countries such as Germany and the U.S. I find that GoodWeave is successful in reducing child labor in the factories that carry their label. At the same time, the organization helps to maintain the welfare of the children through education programs, in addition to preventing child labor by offering the children of carpet workers access to kindergartens and schools. Unfortunately, the scope of the program is too small to eliminate child labor throughout the carpet sector in Nepal.

Sammendrag

Små hender skal leke, ikke arbeide:
En teoretisk analyse av tiltak mot barnearbeid

av

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Universitetet i Bergen, 2011

Veiledere: Gaute Torsvik (UiB) og Magnus Hatlebakk (CMI)

Tolv timer i døgnet, året rundt, arbeider 150 millioner barn under 15 år med å produsere klærne vi går i, teppene vi går på og mobilene vi har i lommen. De fleste av barna har ikke noen valgmuligheter, alternativene er så mye verre. I denne masteroppgaven ser jeg på hvordan inngrep rettet mot barnearbeid kan påvirket omfanget av fenomenet. Ved hjelp av økonomiske modeller analyserer jeg hvordan tiltak som utdannelsestilbud, lovverk, internasjonale konvensjoner og produktmerking påvirker dagens situasjon. Jeg finner at alle tiltak sannsynligvis vil redusere barnearbeid nasjonalt, lokalt eller i en spesifikk industri. Samtidig har enkelte tiltak (som forbud mot barnearbeid) en større sannsynlighet for å redusere velferden til barna enn andre (som utdannelsestilbud). Det kan se ut som om dersom husholdningene ikke selv velger å ta barna ut fra arbeidsmarkedet eller er kompensert for den tapte inntekten, vil velferden til husholdningen og dermed også barna bli redusert. Med dette som bakteppe har jeg sett nærmere på ett tiltak i teppesektoren i Nepal – Nepal GoodWeave Foundation. Denne organisasjonen arbeider med produktmerking av tepper som eksporteres til blant annet Tyskland og USA. Jeg finner at organisasjonen lykkes i målet om å redusere barnearbeid hos fabrikkene som bærer deres etikett. Samtidig, bidrar de til å beholde barnas velferd gjennom utdannelsesprogram, samt forhindre barnearbeid ved å tilby barn av teppearbeidere tilgang til barnehager og skoler. Likevel er dessverre omfanget av programmet for lite til å eliminere barnearbeid i hele Nepals teppesektor.

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Chapter 1: Introduction

Working children do not constitute a new phenomenon. In the pre-industrial period, it was a common sight to see children helping out with agriculture and hunting, taking more and more responsibility as they grew older. It was also common to see children working and living as apprentices for masters. These means were, at that time, more or less the only ways to get an education (Lieten, 2009b). During the Industrial Revolution, children were used as labor, especially in factories and mining. As Alec Fyfe puts it "industrialization did not invent child work; it intensified and transformed it" (Fyfe, 1989 p. 28). Children worked long hours for very small wages (Basu, 1999a). By the late 19th century, the incidence of child labor started to decline, and today it is more or less non-existent in the developed world (Basu, 1999a; ILO, 2002).

Even though the incidence of child labor was reduced in the developed world, the practice started to increase in the European colonies at the beginning of the 19th century (especially in the colonies where Europeans did not settle). In these places child labor is still a social problem. According to the International Labor Organization (ILO) (see Table 1), there were 215 million child laborers in the world in 2008, of which 115 million were doing hazardous work (the worst forms of child labor) (ILO, 2010a). Most of the children were working in agriculture (about 60%), about 26% were working in services and only 7% in industry (ILO, 2010a). When considering child labor in different regions, it is clear that the problem is, relatively, greater in Sub-Saharan Africa, where one in four children are considered as child laborers. In absolute numbers, however, most child laborers are found in Asia (113 million including the Pacific).

Table 1: Child labor in numbers (ILO, 2010a)

	Number	Percentage
By region		
World	215 million	13.6%
Asia and the Pacific	113 million	13.3%
Sub-Saharan Africa	65 million	25.3%
Latin America and the Caribbean	14 million	10.0%
Other regions	22 million	6.7%
By activity		
Agriculture	129 million	60.0%
Services	55 million	25.6%
Industry	15 million	7.0%
Not defined	16 million	7.5%

The focus of this thesis will be on Nepal. According to the National Labor Force Study from 2009, 33.9% (2,111,000) of children aged 5-14 were in the labor force in Nepal (CBS, 2009). This represents a decrease from 1998/99, when the child labor participation rate was 40.9%. Of all these working children, 13.8 % did not attend school. Most of the economically active children in Nepal worked in agricultural activities (88.7%), of whom nearly all worked in subsistence agriculture (71.8% of working children). Other activities in which children were engaged were manufacturing (29,000), construction (6,000), wholesale and retail trade (33,000) and working in hotels and restaurants (20,000) (CBS, 2009).

In order to reduce the incidence of child labor, there are several possible means of intervention. Internationally, ILO has two relevant Conventions: Convention C138 on the Minimum Age for Admission to Employment and Work (ratified by 161 countries) and Convention C182 on the Worst Forms of Child Labor (ratified by 174 countries) (ILO, 2010b). This is, however, not enough to eliminate child labor. Other actions the international community can take against child labor include trade sanctions, consumer actions (consumer boycotts) and social labeling (Edmonds, 2008). On a local level, legislation can be an important tool (such as banning child labor, compulsory education and minimum-wage legislation). However, legislation needs to be monitored, which is often difficult in developing countries. Under a ban on child labor, children might start working in sectors difficult to monitor. Furthermore, the consequence of a ban may also be that the family loses some of its income. Compulsory education is easier to monitor, however it is not possible to control whether homework is done or whether the child is spending time studying at home. It is also

possible to have more specific forms of intervention, such as a focus on specific sectors in the economy or interventions which are directed towards the empowerment of women, all of which may affect the incidence of child labor.

In this thesis I will look into possible interventions and how they work in theory and practice. I will, in particular, study the GoodWeave initiative that works with children in the carpet sector in Nepal, India, Pakistan and Afghanistan, with special focus on the organizations' work in Nepal.

The rest of the thesis is organized in the following way. In the second section, I give an overview of child labor: what its definition is, the history of child labor, and what the child labor situation is in the world today. Thirdly, I give a theoretical analysis of interventions in child labor. In the fourth section, I summarize the empirical research and see how the data fit with theory. As a fifth point, I look into the child labor situation in Nepal and as a sixth point; I will look at interventions in Nepal. In the seventh section, I look into the GoodWeave initiative, which is an international intervention. How does it try to solve problems with monitoring and the other side effects the program might have? Finally, I conclude by discussing which interventions works in Nepal, whether GoodWeave is a good initiative, and I discuss whether it is possible to generalize from the interventions that work in Nepal to the rest of the world.

Chapter 2: An overview of child labor

Child labor is a serious problem in many developing countries. Even though the incidence of child labor is decreasing, many children are still losing both their childhood (due to their early start in the labor market) and their future (due to their lack of education) (Hindman, 2009a). Many nongovernmental organizations (NGOs) and other institutions are working in the field of child labor, trying to reduce and eventually eliminate the phenomenon. It might appear that rich countries are pointing their fingers at the developing world by trying to tell them how inhumane their practice is, but we do not have to go far back in history before we find child labor more or less everywhere in, what is now, the developed world.

This chapter is structured as follows. I will firstly discuss alternative interpretations of child labor and then give a precise definition of "child labor" as it will be used in this thesis. I will also discuss problems surrounding these definitions and their implementation when measuring the incidence of child labor. I will then give a brief overview of the history of child labor from the Middle Ages till today, focusing on the time after the Industrial Revolution. Finally, I will describe the child labor situation in the world today: The number of children involved, the countries and regions where the child laborers live, and the kind of work they are doing.

2.1. What is child labor and why is it so difficult to measure?

The term "child labor" or "child work" is often used in the social sciences without reference to clear definitions: what is a child and what kind of work do they have to do in order to be characterized as child labor? This is clearly problematic (Bonnet and Schlemmer, 2009). How can someone criticize child labor without saying exactly what they are referring to?

Having a definition is critical when measuring the incidence of child labor and comparing child labor across countries and over time. Are household chores to be excluded totally from the definition? Or, should only household chores in developing countries be counted, since they generally are considered hard work (as opposed to household chores in developed countries)? When a child is offered work for a wage, is this to be characterized as child labor? How should we class the situation when the job consists of delivering the newspaper every Sunday morning when the child is 13 or working in the local shop for a couple of weeks during the summer holidays when they are 15?

At the end of 2008, the 18th International Conference of Labour Statisticians (ICLS) came up with the following definitions concerning child employment:

> Children in employment are those engaged in any activity falling within the production boundary in the SNA (System of National Accounts)[1] for at least one hour during the reference period. This refers to the economic activities of children, covering all market production and certain types of non-market production. It includes forms of work in both the formal and informal economy; inside and outside family settings; work for pay or profit (in cash or in kind, part time or full time), or for domestic work outside the child's own household for an employer (with or without pay).
>
> Children in child labour under the SNA production boundary is a subset of children in employment. It includes those in the worst forms of child labour and children in employment below the minimum age, excluding children in permissible light work, if applicable. It is therefore a narrower concept than "children in employment", and excludes all those children who only work a few hours a week in permitted light work and those above the minimum age whose work is not classified as "hazardous work" or among other worst forms of child labour.
>
> Hazardous work by children is any activity or occupation that, by its nature or type, has or leads to adverse effects on the child's safety, health and more development. In general, hazardous work conditions include night work and long hours of work, exposure to physical, psychological or sexual abuse; work underground, underwater, at dangerous altitudes or in confined space; work with dangerous machinery, equipment and tools, or which involves the manual handling or transport of heavy loads; and work in an unhealthy environment which may, for example, expose children to hazardous substances, agents or processes, or to temperatures, noise levels, or vibrations damaging to their health. Hazardous work by children is often treated as a proxy category of the worst forms of child labour.
>
> (ILO, 2010a, p. 6)

The International Programme on the Elimination of Child Labour (IPEC) summarizes their definition of child labor as:

[1] The SNA includes "all production actually destined for the market, whether for sale or barter. It also includes all goods or services provided free to individual households or collectively to the community by government units or NPISHs" and "all production of goods for own use" but "excludes all production of services for own final consumption within households" (Anon., 2009, p. 5-6).

> Work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development.
>
> It refers to work that:
>
> - is mentally, physically, socially or morally dangerous and harmful to children; and
> - interferes with their schooling by:
>   - depriving them of the opportunity to attend school;
>   - obliging them to leave school prematurely; or
>   - requiring them to attempt to combine school attendance with excessively long and heavy work
>
> (IPEC, 2010)

In other words, a child helping out in the family (for instance running errands or doing chores in the household) is not considered as subject to child labor. When the child gets older, he or she might start doing some light work, such as delivering the newspapers on Sundays. Such instances are considered to be good for the development of the child, and are thus not considered child labor.

The definition of child labor, as based on purely economic indicators given by the ILO, is somewhat problematic. It takes into account activities where production is aimed for the market, rather than considering all activities where the output is for the worker's own consumption. Likewise, this definition only considers work that is paid. This means that children working as paid domestic servants are considered as child laborers, whereas children working in their own household doing household chores (which could be the same type of work as domestic servants), are not considered to be child laborers (Bhukuth, 2008).

Save the Children has adopted a broader definition of child work. Save the Children uses the term child work, not child labor, which implies that the organization's definition is more likely to concern "children in employment" (as defined by the ILO) and not "child labor" per se. The organization defines a child as "a girl or boy under the age of 18". Save the Children, thus includes adolescents in their definition. Work is simply defined as "activities children undertake to contribute to their own or family economy" (International Save the Children Alliance, 2003)

UNICEF admits in its definition that the notion of child labor is subject to variation. The organization accepts that children over the age of 12 can do some light work without being considered to be a child laborer:

> Child labour is work that exceeds a minimum number of hours, depending on the age of a child and on the type of work. Such work is considered harmful to the child and should therefore be eliminated.
>
> - Ages 5-11: At least one hour of economic work or 28 hours of domestic work per week.
> - Ages 12-14: At least 14 hours of economic work or 28 hours of domestic work per week.
> - Ages 15-17: At least 43 hours of economic or domestic work per week.
>
> (UNICEF, n.d.-a)

In addition to these definitions, each country may have its own definition. Pakistan, for instance, defines child labor as "wage work", and Vietnam as "market work that is harmful to the future well-being of children" (Edmonds, 2008).

As shown, there are many different definitions of child labor. In English, a distinction between "child labor" and "child work" is often used. "Child labor" is a term used when children do work that exposes them to some kind of danger and/or prevents them from going to school, whereas "child work" is used when children do work that does not expose them to danger and does not interfere with their schooling (Bhukuth, 2008).

In this thesis I will use the following definition. A person is considered to be a "child" if they have no familial responsibility, and are not expected to have this. In developing countries, it is common to find families where a girl has her first child at 15, and is married to a boy of the same age. These people are considered to be adults in their society, and I will also consider them as such. "Labor" will be considered to be any costly activity (definition of a costly activity is given below) that gives some sort of utility, either for the one undertaking the labor or for others. This definition may therefore include "housework" such as cooking, cleaning, and child minding.

In summary, the focus will be on children who are young and do work that is costly to them, in the sense that it interferes with their education or leisure activities, is damaging to their health, or exploits them (through, for instance, low wages or long working hours).

As Edmonds (2008) shows, there has been a great increase in the number of studies of child labor in recent decades. When measuring child labor, ILO relies upon SIMPOC surveys[2], UNICEF relies on MICS surveys[3] and the World Bank relies upon multiple-purpose household surveys[4]. Furthermore there are other surveys such as CWIQ[5] and DHS[6] surveys.

One problem with there being so many different surveys and definitions is that the estimates of child labor vary between the different surveys. For example, in Cameroon, MICS estimates that 64% of children were economically active in 2000, whereas one year later, the Priority Survey estimated that only 16% of children were economically active. A similar apparent change is found in data for Mali, where the child labor incidence rate appears to have risen from 28% (DHS) to 75% (SIMPOC survey) in only four years: if this is true, it creates an urgent need for new policies or interventions. In this case, one should also expect to find inconsistencies in the measurement of school attendance, but Guarcello *et al.* (2008) do not find evidence for this. This implies that there are methodological inconsistencies between the different surveys which must be understood in order to gain more accurate estimates of child labor, so that a comparison can be made between surveys, countries and across time (Guarcello *et al.*, 2008).

What is causing these differences? Every survey has its own objective, its own types of questions and respondents, and questionnaires are not necessarily conducted at the same time of year. Guarcello *et al.* (2008) find that the nature of the questionnaire and the season in which the survey is conducted explain some differences. Furthermore, Dillon *et al.* (2010) find that survey design matters when measuring child labor. This implies that, in order to get reliable numbers for child labor, different institutions need to agree on one definition and as a result, construct questions which measure what is intended and exclude other types of activities. In other words, a standardization of questions is needed in order to get more reliable numbers and more reliable measures of change over time. During the 17th International Conference of Labour Statisticians (ICLS) a need for an international statistical definition of "child labor" was identified, an issue which also was set on the program for the 18th ICLS which took place in 2008. The 18th ICLS concluded with a draft resolution for the gathering

[2] Statistical Information and Monitoring Programme on Child Labour
[3] Multiple Indicator Cluster Surveys
[4] Mainly the Living Standards Measurement Study/Integrated Survey series and the Priority Survey series
[5] Core Welfare Indicator Questionnaire Surveys
[6] Demography and Health Surveys, US Aid

of statistics on child labor with the aim to "set a standard of good practice for the collection, compilation and analysis of national labour statistics, to guide countries in updating their existing statistical system in this field, or to establish such a system" (ILO, 2009).

I have now pointed out the difficulties in defining and, as a result, measuring child labor. In the following, I take a closer look at the history of child labor before I describe the current situation.

2.2. History of child labor

This section is based on Basu (1999a) and different chapters in Hindman (2009b). Child labor seems always to have existed. In early history, economic life was dominated by agriculture and the family's economy, and there was no compulsory schooling. It should, as a result, be fair to assume that child labor was widespread, with children helping their families on the farm or in some other family business. It was also possible to find work in richer families, and later for the Church. It seems that child labor was a normal part of daily life. As children grew up they undertook work commensurate with their age and abilities (Hendrick, 2009). Basu (1999a) backs up this view of child labor by stating that the practice was more socially acceptable prior to the Industrial Revolution.

During the 17th and 18th centuries, philosophers such as Locke and Rousseau began writing about education. Rousseau wrote, for example, in Emile (1762) that "nature would have children be children before being men" (Rousseau and Payne, 1892, p. 54). He claimed that children were of an innocent nature and did not have any sin. This went against the preaching of the Evangelical Church. The argument was used later on against children working in factories, where their souls were corrupted (Hendrick, 2009). A more controversial view of child labor before the Industrial Revolution is voiced by Levine (1987) who claims, for instance, that child laborers were worse off before the industrialization because of the lack of mechanization.

In modern-day Nepal, 64% of the population work in subsistence agriculture according to the labor force survey (CBS, 2009, p.74). Most of this agriculture is based upon traditional manual tools and animal-drawn equipment (Pariyar *et al.*, 2001). As a result, many parts of

modern-day Nepal can be seen to be similar to the situation in Europe and North-America before the Industrial Revolution.

2.2.1 Europe

The Industrial Revolution started in the late 18th century in Great Britain, and, by the middle of the 19th century it had spread to all of Western Europe and the United States. It began when spinning and weaving machines were introduced in order to respond to the demand for cheap clothing for an increasing population. This revolution transformed Western Europe and the United States into industrial societies using machines and factories (Morgan, 1999).

British industry relied heavily on children working in factories and mines. Stearns (2009) refers to Tuttle (1999) who mentions that different sources claim that up to 50% of the factory workforce were children. Most of these children were teenagers, but it was also possible to find very young children in factories and mines. This was also the case in other countries such as the United States, Belgium, France and Germany. As the presence of child labor in the factories increased during the early 19th century, the opposition against child labor also grew (Basu, 1999a). With industrialization, labor movements and labor unions came to be (Ritzer, 2008). Widespread dissatisfaction with the use of child labor eventually led to a decrease in child labor in the middle and late 19th century (Basu, 1999a). This is backed up by Cunningham's article on the British experience of combating child labor (Cunningham, 1996). By 1881, children between 5 and 9 years of age did not work, and between 1871 and 1881 there was a sharp decline in work done by children between 10 and 14 years old. The same trend is found by de Herdt (1996) in Belgium. By the First World War, most child labor in the Western society had been eliminated. Legislation had also changed, bringing in new laws prohibiting child labor and making education compulsory to a certain age. It was in this atmosphere that the ILO was founded in 1919. One of the goals of the ILO in 1919 was to eliminate child labor, which was then defined as children between 6 and 13 working in factories (Bonnet and Schlemmer, 2009).

While the incidence of child labor gradually decreased in Western societies throughout the nineteenth and twentieth centuries, it increased in the European colonies (Africa, Asia and Latin-America). For a long time the ILO ignored the problem, because it only concerned the colonies or the developing countries. In addition, as the colonies gained independence one

after another, the perception of child labor was that it was more the exception than the rule in the colonies (Bonnet and Schlemmer, 2009).

2.2.2. Colonies

Bonnet (2009) and Grier (2009) describe the child labor situation in Africa during, respectively, the post-colonial and colonial periods. Before colonization, children in Africa were a normal part of the labor force, working, for instance in farming, herding, and hunting. When various countries were colonized, many of these practices relating to children continued, especially in countries where the European population did not settle (Grier, 2009). During the colonial period, the demand for labor increased, forcing more children into the workforce and also increasing the use of "unfree labor" (i.e., slaves). According to Grier (2009) children formed an attractive workforce because they were easier to control, had nimble fingers and were more adaptable to changing circumstances. Following African countries' independence in the 1950s and 1960s (with some exceptions), this has been a continent where the population living in poverty has grown steadily and is expected to rise even more (from 315 million in 1999 to 404 million in 2015) (ILO, 2006). It is widely known that poverty is one of the main determinants of child labor (see Section 3.4). As the absolute number of poor has increased, the absolute number of child laborers has also increased. Between 2000 and 2004, the absolute number of economically active children between 5 and 14 years old, increased by 1.3 million (from 48 million to 49.3 million) (ILO, 2006) and by 2008 the number had reached 58 million (ILO, 2010a)[7].

As in Africa, there were many child laborers in Latin America during the period of colonization. After the end of colonial rule at the beginning of the 20th century, this position did not change. Even though slavery was eliminated, servitude remained. From 1950 to 1990 there has, however, been a systematic decline in the economic activity rate of children between 10 and 14 years: from 19.4% in 1950 to 11.2% in 1990 (Glasinovich, 2009). In 2000, the activity rate for children between 5 and 14 years was 16.1%, while in 2004 it was 10% and in 2008 it was 9% (Diallo *et al.*, 2010). It is important to notice that the numbers from 1990 and 2000 cannot usefully be compared because a larger age group is included in the figures from 2000 than previously.

[7] It should be noticed that the incidence of economically active children between 5 and 14 years old has decreased from 28.8% in 2000 to 26.4% in 2004 and then increased again to 28.4% in 2008.

Asia contains the largest number of child laborers in absolute terms. Following the independence of the colonies in the beginning and middle of the 20th century, there has been a decline in the use of child labor. De Groot (2009) has studied the incidence of child labor in South Asia (more specifically in five countries: Bangladesh, India, Nepal, Pakistan and Sri Lanka) of children between 10 and 14 years old. In Pakistan, the use of child labor changed very little between 1950 and 2000, being 14% in 1950, 15% in the period 1960-1980 and 12% in 2000. On Sri Lanka, however, there is almost no child labor left (changing from 12% in 1950 to 2% in 2000). The three remaining countries have all seen a decrease in the use of child labor, going from 37% to 27% in Bangladesh, 29% to 11% in India and 68% to 38% in Nepal.

In China and Japan there is a long tradition of child labor. Before the Chinese Communist Revolution in 1949, child labor was an important part of the labor force. Many families lived in serfdom, which required children to work (Lieten, 2009a). This was also the case during the Tang dynasty (618 – 907), where children participated in agricultural and household work (Howard, 2009). Even though the Communist Party was ideologically against child labor, the practice still continued for decades after the party rose to power in 1947. The Communists introduced a universal school system, which ought to have decreased (or even eliminated) child labor. However, this is difficult to verify due to a lack of information coming out of China since the communists took power. The ILO estimated that, in 1950, 48% of children between 10 and 14 were child laborers (Lieten, 2009a). In Japan, child laborers were often young prostitutes. Poor families were allowed to sell their daughters to brothels, and even today Japan faces problems of child prostitution (Kakinami, 2009).

I have now described how the child labor situation have evolved over time; from being a normal part of daily life, more or less, everywhere, to having been (almost) completely eliminated in the developed world, but not in the developing world. I now turn to describing the situation as it is today.

2.3. Child labor in the world today

In 1973, the ILO Convention C138 on the Minimum Age for Admission to Employment and Work was adopted. According to this Convention, children between 13 and 15 years old (sometimes between 12 and 14 years old) can do light work as long as it does not interfere

with their education or bring any harm to the child. A child who has turned 15 (sometimes 14) can start working, provided they have finished compulsory schooling. When the child turns 18 (16 under strict conditions), they can start doing hazardous work. Convention C182 on the Worst Forms of Child Labor was adopted by the ILO in 1999. This Convention states that the practice of children performing hazardous work should be eliminated (ILO, 2010b).

When the ILO estimates the amount of child labor in the world today, they base their estimations on these two Conventions. In 2008, the ILO estimated that there were about 215 million child laborers between the ages of 5 and 17 (Table 2). 91 million of these are younger than 12 years old (about 40%), and 152 million are younger than 15 years old. In Table 2, we also see that the number of child laborers of 12 years and above has actually increased since 2004 (by 11 million and 2 million respectively), whereas the number of child laborers in the age-group 5-11 has decreased by 18 million. This might be a positive sign that could indicate that there are fewer young children working than in previous years.

Table 2: Global estimates of child labor by major groups, 2004 and 2008, in '000s (Diallo *et al.*, 2010)

Major age group	Child labor 2004	Child labor 2008
5-11	110,655	91,024
12-14	59,728	61,826
Total 5-14	170,383	152,850
Total 15-17	51,911	62,419
Total 5-17	222,294	215,269

As we can see from Table 2, more than 40% of all child laborers, both in 2004 and 2008, were between 5 and 11 years old. These numbers are very high and are due to the definition of child labor. These children are considered to be child laborers if they engage in any economic activity. This implies that a six-year old who is helping out on a family's field for an hour a week, is considered to be subject to child labor.

If we look at the incidence of child labor as a proportion of the total child population, 13.6% of the world's child population was working in 2008, see Table 3 (absolute numbers of children are rounded to the nearest million). This represents a decrease of 3.2 % from the figures of 2004. An analysis of the numbers by sex shows that boys are working more than girls and it is only girl child labor that has decreased during this 4 year period, whereas boy child labor has increased. Overall, there is a trend towards a decrease in child labor.

Table 3: Global trends in child labor by sex, 2004-2008 (Diallo *et al.*, 2010)

Sex		Child population		Children in employment		Child labor		Hazardous work	
		2004	**2008**	**2004**	**2008**	**2004**	**2008**	**2004**	**2008**
World	Number (millions)	1,566	1,586	323	306	222	215	128	115
	Incidence	100%	100%	20.6%	19.3%	14.2%	13.6%	8.2%	7.3%
	% change (2004- 2008)	-	1.3%	-	-5.3%	-	-3.2%	-	-10.2%
Boys	Number (millions)	804	820	171	176	120	128	74	74
	Incidence	100%	100%	21.3%	21.4%	14.9%	15.6%	9.3%	9.0%
	% change (2004-2008)	-	2.0%	-	2.7%	-	6.8%	-	-0.5%
Girls	Number (millions)	762	766	152	130	103	88	54	41
	Incidence (% of age group)	100%	100%	19.9%	16.9%	13.5%	11.4%	7.1%	5.4%
	% change (2004-2008)	-	0.5%	-	-14.3%	-	-14.8%	-	-23.5%

Diallo *et al.* (2010) also show that there has been an increase in the number of children between 15 and 17 doing hazardous work (from 14.4% to 16.9%). It is also the case that younger children (5-14 years old) are doing less hazardous work (4.3% in 2008 as compared to 6.3% in 2004).

It is clear from Table 4, that in absolute numbers, Asia dominates the world with 113 million child laborers (with 14 million in Latin America and 65 million in Sub-Saharan Africa). Sub-Saharan Africa has an incidence rate of 25.3%, which means that 1 in 4 children are working (with 13.3% working in Asia and the Pacific, and 10% in Latin America and the Caribbean).

Table 4: Regional estimates of child labor in 2008 of 5-17 year olds (Diallo *et al.*, 2010)

Region	Total children	Child labor	Incidence rate (%)
World	1,586,288,000	215,269,000	13.6
Asia and the Pacific	853,895,000	113,607,000	13.3
Latin America and the Caribbean	141,043,000	14,125,000	10.0
Sub-Saharan Africa	257,108,000	65,064,000	25.3
Other regions	334,242,000	22,473,000	6.7

In addition, Diallo *et al.* (2010) find that 60% of child laborers in the world works in the agricultural sector, 25.6% in the service sector (for instance, in trade, restaurants, hotels, and social or personal services) and only 7% work in industry (for instance in manufacturing, construction and mining). They find that 67.5% are unpaid family workers, 21.4% are in paid employment and 5% are self-employed. This confirms previous findings that most child labor is found in agriculture; where children help their family in order to meet subsistence needs.

One factor to consider when interpreting these numbers is that, as mentioned in Section 2.1, children working long hours doing household chores are not counted, and there is also a problem with so-called "idle" children, i.e., children who do not work, do not go to school, do not look for work, and do not do any household chores during the reference period (Anon., 2007)[8]. Even though household chores are included in the survey designed by SIMPOC, they are not included in the operational definition of child labor that ILO operates with. In addition, idle children might actually have a heavy work load in the household, for example carrying water (which is not considered a household chore) over long distances. This is especially true for girls in Africa after they turn 10-11 and are useful at home (Bacolod and Ranjan, 2007).

We have now seen that child labor is a serious problem in many developing countries. The question now is how child labor can be reduced and finally eliminated. In the next chapter, I analyze interventions that may reduce the incidence of child labor.

[8] Household work includes unpaid child minding of one's own/other children, housecleaning/decorating of one's own household, cooking/preparing meals for one's own household, caring for sick or aged persons, repairs to one's own dwelling, domestic equipments and vehicles (Anon., 2007).

Chapter 3: Interventions: How do they work in theory?

There are many possible interventions aimed at reducing the incidence of child labor. To understand the effects of different interventions, it is useful to set up a theoretical framework to analyze them. In order to do so effectively, I firstly explain why some children work and others do not. Secondly, I analyze how the decision about sending children to work is made at the household level. As a third point, I move on from household level to the aggregate level where I analyze some possible interventions. Next, I look at an alternative labor supply curve in order to analyze a model with multiple equilibriums.

The next stage of analysis is to consider a multi-period model where education gives a higher wage for the child in the future, which may influence household decisions. I then assume that some bargaining takes place within the household, and look at bargaining models. Within this framework, I analyze, for example, programs for women's empowerment and how they can reduce child labor to a certain extent. Finally, I analyze international interventions including international labor standards, consumer boycotts, trade sanctions and product labeling.

3.1. Why do children work?

In order to understand how interventions affect child labor, it is necessary to start by explaining why some children work and others do not. There are two broad categories of explanation. The first category concerns the household decision to make a child work (i.e., what Gilligan (2003) refers to as "push factors") and the second concerns a firm's decision to use children as a part of their work force ("pull factors").

Within a household, there are several factors that determine whether the decision is made to make the child work or not. An indisputable fact is that poverty is one of the main reasons why children work (Basu and Tzannatos, 2003). Other household characteristics that are important for this decision are the balance of power within the household (Basu and Ray, 2002) and time preference (the extent to which the household prefers present consumption to future consumption). In addition, a household's decision may be influenced by educational opportunities in its area or by the social protection available in its country (Gilligan, 2003).

On the other side of the market is the demand for child labor. Firms seeking to maximize profit use child labor only when children give them higher profits. Firms will hire anyone who can work for a marginally lower wage than anyone else. In general, a child's wage is lower than an adult's wage, which gives the firm an incentive to use children as a part of their labor force. Furthermore, firms may also provide children with poorer working conditions because children are less likely to complain as they have fewer alternatives. In addition, some argue that children are more able to perform some kinds of job than adults (the "nimble-finger" argument) (Cigno *et al.*, 2002). Even though firms seek to maximize profits, the decision regarding child labor is also influenced by whether child labor is regarded as socially acceptable or not, by the legislation in the respective country and by how well the government is able to monitor and enforce any legislation that is in place (Gilligan, 2003).

It seems clear that, in order to reduce or eliminate child labor, these factors have to be taken into account. Below, I discuss theoretical models that can shed further light on these factors, starting with showing how the decision about child labor is taken within the household.

3.2. The effects of interventions at the household level

To analyze how the incidence of child labor in an economy is determined, it is useful to start with how a decision about whether a child should work is made within the household itself, and how such decisions generate a supply of child labor.

I assume households have a utility function which depends on consumption of a vector of goods, such as food, clothes, and shelter, denoted c, and the child's education, e. The household maximizes this utility function with respect to consumption and education[9,10]:

$$\max_{c,e} U(c,e) \qquad \text{Eq.1.}$$

An increase in consumption normally will lead to a higher utility for the household. There are two reasons why an increase in the time children spend on education will increase utility. Firstly, given that the parents find it painful to send their children to work, an increase in e implies a decrease in the time spent working, and thus a higher utility for the household. Secondly, education is an investment for the future in the sense that a higher level of

[9] Education includes schooling, leisure and play.
[10] To avoid any complications, strict concavity in the two elements is assumed.

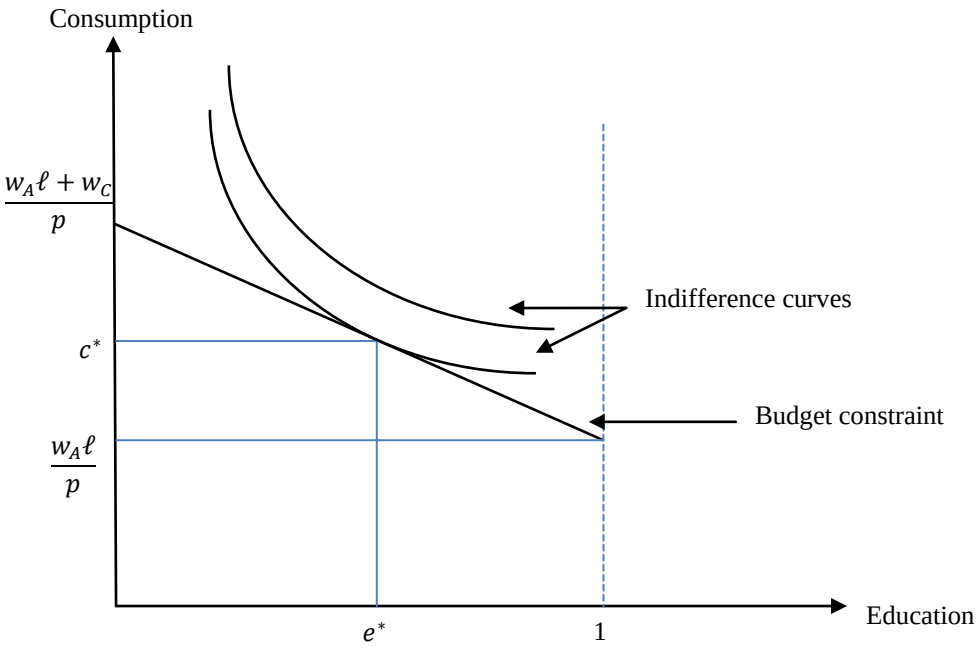
education will tend to lead to a higher wage when the child becomes an adult. I analyze education as an investment later in this chapter.

A household faces a budget constraint: it cannot consume more than it earns (i.e., its total expenditure must be less or equal to its total income). The parents earn w_A and provide ℓ amount of labor. Further, I assume that a child either works or is educated. The time the child does not spend on education is used on work and is paid by w_c. Thus total income is $y = w_A\ell + w_c(1-e)$. As a result, less education gives a higher total income to the household and thus the possibility of higher consumption. The price of the consumption good is given by p, which gives the following budget constraint:

$$pc \leq w_A\ell + w_c(1-e) \qquad \text{Eq.2.}$$

Since child labor is the main focus, I assume that the supply of adult labor, ℓ, is a given constant. The optimization problem is shown in Figure 1, where the indifference curves show all combinations of consumption and education where the utility of the household is constant.

Figure 1: Optimal allocation of consumption and education

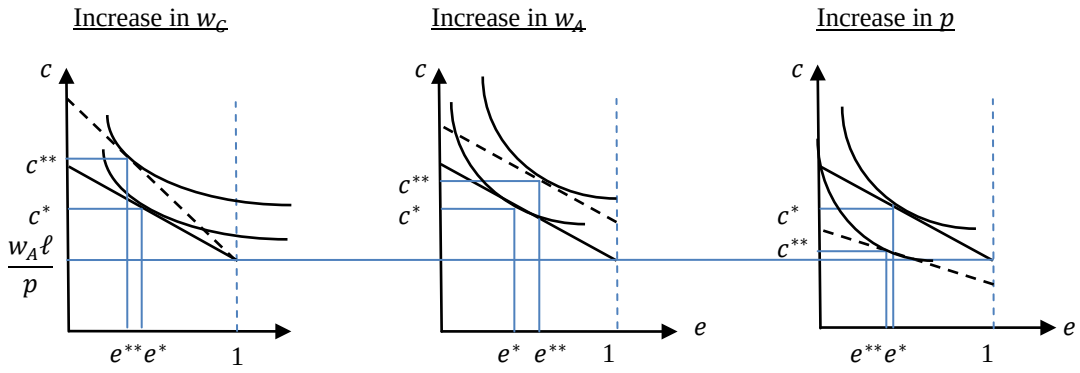


In Figure 1, we can see that when children do not work ($e = 1$), the household has income from adult work which translates into $\frac{w_A\ell}{p}$ units of consumption. When children use all their

time working ($e = 0$), the available income for consumption equals the income from adult labor and the income from child labor (w_C).

I want to find out how the supply of child labor varies when changing some of the main parameters in this optimization problem (i.e., what happens if w_c, p or w_A is changed). In Figure 2, changes in these parameters are depicted.

Figure 2: Optimal allocation after changes in main parameters



If the child wage increases, the budget constraint rotates outwards because the available income for consumption increases. There are two opposite effects of this change. On the one hand, an increase in the child labor wage will increase the alternative cost of sending children to school, reducing the time spent on education (substitution effect). On the other hand, the increase will raise the income level and thus the consumption of normal goods, including education. In Figure 2, the substitution effect dominates (e decreases), and, as a result, the supply of child labor increases.

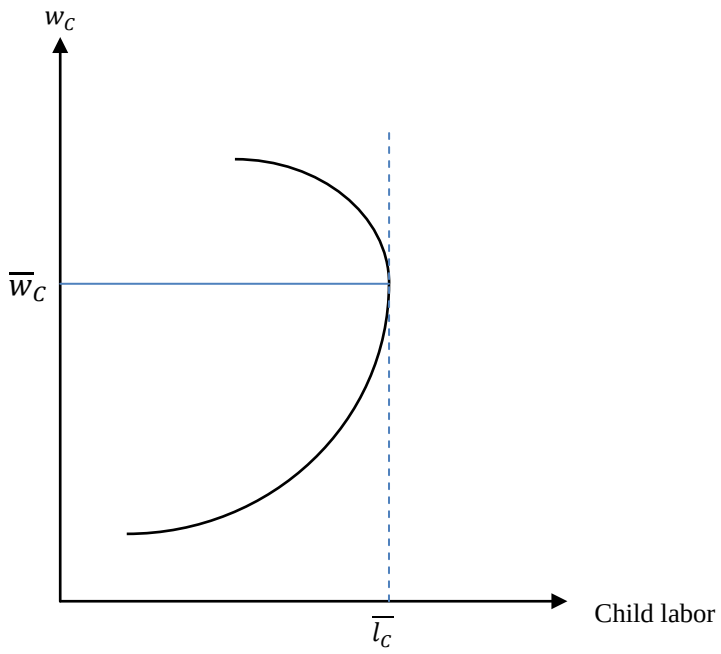
If the adult wage increases, then the budget constraint gets a parallel shift outwards because the consumption possibilities increase for all e. In this case, there is no substitution effect, only an income effect which leads to more education. In Figure 2, we see that both consumption and the time spent on education increase, and, as a result, the child labor supply decreases. Thus, an increase in the adult wage will lead to a decline in the child labor supply, while an increase in the child wage may lead to an increase in the child labor supply.

An increase in the price of consumption implies that real income declines. This leads to less time spent on education and, thus, an increase in the supply of child labor (income effect).

However, an increase in the price of consumption decreases the relative cost of education, which increases the time spent on schooling and, thus, decreases the supply of child labor (substitution effect). In Figure 2, the income effect dominates (decline in e).

Let us return to the effect of an increase in w_C. Assuming that the substitution effect dominates for low w_C-s and the income effect for higher wages, the supply curve will be backward-bending. This implies that for low wages, the marginal utility of income (generated from one more unit of child labor) is greater than the marginal utility of one more unit of education. For high wages we have the inverse situation. The higher wage means that the child could work fewer hours and still maintain the same income. The income effect would mean that the child would work fewer hours and spend more time on education. On the other hand, the substitution effect from the higher wage means that the utility gained from the last hour (or day) is greater than the utility gained from spending an hour (or day) in school, because the higher wage means that the household can consume more. This implies that the household will substitute child labor for education until the utilities equal. This is illustrated in Figure 3, where $\overline{l_C}$ is the maximum supply of child labor, and $\overline{w}_C$ a wage.

Figure 3: A backward-bending supply curve of child labor

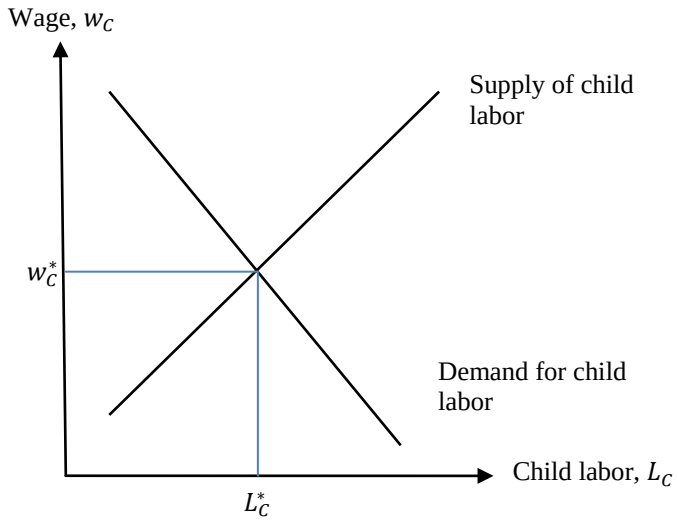


I have analyzed the effects of changes in prices and wages at the household level. It is now interesting to see how the incidence of child labor and wages in the economy varies.

3.3. Aggregate effects

From the household-adjustment model, I have found a child labor supply curve. To simplify, I only look at the lower wage levels where the supply curve is likely to increase. This is the most realistic model for a poor country because it rarely has high wages. Next, I sum horizontally the household child labor supply curves in order to get the child labor supply curve for the whole economy. Here w_C is the wage children can earn and L_C is the aggregate supply of child labor (ℓ_C from Section 3.2 aggregated). A supply-demand framework is described in Figure 4.

Figure 4: A supply-demand framework



The demand curve arises from the maximization problem of firms, where they seek to maximize profits with respect to quantity, adult labor and child labor[11]. The higher the child wage, the fewer the number of children who will be demanded; the lower the child wage, the greater the number children who will be demanded.

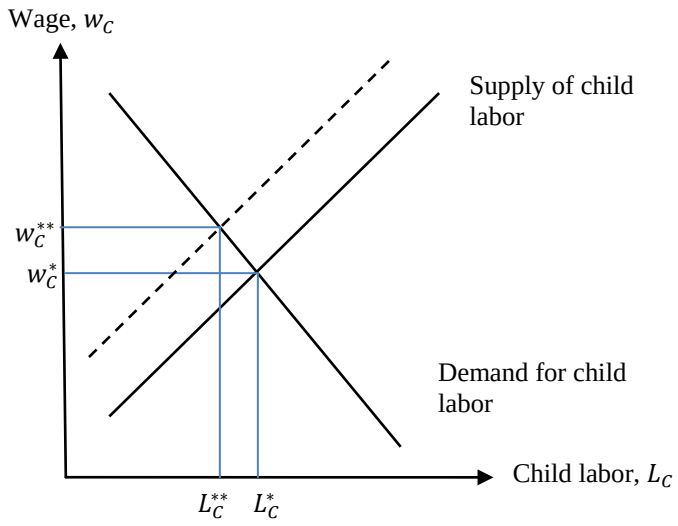
The goal of an intervention in the child labor market is to change the demand for and/or the supply of child labor. I apply this framework in order to discuss some possible interventions against child labor.

[11] $\max \pi = pQ - w_A A - w_C C$

3.3.1. Compulsory education and education programs

If a country decides to introduce compulsory education for all children in a given age group (for example between 6 and 13 years), a decrease in the supply of child labor is to be expected, as more parents will send their children to school, and they will have less time available for work[12]. In the supply-demand framework shown in Figure 5, I assume that under such circumstances, all children will have less time available for work so that the whole supply curve shifts inwards. However, it may also be that the supply curve only shifts inwards for high wages above the equilibrium (or only for low wages below the equilibrium), thus not changing the incidence of child labor.

Figure 5: A shift in supply due to compulsory education or education programs



As we see in Figure 5, a shift inwards in the supply curve leads to a reduction in the incidence of child labor. In addition, we see the shift gives an increase in the market wage which, in turn, makes the remaining child laborers better off. However, it does, of course, not necessarily eliminate the phenomenon. Furthermore, an increase in the child labor wage increases the opportunity cost of education, which, in the next period, may increase the supply of child labor (see Section 3.2).

Education programs will lead to similar results to compulsory education. Basically, compulsory education is a large scale education program, and all such programs attempt to keep children away from work, as illustrated in Figure 5. This means that an education

[12] I here assume, as is realistic for Nepal, that even though schooling is compulsory, some parents may still decide to send their children to work, be it in, or outside, school hours.

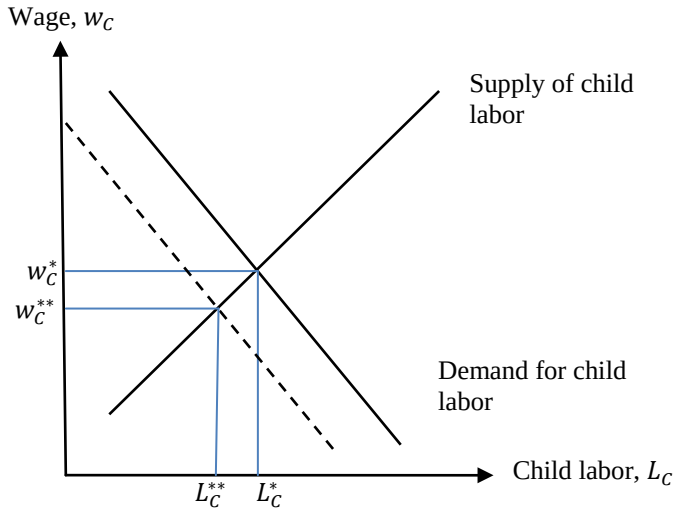
program which aims to get children into school will have the same qualitative effect as compulsory education. However, the quantitative effect might differ in the sense that compulsory schooling is a national initiative, whereas education programs may be local, or operate on a smaller (non-universal) scale. In addition, everything that reduces the cost of schooling shifts the supply curve inwards. This can include free school uniforms, free school books, or a free meal on school every day.

The quantitative effect depends upon several factors. Firstly, a child can be enrolled at a school, but not show up. Thus, there should be some sanctions in place to avoid children being absent frequently: this will increase the quantitative effect. In order for this to work, there must be some mechanism that ensures that teachers file a report when a child is absent and that the sanction is carried out. One sanction could be, for example, that the family gets paid an amount of money if the child shows up at school every day for a week, but gets nothing if the child is absent for at least one day. Secondly, a child could be enrolled at a school, show up and still work full- or part-time when not in school. This implies that compulsory schooling or education programs should be followed by some incentives for households, so that children do not have to work alongside their education ("food-for-education" programs, for example). Another incentive for households to send their children to school is improved future earnings, which will be discussed later in the chapter.

3.3.2. Ban on child labor

A ban on child labor would probably imply sanctions: if the ban were not followed, it would be more costly to employ children or send children to work. If parents were punished, the ban would have an effect on the supply side, as in Figure 5, and if firms were punished, it would affect the demand side. Suppose now that the ban is made in a way that punishes the employer. This would lead to an increase in the cost of employing children so that a (partial) ban of child labor would then reduce the demand for child labor (it would work in parallel to a tax on child labor). However, even a complete ban would probably not eliminate child labor completely because of a lack of enforcement and monitoring (and thus the ban would, in effect, only be partial). A partial ban is illustrated in Figure 6.

Figure 6: A shift in demand due to a (partial) ban on child labor



As depicted in Figure 6, it would be more expensive for firms to employ children. A reduction in demand would lead to a reduction in the number of children employed. That would means that some of the original child laborers would lose their jobs. In addition, a decline in demand would lead to a decrease in the wage paid to children. Such a decrease in the child labor wage would make the remaining child laborers worse off since their income would be lower than before the ban.

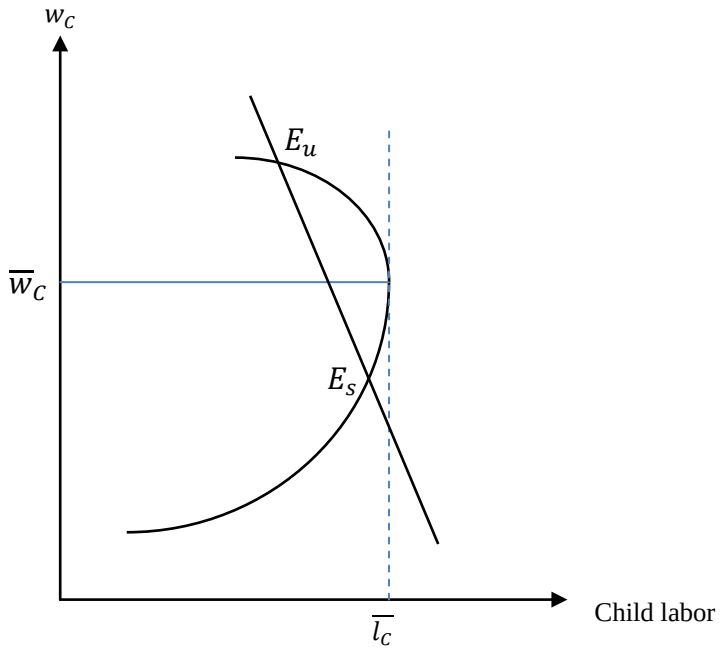
Everything that makes employing children more costly would have a similar effect as depicted in Figure 6. If the prices given to firms that employ children are lower than the prices given to firms only employing adults, it would be more costly for firms to employ children. If the demand for the product is reduced because of the use of child labor this may also be the case.

The effects of a ban depend on how well the government is able to monitor and enforce legislation. If the monitoring and enforcement of the law is good, then the effects of the ban will be greater than if the monitoring and enforcement is very limited. This implies that the higher is the probability of being caught when employing children, and the greater the punishment for employing children, the greater the effects of a ban will be.

To summarize, we see that a positive intervention, such as education, makes sure that all children live in a better situation, even those who work. On the other hand, a negative intervention, such as sanctions against firms, will make those who still work worse off.

Even though it is useful to start with the simplest supply-demand framework as depicted in this paragraph, the model has its limits. First of all, we found in Section 3.2, that the supply curve of child labor may be backward-bending. Another restriction within this framework is that it only gives rise to one equilibrium. Using a backward-bending supply curve may give rise to several equilibriums. The backward-bending supply curve shown at the end of Section 3.2, may give rise to two equilibriums (depending on the demand curve for child labor). However, only one of them is stable. As we can see in Figure 7, the equilibrium in E_u is not stable (because the same number of parents are willing to let their children work for a much lower wage), whereas E_s is the only stable equilibrium.

Figure 7: One stable and one unstable equilibrium



In the next section I analyze a simple backward-bending supply curve which gives rise to two stable equilibriums and one unstable one.

3.4. Effects in a model with multiple equilibriums

From Figure 3 and Figure 7, we can see that a backward-bending supply curve means that a higher market wage does not necessarily lead to a higher supply of child labor. I will now present another model where the supply curve is backward-bending, this time with two stable equilibriums. The model is a version of the model in Basu and Van (1998), and I also rely on a simplified version of the model as shown in Bardhan and Udry (1999). The model implicates that as long as the adult wage rate is above a certain point, the economy will be in

equilibrium with no child labor. If the wage rate is below this threshold level, however, the equilibrium will include child labor (it is important to notice that we, in this case, look at the adult wage, not the child wage).

The model relies on three assumptions. Firstly, it is assumed that children are sent to work only when the income from non-child labor sources is very low (the "luxury axiom"). This implies that child leisure (or, more specifically, time spent on non-work activities) is a luxury good in the sense that poor families cannot afford to "buy" it. Secondly, firms in the economy consider adult labor and child labor as substitutes. Finally, the income a child gets from working is higher than the extras they consume due to work; it will benefit the household economically to send a child to work. These three assumptions in combination create multiple equilibriums in the model.

Basu and Van (1998) assume that there are *N* families in the economy, each with one adult and one child. There is only one good in the economy. Each family member consumes c and e is the child's education which takes the value 0 or 1[13]. To simplify, they assume that a child consumes the same as an adult. Furthermore, they assume that the adult labor supply is inelastic and equal to 1. Thus, the household only has to decide how much child labor, 1-*e*, it is going to supply. The household have preferences concerning consumption, *c*, and the child's education, *e*. These preferences are such that the more consumption the better, but children only work if each family member's consumption is below subsistence level, s. For $\delta \geq 0,\ e \in (0,1),\ c \geq 0$ the preferences are the following[14]:

$$(c+\delta, 0) \succ (c, 1)\ if\ c < s$$
$$(c+\delta, 0) \preccurlyeq (c, 1)\ if\ c \geq s \qquad \text{Eq.3.}$$

From the assumptions made in Eq.3, the results follow almost automatically. If consumption is below the subsistence level, the household would prefer more consumption and no education (i.e., child labor) instead of having a low consumption level and sending the child to school. If consumption is above the subsistence level, the household would prefer to have that level of consumption and send the child to school instead of increasing consumption and making the child work. We can already see that it is the need of s (subsistence consumption)

[13] In Basu and Van (1998) e is the child's working effort.
[14] δ is a marginal increase in consumption.

that gives child labor in one of the two equilibriums. The household wants to maximize their preferences with respect to a budget constraint which is such that total consumption in the household is smaller or equal to total income. We can therefore write:

$$2c \leq (1-e)w_C + w_A \qquad \text{Eq.4.}$$

where w_A is the adult market wage and w_C is the child market wage. This implies that consumption and education will be as follows:

$$c = \begin{cases} \frac{w_A}{2} \; if \; w_A \geq 2s \\ \frac{w_A + w_C}{2} \; if \; w_A < 2s \end{cases} \qquad \text{Eq.5.}$$

$$e = \begin{cases} 0 \; if \; w_A < 2s \\ 1 \; if \; w_A \geq 2s \end{cases} \qquad \text{Eq.6.}$$

As already stated, child labor will only come about if the income of the adult is not high enough to cover subsistence needs. Aggregate adult labor supply will be $S_A = N$ and aggregate child labor supply will be $S_C = 0$ if $w_A \geq 2s$ and $S_C = N$ if $w_A < 2s$. Assuming that a child can only produce $\gamma < 1$ of what an adult can supply, the labor supply curve is illustrated in Figure 8. When the adult wage is below $2s$, the total supply of labor is given by $N + \gamma N$, the total adult labor supply plus the total child labor supply measured in adult-equivalent units. When the wage is equal to $2s$, households are indifferent between supplying only adult labor and supplying both adult and child labor. Finally, when the wage is above $2s$ households only supply adult labor which equals N.

Above I described the supply of labor in the economy. The next step is to describe the demand-side. The second assumption was that adult and child labor are substitutes. Basu and Van (1998) assume that they are perfect substitutes and, to simplify, they do not consider the use of capital in the production. The production of a firm i is a function of adult labor and child labor and a child can only produce $\gamma < 1$ of what an adult can produce. The product function is thus $f(L_{A_i} + \gamma L_{C_i})$ where L_{A_i} is the amount of adult labor, and L_{C_i} the amount of child labor.

To simplify, let us assume that the real cost of adult labor and child labor is equal, i.e., $\gamma w_A = w_C$. Firms in the economy will then be indifferent between employing adults and children (if $\gamma w_a > w_c$ only children will be employed; if $\gamma w_a < w_c$ only adults will be employed). In this case firms will only care about the total number of laborers it employs (as measured by adult equivalents), not the type of laborers. Since firms are indifferent between employing children and adults under this assumption, they will have a high demand for labor when the wage is low and a low demand for labor when the wage is high. This is illustrated in Figure 8.

Figure 8: Multiple equilibrium in the labor market

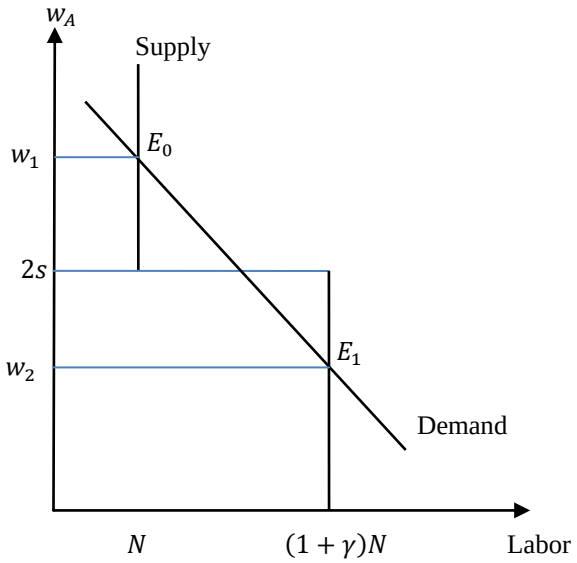


Figure 8 illustrates that within the model there are two stable (and one unstable) equilibriums: one where the adult wage is high and there is no child labor, E_0, and one where the adult wage is not sufficient to cover subsistence needs and where there is child labor, E_1. The only factor that determines which equilibrium the economy will be in is the adult market wage (given that the income needed for covering subsistence consumption is given). This implies that if the government could force the minimum wage to be above $2s$, then the economy would be in equilibrium with a high wage and no child labor. If the government were able to implement minimum wage legislation, then a ban on child labor would be redundant.

This model is also a so-called "poverty trap" model, in the sense that households send children to work because wages are low, and child labor brings the wage down, implying that in a country with child labor, households have to send their children to work. Furthermore, we have set up a situation that is such that if all parents send their children to work, no one would

like to send them to school. Similarly, if all households send their children to school, no one would like to send them to work. The reason is that they will not have any private incentive to do anything different (Donaldson and Duflo, 2009).

One way to solve the problem mentioned above is to use minimum wages which are set above subsistence income. However, Basu (1999c) shows that a rise in the adult wage induced by a minimum wage law does not necessarily lead to a decrease in child labor. The reason is that the legislation may cause some adults to become unemployed and thus send their children to work in order to compensate for the lost income.

An enforced ban on child labor imposed on households would help the economy to go from a bad equilibrium in E_1 to a good one in E_0 because the supply curve shifts inwards. In this case, the adult market wage would be enough to cover subsistence consumption for all household members, which, in turn, would make the ban unnecessary when the equilibrium has changed. A ban on child labor imposed on firms in this model, however, would not have the desired outcome due to the inelastic labor supply. If the economy were in E_1, a ban would only make things worse for households. The reason for this is that the demand for labor would decrease when child labor is used. This gives a shift inwards in the demand curve around the equilibrium E_1 which reduces the wage, whereas the incidence of child labor would remain the same. This shows that this model may have difficulties in showing the effects of interventions that influence the demand side of the economy.

Some simplifications have been made to the model that are not realistic. Basu and Van (1998) have taken some of this into account in a more general model, where they assume that there are m children and that each child consumes a fraction β of what an adult consumes. However these extensions do not change the conclusions of the model. Furthermore, assuming that there is only one adult can easily represent two adults that both work full time. It might also be reasonable to have a smoother transition in the supply curve when we go from no child labor to child labor. However, the equilibriums still do not change. Basu and Van (1998) assume that when the wage is such that income can cover subsistence consumption, children will be withdrawn from the market (the “luxury assumption”). Even though this does not change the analysis of the model, the wage needed to withdraw children from the labor market might be higher than what is depicted in this model. The reason for this is that households might value more consumption above mere subsistence consumption more than

they value education for children. Furthermore, it is not given that parents find it painful to send children to work. If this is the case, then the luxury axiom does not hold.

As we have seen, the decision to send children to work is made within the household which has preferences for consumption and education. I will now turn to a multi-period model in order to show how education can be considered as an investment for the household.

3.5. Education as an investment

Child labor can create a vicious circle of poverty in the sense that children do not get an education. If children had some education, their future income would probably increase, which, in turn, would make them less poor than their parents (Udry, 2004).

In the household adjustment model described in Section 3.2, the utility of the household depended on consumption and the child's education. The more consumption and education, the higher the utility will be for the household. Education is also an investment that is likely to increase the consumption of the household in the future (according to Pritchett (2001) there is a positive correlation between education and wage). This implies that allocating more resources to education today will give more resources available for consumption in the future.

The costs of education are the direct cost associated with schooling such as uniform, fees, and schooling materials, and the indirect cost associated with the foregone income that the children could have earned if they were working. The main benefit from schooling is the increased income that the children should gain in the future. However, a well-educated society will probably imply a higher productivity which gives growth. In other words, education may be a positive externality which is not accounted for in household decision making (Udry, 2004).

Let us assume that the benefit of child labor is the wage earned (which is realized immediately) and the cost of child labor is the low wage the children will get in the future. In a world with perfect credit markets, the household may use a cost-benefit analysis where they compare the benefit (the wage) with the present discounted value of the costs (the low wage in the future). Perfect credit markets are important because, when the household can operate in the credit market, the interest rate becomes the opportunity cost for all investments, including education.

The higher the interest rate, the lower the present discounted value will be for a given cost. In this case, it will be optimal to choose the amount of child labor which is such that the benefits of child labor equal the present discounted value of the costs. This will also be the social optimum. However, the social optimum of child labor does not need to be zero. If, for example, child labor is productive such that the child labor wage is high, and the gain from education on the wage is low and the interest rate is high, it will probably be optimal to operate with some child labor. When we take into account the social benefits of education (or the social costs of child labor) which the household does not consider, the incidence of child labor will be too high and the school attendance too low compared to what is socially optimal (Udry, 2004).

As long as the financial markets are taken to be perfect (including symmetric information regarding the benefit from education) and there are no problems concerning agency within the household: even very poor households will be able to borrow money in order to finance their children's education because the household will be able to pay the loan back with the increased income the children should get in the future. However, financial markets are not perfect. It will not be possible to take the optimal choices described above. When households are not able to smooth income over time by borrowing, the incidence of child labor will be too high. This concerns households that face a very high interest rate and households that are credit constrained (that have limited or no access to credit). Since it is difficult (or impossible) to borrow on children's future earnings, households will choose a high level of child labor in order to compensate for the imperfect financial markets and poverty (Udry, 2004).

It is necessary to solve the problem of imperfect financial markets. One way for the government to solve this is to propose government loan guarantee programs. Cigno (2011) proposes a tax policy where schooling is compulsory and the government uses a net subsidy decreasing the parents' income and a net tax decreasing the wage skill premium. The net subsidy is given in period 1 in order to redistribute income between households. A household with a very low income receives a high positive subsidy, whereas a household with a very high income receives a high negative subsidy. The tax is paid in period 2 when the children from period 1 are in the adult labor market. If they had no education in period 1, they will receive a given wage, w_2. If the child had some education, on the other hand, they will earn the given wage and an additional wage-premium dependent upon how much education they received in childhood and how well they did in school.

Another, second best, way to solve the problem could be to increase the benefits of education through higher quality and targeted subsidies. “Opportunidades” (former Progresa poverty program) in Mexico and “Food-for-schooling” in Bangladesh are examples of such programs.

In this model, I assumed that there was no issue of agency within the household. However, as I will show below, the bargaining power within the household may have significant influence on the decision of whether a child is sent to work or not.

3.6. Women’s empowerment

Another reason why households may not choose optimally between child labor and education is the issue of agency. Parents decide how children are going to allocate their time. As long as financial markets are not perfect, the deciding agent(s) will undertake a subjective benefit-cost analysis, meaning that they balance the subjective welfare costs and benefits (Udry, 2004).

Basu and Ray (2002) show that when the bargaining power of women in the household increases, child labor will initially fall, then rise again. To show this, they use a collective bargaining model. Suppose that the household consists of three agents: the wife (1), her husband (2) and their child (3). The household will maximize the weighted average of the utility of the two adults:

$$\Omega = \theta u_1(X) + (1-\theta)u_2(X) \qquad \text{Eq.1.}$$

where θ is the balance of bargaining power between the two adults. When $\theta = 0.5$ the husband and wife have the same bargaining power in the household. When $\theta = 1$, the woman has all the power inside the household, and when $\theta = 0$ the husband has all the bargaining power. X is the goods in the economy given by the following vector: $X = (x_1, x_2, 1-e)$ where $(1-e)$ is child labor. It is also assumed that the adults always work.

The model relies upon two assumptions:

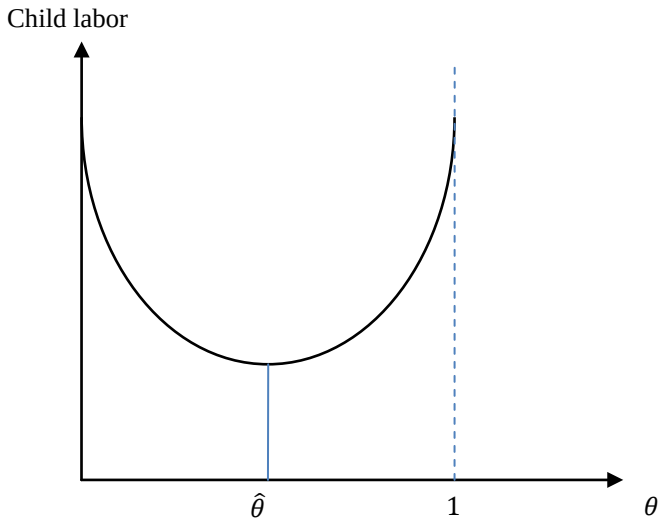
1. The husband and wife have different preferences over the two goods; x_1 and x_2; and
2. Both of them consider sending a child to work painful.

If the power in the household is shared equally between husband and wife, the consumption pattern of the household will not be optimal for either of the two (since the woman may have

strong preferences for x_1 and the man for x_2). This implies that making a child work will not be of much use because the extra income from child labor will not benefit either of the adults by much. It is thus reasonable to assume that the probability of having a child work in such a household is very low. On the other hand, if either the woman or man is the only decision maker in the household, then sending the child to work will increase the consumption possibilities of the preferred good, meaning that child labor has a higher benefit than when the power is shared.

Under this model, Basu and Ray (2002) find that starting from $\theta = 0$, as θ rises child labor will fall and then rise again when θ reaches a critical level $\hat{\theta}$, as shown in Figure 9. Depending on the preferences of the parents (it might, for instance, be more painful for women to send their children to work), this gives the following figure when their preferences are equal concerning child labor:

Figure 9: The rise and fall of child labor when women's power rises in the household (Basu and Ray, 2002)



In order to see whether this model fits with reality, it is necessary to find a variable that measures women's power in the household. One way of doing this is to find out how much education the woman has compared to the man. Another way can be to calculate how much of the total household income is earned by the woman, and how much is earned by the man. Other factors that might influence women's power in the household are tradition and culture (in many cultures and traditions the man is the deciding agent independently on how much he earns). I take a closer look at the data on women's empowerment in Chapter 4.

Policies that can improve women's bargaining power in the household are more focused on girls' education, microcredit to women (so their income is increased), creating employment opportunities in the market, awareness campaigns about women's rights, family planning, and health.

In the above paragraphs I have analyzed how interventions at a local and national level may influence the incidence of child labor. The next interventions I analyze are interventions performed at an international level.

3.7. International interventions

The citizens of developed countries often find child labor inhuman and there are thus strong forces trying to convince governments to act against these practices. Through the International Labor Organization, two international labor standards concerning child labor have been adopted. Another way for the international community to act is to impose trade sanctions on countries using child labor. It is also possible for consumers themselves to act through consumer boycotts or by buying goods that they know are not produced by children (through labels). Consumer boycotts, trade sanctions and labels directly hurt the country's export sector and may make the country want to change their practice in order to avoid the consequences of lower sales. Labor standards, on the other side, urge countries to eliminate child labor and give countries moral responsibility. Consumer boycotts and trade sanctions are basically the same in result, but trade sanctions are introduced by a government, whereas boycotts are a consumer initiative, implying that trade sanctions may be more effective. Finally, labels stand out because they make consumers (and governments) able to choose between products made by and without children so that the boycott becomes more effective in the sense that only products made through child labor are boycotted.

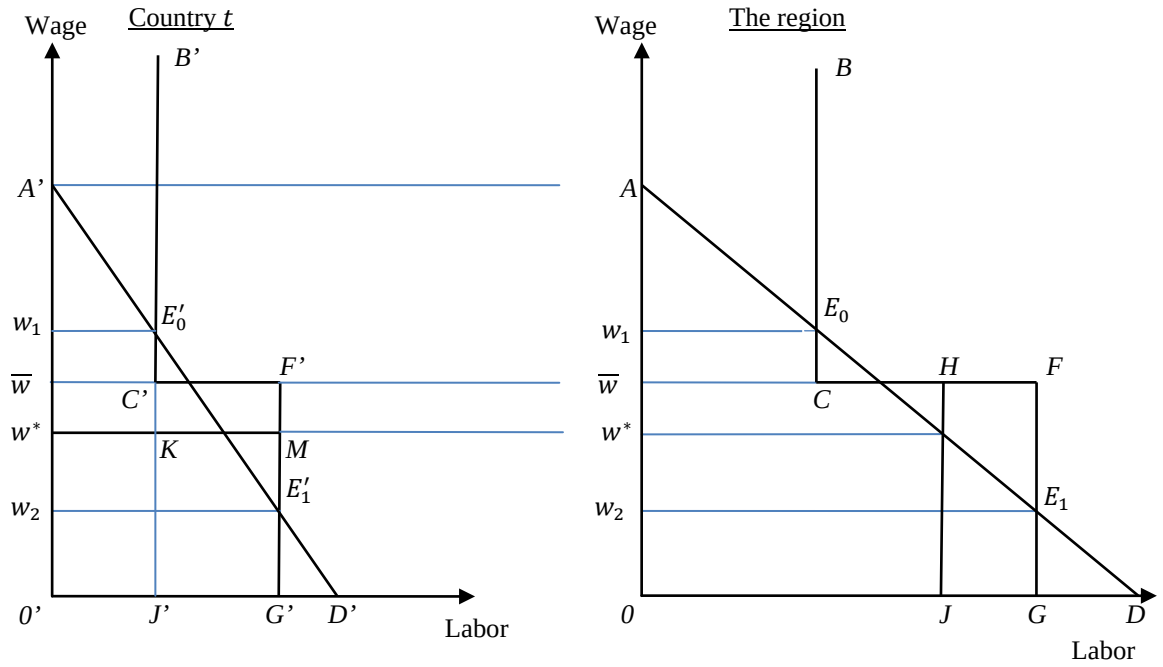
3.7.1. International labor standards

Basu (1999a) uses the same framework as used in the multiple equilibrium model (Section 3.4) in order to analyze international labor standards. This model shows that in a world with no labor mobility and perfect capital mobility, banning child labor in one country will only harm households because firms will move to another country without a ban or with fewer restrictions on child labor. However, if all countries in the same region sign the international

labor standards concerning child labor and ratify them, there will be no point for in firms moving and a ban can thus improve the situation of households.

In order to show this, Basu (1999a) assumes that all households in the region are identical and that children do not work when the wage is above $\overline{w}$ (the threshold level $(1 + m\beta)s$ in Section 3.4). To simplify, he also assumes that $\gamma = 1$, i.e., that children have the same productivity as adults. There are t countries in one region and each country has the same number of consumers and firms. This implies that when the region has N consumers and n firms, each country has $\frac{N}{t}$ consumers and $\frac{n}{t}$ firms. The supply and demand for labor in country t and in the region is depicted in Figure 10.

Figure 10: International labor standards (Basu, 1999a)



As we can see in Figure 10, the demand for labor is given by $A'D'$ in country t and by AD in the region. The aggregated demand AD is simply a horizontal summation of the demand curves in all the t regions. Similarly is $BCFG$ a horizontal summation of the supply curves of labor in all t regions ($B'C'F'G'$).

Further, it is assumed that the world price of the produced good in this sector is 1 and that the world price will not be altered by changes in this region. In addition it is assumed that there is no labor mobility between countries in the region, but there is perfect capital mobility

between the countries. This implies that workers cannot migrate from one country to another, whereas firms have the possibility of moving to another country.

Suppose that we start in an equilibrium where the wage is low (w_2) and there is child labor (E_1). The employment in the region will then be $0G$, and thus the employment in every country will be $\frac{0G}{t} = 0'G'$. Assuming perfect capital mobility, a ban on child labor in one country will not necessarily lead to an equilibrium in E_0' because firms in the country with a ban might move to another country without a ban. With a ban in one country, the aggregated supply curve will change to $BCHJ$ because there would be fewer children available for work. In this case, the wage would be w^*. With this wage, the equilibrium in countries with no ban on child labor would be in M, which implies that households in these countries are better off because the wage has increased. In a country with a ban on child labor, however, the equilibrium would be in K. This makes households worse off because only adults can work, but the wage would still be below the subsistence wage, $\overline{w}$, which implies that households would have to live below the subsistence level.

Then suppose that all countries agree to impose a ban on child labor due to an international labor standard. We would now not observe any capital flight, because each country is as good as another. In this scenario, the equilibrium shifts to E_0, and the country's equilibriums to E_0'. The wage would be w_1, which implies that parents do not want to send their children to work, since they earn enough to feed their family.

As in Section 3.4, this model has limits concerning the inelastic supply of labor, and the level of the crucial wage. In addition, the model may overestimate the effect of perfect capital mobility in the sense that there will always be a cost for firms to move from one country to another. In addition, it is not realistic to assume that when an ILO Convention is ratified it will be fully enforced and monitored. This implies that the incentives to move to another country might be smaller than assumed in this model. Furthermore, no labor mobility is too strong an assumption. In Nepal, for example, many workers migrate to India (same region, different country).

International conventions only urge countries to reduce child labor and take moral responsibility for the phenomenon. I will now turn to international interventions that directly hurt the export industry of the targeted country.

3.7.2. Consumer boycotts, trade sanctions and labels

Consumers boycott a good when someone "refuse[s] to deal with a person, organization, or country as a punishment or protest" (Soanes and Hawker, 2006). The reasons for this refusal may be unfair trade, working conditions, environmental reasons or oppressive regimes. Trade sanctions are similar and are defined as "measures taken by a state to try to force another to do or obey something" (Soanes and Hawker, 2006). One well known boycott is the boycott of Israeli products or businesses that operate in Israel. This boycott has worked on both an individual (consumer boycotts) and national level. For instance, the Belgian government decided in 2009 to stop exporting weapons to Israel (trade sanction)[15]. Another known trade sanction is the American embargo on Cuba[16]. Support for using trade sanctions as a way to reduce child labor arose with Harkin's Bill which proposed (partially) to ban the import of goods produced by children to the US. This caused almost all child laborers in the garment sector of Bangladesh to be fired (Chakrabarty, 2007).

A consumer boycott is always voluntary, as each consumer decides whether they want to participate in the boycott, whereas a trade sanction is something imposed on consumers by governments. When consumers/governments are made aware of the use of child labor in a country or a specific sector in a country, a consumer boycott often arises. There has, for instance, been a consumer boycott (in particular in Germany) of Nepalese carpets due to child labor and the working environment. The aim of such consumer boycotts or trade sanctions is to change the situation in the sector or country they are boycotting. Will such interventions, however, make child laborers better off?

Edmonds (2003) argues that children might actually be harmed by such consumer action. However, as already mentioned, all "negative" interventions imposed on firms will probably harm children, so this argument is valid for other interventions that force firms to reduce its demand for child labor. Due to a boycott (or a ban, or a tax on child labor) child laborers may 1) move to another sector of the economy where the working conditions are worse and 2) get

[15] http://en.wikipedia.org/wiki/Boycotts_of_Israel
[16] http://en.wikipedia.org/wiki/Trade_sanction

a lower wage. Both of these factors may make child laborers worse off. On the other side, a consumer boycott or trade sanction might increase the adult wage, which, in turn, should make households, and thus children as well, better off. Below I look further into what might happen if a consumer boycott or trade sanction starts. In the rest of this section I refer to consumer boycotts, however an analysis of trade sanctions would be equivalent.

Suppose that there are two kinds of firm in the carpet sector in Nepal: one in which child labor is used, and one in which only adult labor is used. Firstly, assume that consumers in the Western world are not aware of the use of child labor in the carpet sector and thus are indifferent between consuming carpets produced by the "bad" firm and the "good" firm. In this case, the price in the two market segments will be equal and the quantity demanded from each of the segments will be the same (see Figure A 1). I then look at the labor market in Nepal (hypothetically) where the firms involved in carpet production demand both adult labor and child labor (see Figure A 2). In this case, it is reasonable to assume that the wage given to children is lower than the wage given to adults.

I look into three different scenarios. In the first, consumers cannot differentiate between carpets made by or without children. In the second, consumers can differentiate between the two kinds of carpet, but they will not substitute adult-made carpets with child-made carpets, and finally, consumers are able to differentiate between and substitute child-made carpets for adult-made carpets.

- *Scenario 1: Consumers are not able to differentiate between products.*

Assume now that it comes to the attention of consumers that child labor is widely used in the Nepalese carpet sector. This is a disutility for some Western consumers who decide to start a consumer boycott of Nepalese carpets. Consumers are not able to differentiate between carpets produced by adults only and carpets where children have participated in the production process, and thus the boycott concerns all Nepalese carpets. Every consumer decides whether or not to participate in the boycott, so that the demand for carpets will probably not decline to zero. Since it is not possible to differentiate between carpets made by and without children, I assume that the decline in each of the markets is equal, so that the price is still equal between the market segments, but lower than before (see Figure A 3).

The question then is how the carpet factories in Nepal react to this decline in prices. Since the quantity needed to satisfy demand is reduced, the demand for labor will go down. Factories can decide only to reduce their demand for child labor, only reduce their demand for adult labor or reduce the demand for both kinds of labor. Child labor is cheaper than adult labor, but also the cause of the boycott. In order to boost the demand for Nepalese carpets again, child labor must be eliminated from the carpet sector and it must be done in a credible way (in the sense that consumers believe that the phenomenon has been eliminated). Since child labor is cheaper than adult labor, the Nepalese factories would not be willing to stop using child labor if they were not sure that all other firms were doing the same. Thus if the Nepalese carpet factories were able to co-operate, they might choose to reduce their demand for child labor to zero and instead increase their demand for adult labor (so that they can meet the current demand) (see Figure A 4). Alternatively, if firms do not want to eliminate child labor in order to boost demand in the next period, they might decrease their demand for adult labor, since adult labor is more expensive than child labor (see Figure A 5).

In the first case, there would be a decrease in child labor and an increase in the adult wage. If the wage increase were large enough, households might want to withdraw their children from the labor market. It should be noted that the adults and children working in the carpet industry do not necessarily come from the same households. This implies that some of the children who lose their jobs will go into another market (for instance, prostitution), whereas others will benefit from the increased wage.

In the second case, child labor is not directly affected by the firm's reaction. However, a decrease in the adult wage for the carpet weavers might make those households send more children into the labor market in the next period, which, in turn, might increase the total supply of child labor in the economy as a whole (not necessarily in the carpet sector).

- *Scenario 2: Consumers are able to differentiate between products, but there is no substitution*

Suppose now that consumers are able to differentiate between carpets (partially) produced by children and carpets only produced by adults. This implies that, when they are made aware of the use of child labor in the production process, they can reduce the demand for carpets made by children, and still consume adult-made carpets. The question is whether the "lost" demand for carpets made by children will lead to an increase in the demand for carpets made by adults

only or just a general decrease in demand. I firstly assume that there is only a decrease in the demand for carpets made by children (see Figure A 6).

A decrease in the demand for child-made carpets would lead to a decrease in the price and quantity of these carpets. This implies that the price for adult-made carpets would be higher than the price for child-made carpets. Since it is possible for consumers to differentiate between the products, there would be no reason for the Nepalese factories to reduce their demand for adult labor (since this would lead to a lower quantity of supplied carpets made only by adults that they could sell for a higher price). Thus, in order to reduce the quantity produced, factories would reduce their demand for child labor. This would lead to a lower incidence of child labor in the carpet sector, but also a lower wage for the remaining child laborers in this sector which, in turn, probably would make them worse off (see Figure A 7).

- *Scenario 3: Consumers are able to differentiate between products and substitute between adult-made and child-made carpets*

The last possibility is that the consumers substitute their demand for child-made carpets with adult-made carets, implying that the demand for adult-made carpets increases and the demand for child-labor carpets decrease (see Figure A 8).

In this case, the price and quantity of adult-made carpets would increase and there would be a corresponding decrease for child-made carpets. Since differentiating between the two products is possible, the rational thing for factories in Nepal would be to decrease their demand for child labor and increase their demand for adult labor. This gives a reduced incidence of child labor in the carpet sector and an increase in the employment of adults (see Figure A 9). At the same time, the child wage would decrease and the adult wage increase. This implies that the adults working in carpet factories would be better off, and the household where they live would also be probably better off. However, the households where the (former) child laborers live would only better off if the adults in those households worked in the carpet sector. If not, they would see a decrease in income so that they might want to increase their child labor supply in other sectors of the economy.

Consumer boycotts might reduce the incidence of child labor in one sector. However, economies are much more complex than only one sector, so a decrease in child labor in one sector does not necessarily mean an overall decrease in child labor. In addition, the children

themselves who become unemployed or on a lower wage are not necessarily better off than before. A way to solve this is through label programs, where a child fund is created so that the child laborers get an alternative (Ballet *et al.*, 2011). In addition, as we have seen above, it is difficult to distinguish between firms using child labor and firms only using adult labor, which means that all firms will probably be treated punitively.

One way to solve the problem of distinguishing between products produced by and without child labor is to introduce labels. Basu, Chau and Grote (2006) show that child-labor free labels force exporters to substitute adult for child labor and thus reduce child employment in the sector concerned. With a label, consumers will pay a premium for the child-labor free products. If the label program is credible, exporters should receive some of the premium paid by the consumers in order to compensate for the substitution of child for adult labor. On the other hand, Maskus and Holmen (2002), cited in Brown (2006), show that when sanctions are imposed on firms that employ children, the wage to the remaining child laborers decreases and the opportunities available for former child laborers are reduced, making the children worse off.

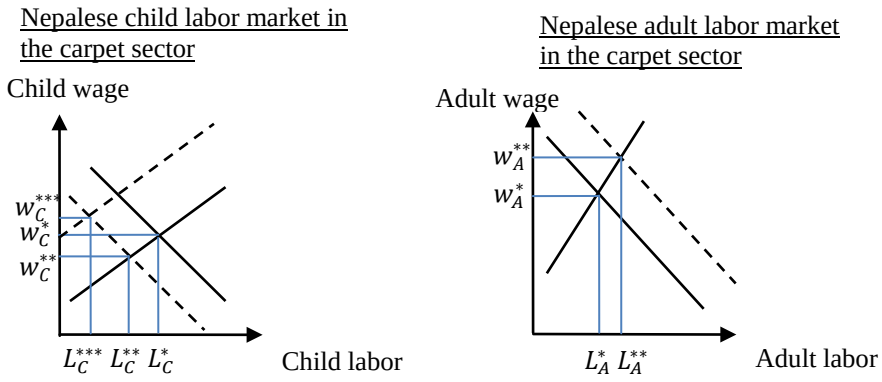
According to Brown (2006), there are two ways in which labels may make child workers better off: 1) if the premium paid by the consumers makes the adult wage exceed the threshold level (see Section 3.4.), so that households do not want to send their children to work; and/or 2) some of the premium the consumers pay is used to provide services for those who were child workers.

Above, we saw that a decrease in the demand for carpets may reduce the incidence of child labor in the carpet sector. However, since adults and children do not necessarily belong to the same household, children are not always better off (through unemployment and lower wages) even though adults are better off in some cases (through higher employment and higher wages).

Let us look at a label program where consumers are willing to pay a premium for a child-labor free labeled carpet. A part of this premium (the increase in price) goes to the factories that have decided only to employ adults (and can thus get a label). In addition, the factories need to pay a fee to the agency organizing the labeling. This fee is used for a child fund for former child workers in the carpet sector and for the children of carpet workers (to avoid them

becoming child laborers). The labor market in the carpet sector is described below in Figure 11. Again, I assume that the wage for children is initially lower than the wage for adults.

Figure 11: Labor market in the carpet sector with a label program



When a label-initiative in the carpet sector starts up (such as Nepal GoodWeave Foundation), the first thing that will happen (given that some of the factories in the sector participate in this program) is that the demand for child labor will be reduced, and, in order to compensate for lost production, the demand for adult labor will increase. This is due to the fact that the factories receive more money for a labeled carpet than for a non-labeled carpet. Because of the increase in the adult wage, the supply of child labor will be reduced for those households that come above some threshold level of income and do not want to send their children to work anymore. In addition, the child laborers who lose their jobs will be offered some compensation in the form of, for example, educational opportunities. This implies that they might be better off after this initiative. In addition, we see that after the demand and supply of child labor have adjusted, there is not necessarily a decrease in wages for the remaining child laborers: there may actually be an increase in their wages. This intervention is discussed more in detail in Chapter 7, where I also present a case-study of Nepal GoodWeave Foundation.

3.8. Discussion

In the models shown above, I analyzed the effect interventions have on the *incidence* of child labor and not on the *welfare* of children. This is an important issue, and, as we will see in the discussion below, interventions may reduce the welfare of children which make the interventions problematic.

Interventions that reduce the demand for child labor will also, as we have seen, reduce the wages given to the children left in the labor market. These children may either start to work

more in order to get the same income as before, or they may stop working because of the low wage and start to go to school. The children who lost their jobs may either seek new jobs (which may be worse than the ones they had) or start schooling. Many of the households that send their children to work do so because they live in extreme poverty and need more income in order to survive. Reducing the income gained from child labor will only make these households worse off because they have less money available for consumption, which might imply that they will starve. Even though the child goes to school, his welfare is lower since he is starving (Udry, 2004).

The former child laborers might also become inactive, meaning that they neither work nor go to school. This can arise in areas far away from the nearest school, or where the schooling costs are high or if the child is set to do domestic chores or seeks new employment (Biggeri *et al.*, 2010). It is thus necessary to compensate households for their lost income. If that revenue is compensated (this might be through getting food at school or that the family is directly compensated) there should be an increase in welfare because the time spent on education is increased and consumption remains the same (OECD, 2003).

Interventions affecting the supply of child labor are more likely to have a positive impact on child welfare because it is the household's decision to withdraw children from the labor market. If the quality of schooling is increased, households find it more valuable to send their children to school instead of to work, and thus reduce the supply of child labor. Furthermore, a decrease in the supply of child labor also gives the remaining child laborers a higher wage which, in turn, makes them better off (with a higher income). This increase in wage might also reduce the time children spend working even more because they can work less for the same wage (this would be in the next period after the increase in wages).

In addition, an intervention that has a side-effect that reduces the wages of adults might increase the incidence of child labor in the economy because a lower wage means that the total income to the household decreases and that might make it more difficult to reach subsistence consumption. This particularly concerns interventions in certain sectors of the economy.

As we can see, agents designing interventions in order to reduce child labor should also take into account how these interventions affect the welfare of children. It appears that

interventions on the supply-side in the labor market are more likely to increase the welfare of children, rather than interventions affecting the demand-side. In the next chapter I look into the empirical research that has been done in this field in order to see whether such theory fits with reality.

Chapter 4: Empirical research

In Chapter 3, I analyze various theories examining interventions against child labor. I will now turn to consider empirical investigations concerning child labor. There is a large literature on how family income and education (including the quality, cost and availability of education) affect the incidence of child labor. Below, I summarize the empirical research on child labor and education and family income, in addition to the (more limited) research on the role of credit access, parental attitudes and international interventions against child labor.

4.1. Income and child labor

Theory predicts that poverty is one of the main determinants of child labor (Basu and Tzannatos, 2003). Households send their children to work when the income from adult work (and other non-child labor income sources) is so low that they cannot cover their subsistence needs (Basu and Van, 1998). In this case, child labor is a matter of survival. If this is true, there should be a clear relationship between income variables (such as total consumption per capita and total income per capita) and the variables measuring child labor.

Using household level panel data from Vietnam from 1993 and 1998, Edmonds (2005) finds a negative relationship between per capita expenditure and child labor. In particular, he finds that, in 1993, the incidence of child labor was 39% in the poorest quintile and 16% in the richest quintile. Edmonds finds the same relationship five years later. In his study, Edmonds also finds that if improvements in per capita expenditure are large enough to move the household above subsistence level, then this improvement can explain 80% of the decline in child labor. If the improvements in per capita expenditure are not that large, then there is little evidence that such improvements have an impact on child labor. This suggests that there is not necessarily a linear relationship between per capita expenditures and child labor (this supports the model by Basu and Van (1998)). Other studies that find a negative relationship between income and child labor are, for example, Bacolod and Ranjan (2007), Sakamoto (2006), Basu and Ray (2002) and Edmonds (2008).

Edmonds (2005) also discusses why the hypothesis that child labor declines when households get richer has met with opposition. He has two explanations why some studies do not find the expected relationship between income and child labor. The first one concerns parental

attitudes, i.e., that parents do not find it painful (or bad) to make children work. If parents do not find it painful to make their children work, improvements in income will not necessarily lead to a decrease in child labor because poverty is not the reason why they work (they may be working because of culture or tradition, for example). The second explanation concerns variables that are correlated both with child labor and improvements in income, such as technological changes and returns to schooling. The problem here is that the reason for the decline in child labor may as well be technological changes and returns to schooling, and not necessarily improved income. Such variables may affect the results of investigations studying the relationship between income and child labor because of the problem with multicollinearity. Ray (2000) finds that the hypothesis concerning child labor declining with income fits with data from Pakistan, but finds no evidence for that hypothesis in Peru. Furthermore, Ersado (2005) finds that poverty is a significant determinant of child labor in rural areas, but not in urban ones.

Basu *et al*. (2010) find an inverted-u relationship between landholding and child labor. Using a fixed effect estimation, they find that if the amount of inherited land in a family increases by one unit, child labor increases by 0.707 hours (42 minutes) per day (significant on a 1% level). When squaring the variable of inherited land they find a coefficient equal to -0.087. These results suggest that poverty is not necessarily *the* reason for child labor. The logic behind the result is simple: when the household has more land, it needs more labor in order to cultivate the land. If the land does not give enough income to cover the expenses of hiring labor, the household needs to use its own labor force, including children. In addition, it may be necessary for children to do more housework, as women move to working in the fields and have less time available for housework. Similarly, Edmonds and Turk (2002) find that when households start a family business, then child labor increases.

Another factor that is associated with income is the child wage rate. A high child wage rate will increase the opportunity cost of education and make child labor more attractive. Basu and Ray (2002) find that if the child wage rate increases by one unit, child labor increases between 0.013 and 0.015 daily worked hours[17]. Ray (2000) also finds that an increase in the child wage is associated with more child labor.

[17] Significant at a 5% level

I have now shown that there is some empirical evidence that an increased income will lead to a decrease in child labor. However, it is not always found evidence for this hypothesis. In the next section, I look at the empirical evidence for the impact of education on the incidence of child labor.

4.2. Education and child labor

Education and child labor are closely linked because both activities occupy a child's time. If children spend more time working, there is less time available for school; if children spend more time in school, there is less time available for work. In Chapter 3, I found that if the cost of education is reduced, or the benefit of education increased, child labor ought to decrease.

By studying household data from rural India, Sakamoto (2006) finds that if there is only a primary school in the village, children are more likely to work than if there is a primary and a middle school. When a village does not have a middle school, children may have to walk long distances in order to attend school. This is "wasted" time that could have been spent working. Sakamoto also finds that if the costs of education increases (for instance, for fees and uniforms) children are more likely to work.

Edmonds (2008) uses MICS[18] data for several countries and finds that the more hours a child works during the week, the less probable it is that the child will also go to school. This result is, of course, logical: the more a child works, the less time is available for school. What is interesting in Edmond's results is that he estimates that a child can work 8 hours a week without work interfering with school. After 8 hours of work a week, combining education and work becomes more and more difficult, until it becomes almost impossible (after 30 hours worked during a week)[19]. Furthermore, Edmonds (2008) reports that studies have been conducted that show that cash transfers, conditional on school attendance, tend to increase school attendance but do not necessarily decrease child labor. One possible explanation for this is that work done in the household is flexible in the sense that it can be done both before and after school. Gee (2010) finds that the conditional cash transfer program in Nicaragua reduces the probability of a child becoming a child laborer. Furthermore, the program reduces the hours worked by 3.65 hours per week for children who are already working. Janvry *et al.*

[18] Multiple Indicator Cluster Survey, used by UNICEF.
[19] This does not imply that the work done by children is not harmful to their development before it reaches 30 hours per week.

(2006) show that conditional cash transfer programs help to keep children in school in the case of a shock (such as a drought or flood), but do not prevent parents from increasing the use of child labor in response to such a shock. This suggests that conditional cash transfer programs may work as a safety net for poor households, in the sense that the programs secure some schooling for the poor.

Theory predicts that education increases income in the future, and this is also shown in many empirical investigations (Pritchett, 2001). Beegle *et al.* (2009) find that child labor significantly reduces school attainment, which, in turn, should reduce the income child laborers receive in the future. However, Beegle *et al*. also find a positive relationship between child labor and waged work when children become adults. This suggests that the school attainment that is lost due to child labor is partially compensated for by the work experience that the child gets.

Furthermore, education may help to break the vicious circle of child labor and poverty. Basu *et al.* (2010) find evidence for a negative relationship between parental educational attainment and child labor using fixed effect regressions. In particular, they find that when the schooling of adult males in the household increases by one year, child labor decreases by 0.036 (3 minutes) daily hours worked. When the schooling of adult females increases by one year, child labor declines by 0.110 daily worked hours[20]. Sakamoto (2006) also finds that the educational attainment of parents has a negative relationship with child labor (Sakamoto controls for household income, whereas Basu *et al.* control for inherited land, but not for household income).

As I have shown, education appears to be an important factor in the fight against child labor. However, households are not free to choose between child labor and education in the sense that they cannot borrow on the child's future income. In the next section, I turn to empirical evidence on the relationship between child labor and credit access.

4.3. Credit restrictions and child labor

In Chapter 3, we saw that, in the case of failures in the financial market, households may invest less in education than they would have invested if financial markets were perfect. Fuwa

[20] Significant at a 1% level.

et al. (2009) estimate (using 2SLS) that, if a household is credit-constrained, the children in that household will spend approximately 1.4 days less in school during a week, and 1.6 days more in remunerative work, than if a household is unconstrained[21]. Similarly, children in credit-constrained households will use 1.65 days more during a week on household chores and child minding, and 2.1 days less on leisure, than children in households that are not credit-constrained. These results suggest that credit restriction has a negative impact on education (equating to less time spent at school) and will increase child labor. This may imply that improved access to credit should increase school attendance and reduce child labor.

Microcredit is one mean that can be used to improve household's access to credit. According to Islam and Choe (2009) microcredit may have a positive impact on education through three channels: by increasing the borrower's income, by consumption-smoothing and/or by empowering women. Islam and Choe also claim that microcredit may have adverse effects on child labor, because the loan is often used to start a family business which may be associated with more child labor. When testing their hypothesis empirically, Islam and Choe found that microcredit has a negative impact on both schooling and child labor in Bangladesh (i.e., school attendance was reduced and the incidence of child labor increased). Similarly, Hazarika and Sarangi (2005) found that microcredit increases the probability of child labor in Malawi, because children have to do more household work (since adults are busy running the new business).

4.4. Parental attitude and child labor

In Basu and Ray's (2002) model, if the bargaining power of the woman in the household rises, child labor will fall at first. When the woman becomes the dominant agent in the household, child labor will start to increase again. Basu and Ray have calculated women's bargaining power in Nepal in two ways: one that measures the share of female earnings in the household's total income (from adults), and one that measures the share of educational attainment of women against the total educational attainment of the adults in the household.

The authors estimate that the woman's share of educational experience in households with working children is 0.4, while in households without working children it is 0.39. Similarly,

[21] Households are considered to be "unconstrained" if they have tried to borrow money and have been able to borrow all they asked for. If the households were not able to borrow the amount they requested, they were considered as "credit-constrained" households.

the woman's share of total household income is 0.27 in households with working children, and 0.29 in households without working children. Using different econometric methods, Basu and Ray (2002) find that, even though the magnitude varies, the sign of the variable measuring the female share of adult education is negative and significant with respect to child labor hours (with a coefficient between $-1{,}73e^{-7}$, Heckman correction and -0.974, 3SLS). When squaring the two measures the sign is positive and significant (coefficient between $1{,}19e^{-7}$, Heckman correction and 1.041, 3SLS)[22]. For the variable measuring a woman's share of adult earnings, they find, using 3SLS, a coefficient of -0.278 (significant at a 5% level) and, when squaring the variable, they find a coefficient of 0.207. Together these coefficients suggest that there is a relationship between female bargaining power and child labor which takes a "U-form".

In addition, Basu and Ray (2002) also find that the incidence of child labor is lower when women have all the power ($\theta = 1$) than when men have all the power ($\theta = 0$). Similarly, Sakamoto (2006) finds that male-dominated households are more likely to send children to work than female-dominated households, and Reggio (2011) finds that an increase in female bargaining power in Mexico is associated with fewer working hours for girls, but not for boys.

4.5. International interventions and child labor

Theory predicts that international interventions do not necessarily reduce child labor. Basu (1999b) points out that international interventions (such as labor standards and trade sanctions) do not take into account that most children work because they have to (the household is so poor that it cannot afford to have the child in school). Furthermore, such interventions punish a country for using child labor in the export sector, which implies that, if the interventions are properly enforced, they will probably drive children into other sectors such as the sex or brick industry. A good example here is what happened in the garment factories in Bangladesh when the U.S. threatened to stop importing goods made by children (the Harkin Bill in 1992). Child laborers were fired and many of the girls turned to prostitution (Kahir, 2011, p. 161-162).

Boockmann (2010) has studied the impact of Convention C138. He found that, in 1990, school attendance was not higher, and the incidence of child labor was not lower, in countries

[22] Measured in hours worked per day.

that had ratified the ILO Convention C138 than countries that had not ratified the Convention. Furthermore, Boockmann finds that school attendance was not higher for the age group protected by the Convention (children below the age of 14) than for the age group not protected.

Product labeling is an intervention designed to make consumers able to differentiate between products produced by children and products produced only by adults. Basu (1999b) explains that labeling has authenticity problems and still attacks export sectors (e.g., as do other international interventions). On the other hand, if a label program is designed properly, in the sense that it offers child laborers an alternative and maybe gives compensation for lost income, the initiative may help to reduce child labor without forcing children into prostitution or starvation. Because label programs may have a positive impact on child labor and child welfare, I take a closer look at GoodWeave (a labeling initiative in the carpet sector in India, Nepal, Afghanistan and Pakistan) in Chapter 7.

I have now considered the empirical research that has been done on child labor. In the two following chapters, I use Nepal as an example to show how interventions in this country may have affected the incidence of child labor. I start by describing the child labor situation in Nepal today, and how it has changed over time, before I move on to interventions done in Nepal.

Chapter 5: Child Labor in Nepal

Nepal is a small, landlocked country, situated between India and China. It is a low-income country with a GDP per capita of $1,200 (measured in 2010 PPP[23] US$) (CIA, 2011), and a Human Development Index (HDI) of 0.458, giving the country a ranking of 157 (out of 187 countries) (UNDP, 2011). That children work is a widespread phenomenon in Nepal: in fact, one in three Nepalese children is working (CBS, 2009). On walking around the capital Kathmandu, you will find, for instance, children begging, working in small family restaurants and as conductors on buses. Children are found to work mainly in the family, where they, for example, help out with agriculture or in a family restaurant or tea shop. Quite a number of children will also be working as domestic workers in middle-class homes.

In this chapter I look into the child labor situation in Nepal today and how it has changed over recent decades. On a positive note, I show that there has been a significant decline in the incidence of child labor since 1950.

5.1. Child labor in Nepal today

According to the Nepal Labor Force Survey from 2008, 33.9% (2.1 million) of Nepalese children between 5 and 14 years old had been economically active the preceding week (currently economically active) and 24% (1.5 million) had been economically active the preceding 12 months (usually economically active).

The difference between these two definitions is important: a child is considered to be currently economically active if they have worked for more than one hour during the preceding week, whereas they are considered as usually economically active if they worked, or were available for work, for more than half of the preceding year (it appears that time spent on education is considered as time not available for work). It is, thus, reasonable to assume that a fraction of currently economically active children between 12 and 14 years old cannot be considered as child laborers, because they only do light work that does not interfere with their schooling, and that is not harmful to them. Furthermore, it is unclear whether one hour of work in a family restaurant should be classed as child labor or not. Even though the definition

[23] Purchasing Power Parity

of currently economically active children is not the same as child labor, I will, for simplicity, use the term “child labor” in this chapter.

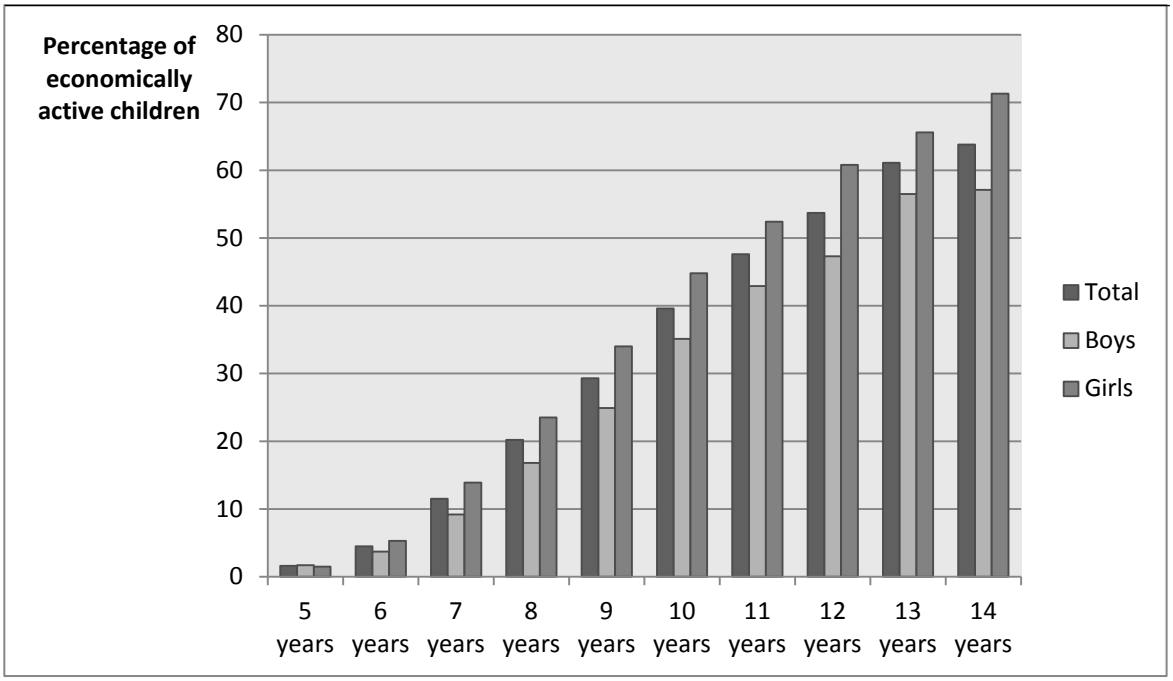
As can be seen from Table 5, the incidence of child labor was higher among girls than boys (37.8% versus 30.2%). In addition, child labor was more common in rural areas than in urban ones (43.3% versus 14.4%). This is reflected in the activities performed by children, as shown in Table 5. Close to 89% of child laborers worked in agriculture, hunting and forestry, which are mainly rural activities. These numbers suggest that many children help out their family on the family farm. Such work can be light work (and thus not child labor, as long as the child is above the age of 12), or amongst the worst forms of child labor (working with dangerous substances, hard work or for long hours). Other important industries where child labor is found are the wholesale and retail trade (33,000), manufacturing (29,000) and in hotels and restaurants (20,000). The category named “other”, involving 144,000 children, includes work such as mining and quarrying, transportation, and domestic work (17,000 work in housekeeping). Furthermore, 561,000 children spent time fetching water for at least one hour per week, and 383,000 spent time collecting firewood (CBS, 2009).

Table 5: Overview of economically active children in Nepal (CBS, 2009, p. 133-140)

	Percentage
Labor force participation rate among children aged 5 to 14	33.9%
Boys	30.2%
Girls	37.8%
Urban areas	14.4%
Rural areas	43.3%
By activity:	
Agriculture, hunting and forestry	88.7%
Wholesale and retail trade	1.6%
Manufacturing	1.4%
Hotels and restaurants	1.0%
Construction	0.3%
Private households with employed person	0.1%
Other	6.9%

It is clear from Figure 12 that the incidence child labor increases with age. When a child is 5 years old, the probability of them working is 1.6%, when they are 10 years old, the probability is 39.5% and at 14 the chance of finding that a child works is 63.8%. This is to be expected, since a child is able to carry out more activities as they grow older. Furthermore, we see that the incidence of child labor is higher among girls than boys for all age groups. When a girl is 14 years old, the probability of her working is above 70%, whereas it is 57% for boys. When considering these numbers, it is important to have in mind that they reflect the percentage of 14 year olds who have been economically active for at least one hour during the preceding week (and not the incidence of child labor).

Figure 12: Economically active children by age (CBS, 2009, Table 13.1)



The Nepal Living Standard Survey from 2002/03 estimated how children's time was allocated between education and work (see Table 6). They found that 55.3% of children only went to school, whereas 10.8% only worked. Furthermore, 20.6% combined school and work, whereas 13.3% neither worked nor went to school. However, in the case of inactive girls, it is likely that many of them did housework, especially after they turned 10.

Table 6 also shows that it was more common for boys either only to go to school or to combine school and work than it was for girls. In addition, girls were more likely only to work or to be inactive than boys. It was also more common only to attend school in urban areas than in rural areas (81.9% versus 51.7%); it was more common to combine school and work, only work or be inactive in rural areas. This reflects both the fact that there was a higher incidence of child labor in rural areas and that children were found working mainly in agriculture.

Table 6: Combinations of child labor and education (CBS, 2004, Table 12.7)

	School only	School and work	Work only	Not active
Total	55.3%	20.6%	10.8%	13.3%
Boys	59.3%	22.7%	7.5%	10.4%
Girls	51.1%	18.3%	14.2%	16.4%
Urban areas	81.9%	8.4%	4.0%	5.7%
Rural areas	51.7%	22.2%	11.7%	14.4%

As already mentioned, children considered as not active may be doing housework, especially girls. From Table 7, we see that 40.9% of girls did household chores during the week preceding the survey. Their main activities were cleaning (31.8%), cooking (21.9%) and child minding (12.2%). Boys did not participate as much as girls in these non-economic activities: 10.1% cleaned and 5.6% cooked during the reference period.

Table 7: Non-economic activities performed by children aged from 5 to 14 (CBS, 2009, Table 14.1)

	Total	Boys	Girls
Cooking	13.5%	5.6%	21.9%
Cleaning	20.7%	10.1%	31.8%
Minor repairs	2.8%	1.3%	4.5%
Shopping	2.4%	2.6%	2.1%
Caring	1.0%	0.8%	1.3%
Child minding	9.2%	6.3%	12.2%
Other activities	29.2%	17.8%	41.3%
Total	28.9%	17.6%	40.9%

Nepal has identified nine sectors in which child labor is considered to be of the worst forms. These sectors are domestic work, portering, the carpet industry, mining, working at brick kilns, working in the sex industry, garbage recycling, transportation and working for armed forces or armed groups. Of all child laborers in Nepal, approximately 6.5% were working in the worst forms of child labor (CBS, 2004; Edmonds, 2006). In 2001, the ILO undertook several studies in order to estimate the number of children working in the worst forms of child labor (see Table 8). A total of 127,000 children were found to do such work (excluding trafficking). Most of these children were working as domestic workers or child porters (55,655 and 46,029 children respectively). It was estimated that more than 17,000 children were working in bonded labor, and that between 5,000 and 20,000 children were trafficked every year.

These numbers have probably (and hopefully) decreased since 2001. All bonded laborers were set free by law in 2002 when the government banned bonded labor (Government of Nepal, 2002). Furthermore, preventing the worst forms of child labor has been one of the main priorities in the fight against child labor both for the government and the ILO, especially after the country ratified Convention C182 on the worst forms of child labor in 2002.

Table 8: Worst forms of child labor in Nepal (Edmonds, 2006; KC *et al.*, 2001)

	Number of children working in these sectors
Domestic workers	55,655
Child porters	46,029
Bonded labor	17,152
Carpet sector	4,227
Ragpickers	3,965
Mining	115
Total	127,143
Trafficking[24]	5,000-20,000 per year

I have now set out the child labor situation in Nepal today. In the next paragraph I look into how this situation has changed over time.

[24] Trafficking ”involves the removal of the person from a familiar environment, but not necessarily the crossing of international borders” (KC *et al.*, 2001).

5.2. Child labor in Nepal over time

According to De Groot (2009), the incidence of child labor has declined since 1960. Table 9 shows that the incidence of child labor for children between 10 and 14 years has declined from 68% in 1950 to 38% in 2000. Furthermore, the labor force participation of children in the same age group, as measured in the Nepal Labor Force Surveys (CBS, 1999; 2009), has decreased from 60.9% in 1998/99 to 52.7% in 2008. The difference between these estimates is due to a difference in definition: where de Groot measures "child labor", the labor force surveys measures "currently economically active children".

Table 9: Child labor in Nepal over time (de Groot, 2009; CBS, 1999; 2009)

	Numbers from De Groot (2009)						Numbers from Nepal Labor Force Survey	
Year	**1950**	**1960**	**1970**	**1980**	**1990**	**2000**	**1998/99**	**2008**
Incidence of child labor (10-14 years)	68%	66%	57%	49%	41%	38%	60.9%	52.7%

When we observe a decline in child labor, it is interesting to consider what factors may have contributed to the decline. In the next chapter I look at interventions in Nepal that may have influenced the incidence of child labor.

Chapter 6: Interventions in Nepal

As we saw in Table 9 in Chapter 5, there has been a regular decrease in child labor since 1950, especially since 1960. In this section, I want to elaborate on the factors that might have contributed to this decline, such as international commitments, legislation, education reforms and the presence of NGOs working towards the elimination of child labor.

6.1. International Commitments

Nepal has made several international commitments to the protection of children. In 1990, the country signed the Convention on the Rights of the Child (CRC) which states, in Article 32, that the child should "be protected from economic exploitation and from performing any work that is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development" (OHCHR, 1989). When signing the CRC, Nepal committed to legislation that would provide a minimum age for employment, regulation for working hours and conditions, and provide penalties and/or sanctions to ensure that Article 32 was enforced. These commitments were renewed when Nepal ratified the ILO's Convention C138 on the Minimum Age of Admission to Employment in 1997 and Convention C182 on the Worst Forms of Child Labor in 2002.

The CRC also commits Nepal to universal, compulsory and free primary education. In addition, the country should encourage secondary education. Furthermore, Nepal has also made similar commitments through SAARC (South Asia Association for Regional Co-operation), where children's rights have been an important topic on the agenda since the 1990s.

Even though Nepal has made these international commitments, child labor is still a significant problem in the country. If the Conventions were enforced, there should be (in theory) no child labor left, which is not the case. This implies that the Conventions have not been enforced. This might be partly due to the Nepalese Civil War between 1996 and 2006. One of the most important reasons why the Conventions have not worked is probably a lack of international institutions with the power to ensure that signed (and ratified) conventions are enforced. Furthermore, the ILO relies mainly on voluntary compliance with labor standards: this does not necessarily give the countries incentives to follow labor standards (ILO, n.d.).

It is possible, of course, for individual countries to impose economic sanctions on Nepal for non-compliance with the ratified Conventions; however this might not be enough to get the country to change its tack. This being said, the Nepalese government has undertaken several interventions in order to meet their international commitments, but these initiatives have only been successful to a certain extent. It appears that the main deficiency in the interventions is the lack of proper monitoring and enforcement of national laws.

6.2. Initiatives by the Government of Nepal

In addition to the international commitments mentioned above, Nepal has made important progress in its own legal system in order to protect the rights of child workers. In the Children's Act from 1991 and the Child Labour (Prohibition and Regularization) Act from 1999, Nepal bans child labor for children under the age of 14, and bans the worst forms of child labor. In addition, the acts set limits on how many hours a child between 14 and 16 years can work on a daily and weekly basis, and what the working conditions for children should be. The problem, however, with these two Acts is that they refer to work done in "any factory, organization, firm, company or group established under prevailing law with the objective of carrying out any industry, occupation or service" (Government of Nepal, 1999). This implies that family-based work, such as work in agriculture, in family restaurants and shops, is not included in the legal framework. Thus, such work is not illegal, even though the child has not turned 14 (UCW, 2003).

In 2004, the Government of Nepal launched the "National Master Plan on Child Labor". In the Master Plan, Nepal commits to improving the regulations and existing rules on child labor. The aim of the Master Plan was to eliminate the worst forms of child labor by 2009, and all forms of child labor by 2014 (Government of Nepal, 2004). Child labor is defined in this Plan as "work or activity carried by children below the ages as defined by the constitution of the country and as explained in the Children Act and Labour Act" (Government of Nepal, 2004, p.2). This implies that all light work done by children below the age of 14 is included in the definition. Unfortunately, the government has not been able to reach these goals and has now revised the Master Plan with the aim of eliminate the worst forms of child labor by 2016 and all forms of child labor by 2020 (Tamang, 2011).

As already mentioned, schooling is an important factor in the fight against child labor. In Nepal, every child "shall have the right to receive free education from the State up to

secondary level" (Government of Nepal, 2007), but schooling is not compulsory by law. Since the 1980s, the Nepalese government has made several improvements in the educational system in order to achieve universal primary education. For instance, Nepal now has free primary education, free textbooks, and scholarship programs. It also plans to make primary education compulsory (Shiwakoti *et al.*, 2004). The Compulsory Primary Education program in Nepal aims to reach all part of the country by 2015 and to make schooling compulsory by law by 2012 so that children between 5 and 10 years old must complete five years of education (Shiwakoti *et al.*, 2004).

6.3. Interventions by other agents

The problem of child labor is closely linked to the enforcement of laws and regulations. The government has very limited financial resources and manpower, making it difficult to monitor and enforce its national laws. Furthermore, it is difficult for the government to monitor the informal sector in the country (de Groot, 2010). These monitoring problems make the work of NGOs and labor unions indispensable.

At the beginning of this century, a total of US$62.6 million was allocated annually to 29 international NGO programs related directly or indirectly to child labor. When not considering the programs on rural development and primary education, a total of US$18.3 million was allocated annually to programs related to child labor (ILO and IPEC, 2001). When looking at the geographical distribution of programs, ILO and IPEC (2001) find that the 29 programs are situated mainly in districts with road access and not where the incidence of child labor is highest. Furthermore, ILO and IPEC (2001) report that 240 NGOs are working to help children in Nepal.

The ILO and IPEC started to work with child labor in Nepal in 1995 when the government of Nepal and the ILO signed a Memorandum of Understanding. The aim of this memorandum was to regulate, restrict and eventually eliminate child labor, and raise awareness of the consequences of and solutions to the child labor problem. Following this agreement, IPEC has put the topic on the national agenda, and has been able to create a legislative framework against child labor. IPEC's main project (in the framework of the Time-Bound Program) was to work to reduce the worst forms of child labor. From 1995 to 2005, IPEC also worked for the elimination of bonded labor in Nepal: this was eliminated, by law, in 2002 (ILO and IPEC, 2004). Today, the ILO in Nepal promotes compulsory schooling, social mobilization

and the rehabilitation of child laborers and the protection of children. Furthermore, the organization has continued to work against the worst forms of child labor and rescues children from this kind of work (Li, 2011).

UNICEF started its work in Nepal in 1968 (UNICEF, n.d.-b). UNICEF has been working indirectly against child labor for a long time through school programs, a birth registration system, parental legal communities (that identify children at risk in order to give them help) and child protection systems (that educate social workers in order to help children at risk, and victims). Recently, UNICEF in Nepal started a program directly targeting child laborers. Their main target is children working in the worst forms of child labor. The program's aim are divided into three parts: (1) to develop programs with services such as schools, income-generating activities, and vocational training; (2) to provide awareness campaigns to change opinions about child labor, and (3) to work on capacity-building at both a local and national level, in order to make sure that the law is respected. UNICEF aims to create a structure so that the organization itself will be able to pull out of the project and give the Government of Nepal responsibility for it (Andersen, 2011).

Other important agents in the fight against child labor in Nepal are the labor unions. Two large labor union federations in Nepal, GEFONT and NTUC, have been working on the issue of child labor together with the ILO. GEFONT has been working successfully towards eliminating child labor in the tea estates in Eastern Nepal, whereas NTUC provides educational opportunities for the children of the members of the labor union. Furthermore, the labor unions work to implement codes of conduct and raise awareness of the problems with child labor among their members. However, the labor unions are not able to target children that migrate to Kathmandu in the search for work, because the age barrier to become a member of a labor union is set at 16 years old. The impact of labor unions should not be underestimated. In certain sectors, especially the informal sector, labor unions will be more effective in monitoring the child labor situation than the government, because of their members (de Groot, 2010).

As mentioned above, many organizations work either directly or indirectly against child labor in Nepal. Child Workers in Nepal Concerned Centre (CWIN) is a pioneer organization in the work against child labor. Established in 1987, CWIN has been acting as a "voice of children" in Nepal while lobbying, campaigning and putting pressure on the government to protect and

promote children's rights, and also to end exploitation, abuse and discrimination made against children (CWIN, n.d.). Another important organization is World Education that gives child laborers access to both formal and non-formal education (see below). There are also NGOs that are working in certain sectors. CWISH (Children-Women in Social Service and Human Rights) has been targeting domestic child labor, and GoodWeave has been working with child labor in the carpet sector.

As pointed out before, education is an important tool in the fight against child labor. World Education has dedicated the last years to make education more available for children working in the worst forms of child labor and children at risk. In order to give children from poor families the opportunity to go to work, the organization has used targeted scholarships which support the cost of education and compensate for the lost income. Furthermore, World Education has started "Open Learning Centers" where children can drop in some hours a day. This is an important tool to make children that either have dropped out of school, or never went to school the opportunity to combine work with schooling (World Education, 2009).

There are some issues concerning NGO programs. Firstly, there is uncertainty about the sustainability of the programs. NGOs rely upon funding for their projects: when the estimated time for the project is over and no more funding is left, the program might be stopped. Secondly, because of the limited resources available, there may be problems with the quality of the programs. Thirdly, there is a lack of cooperation between the different NGOs, implying that some areas are covered many times, whereas others are not covered at all (de Groot, 2010).

As we have seen, the child labor situation in Nepal is problematic; one in three children is economically active. This practice implies that many children lose the chance to go to school, something which is important to secure their futures. The Government of Nepal has several international commitments, in addition to laws and regulations in order to eliminate child labor. However, these laws are not obeyed, mainly due to a lack of enforcement on the government's side (which is due to a lack of financial resources and manpower). In addition, many NGOs work in the field of child labor in Nepal. Due to a lack of funding and a lack of co-operation between different organizations, the work is not as effective as it could be.

One of the problems concerning co-operation between NGOs in Nepal comes to light when one NGO rescues child laborers, another one rehabilitates the child laborer and a third one follows up on former child laborers when they return to their village. An NGO that tries to do all of this is the Nepal GoodWeave Foundation, as it rescues children from child labor in the carpet sector, rehabilitates them and finally follows up on the children for a certain time after they have left the rehabilitation center. In the next chapter, I take a closer look at the Nepal GoodWeave Foundation.

Chapter 7: Nepal GoodWeave Foundation

The carpet sector continues to be an important industry in many Asian countries such as India, Pakistan and Nepal. In 1993/94, the carpet industry represented nearly 50% of the value of total export from Nepal (CBS, 1998, Table 14.7). The industry is a work-intensive one which has created many jobs in poor countries; however, many of these jobs have been filled by children and not by adults. There are several reasons why children are used in this industry, one of them being the so-called "nimble finger" argument: children have smaller fingers that are more able to knot carpets than adults. The working environment in the carpet factories is poor: they are filled with dust and have bad lighting, two reasons why child labor in this sector is characterized as being one of the worst forms of child labor.

In this chapter, I give an overview of the carpet sector in Nepal and why children are used as a part of the workforce in this particular sector. Then, I explain why child labor in the carpet sector is considered to be one of the worst forms of child labor. Then, I analyze in greater detail a label program in the carpet industry, applying the theory discussed in Chapter 3, to see whether the program is likely to reduce child labor, and I discuss whether there is empirical evidence for such a reduction.

7.1. The carpet sector in Nepal

The Nepalese carpet sector represented 6.7% of total exports from Nepal in 2009 (Nepal Rastra Bank, 2010). Since 1993/94, Nepal's share of carpet exports has gradually declined from nearly 50% of its total export (see Appendix B for details). This is due both to a drop in the value of carpet exports (9,534 million rupees, or 121.7 million USD, in 1993/94 to 4,068 million rupees, or 51.92 million USD[25], in 2009/10), and an increase in the value of Nepal's total exports (from 19,077 million rupees, or 244.2 million USD in 1993/94 to 61,126 million rupees, or 782.4 million USD in 2009/2010). Products that have increased in importance in Nepal's total export are, for example, pulses (a leguminous crop), polyester yarn, textiles and catechus (a type of spice). It is important to note that these figures represent the gross export of carpets. The value of the exported carpets is low because wool is, to a large extent, imported, which decreases the income gained from manufacturing carpets.

[25] Exchange rate of 05.10.11, 100 NPR = 1.28 USD

In the mountains of Nepal, there is a tradition of weaving. Traditional weaving took place initially only for the domestic market. After the Chinese invasion of Tibet in 1950, when many Tibetan refugees came to Nepal, the industry of exporting carpets started up (Central Carpet Industries Association, 2010). When the demand for Tibetan carpets increased, production started outside the Tibetan refugee camps, and from the late 1980s and early 1990s production and exports increased year on year (KC *et al.*, 2002). In the mid-1990s, exports to Germany started to decline, orders were cancelled and some factories had to shut down (Shrestha, 2003). This crisis marked the decline of the carpet sector, which now only accounts for 6.6% of total exports. The reason for this decline in Europe, and in Germany in particular, is two-fold. Firstly, the rise of Indo-Nepalese carpets as a substitute for Nepalese carpets, and secondly the use of child labor in the carpet sector has led to a reduction in Nepalese sales (KC *et al.*, 2002).

There are several reasons why there has been a recession in the Nepalese carpet sector: firstly, international price competition, especially from India. According to Shresta (2003), price competition with India led retailers in Nepal to buy cheaper wool (of a lower quality) which also led to carpets of a lower quality. Secondly, Nepalese producers only exported to some importing countries (mainly Germany and the U.S.). When the demand in these countries declined, the Nepalese carpet industry was vulnerable since it did not have any other countries to rely on. Consequently, many factories in Nepal shut down (KC *et al.*, 2002). Thirdly, the Nepalese carpet industry is highly globalized, and this implies that transportation costs are high. The carpet factories import wool from New Zealand and color for dying from Switzerland, and then export the finished carpets to Germany and the U.S. When wool comes from New Zealand, it is firstly taken by boat to Calcutta, then by trucks on winding roads all the way to the Kathmandu valley. Finally, the use of child labor is a significant reason for the decline in demand for hand-knotted Nepalese carpets (KC *et al.*, 2002).

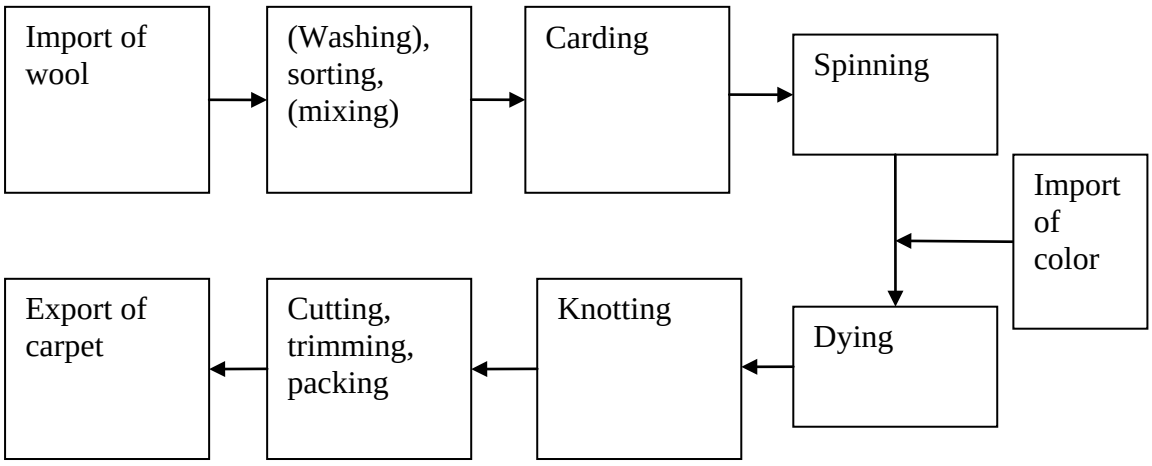
Currently, the carpet industry faces another problem, namely a lack of manpower. Many skilled workers are migrating to India or to the Persian Gulf for a higher income. According to several factory owners I spoke to during my fieldwork, a lack of manpower forced them to cancel many orders, and, as a result, they lose money. Some are outsourcing to other factories, which also is problematic because it is difficult to control whether these factories use child labor or not.

In order to understand why child labor is frequently used in the carpet sector it is useful to start with the production process, as I do below.

7.2. The carpet production process

This section is based upon the work of KC *et al.* (2002), CCIA's webpage (www. nepalcarpet.org) and my own fieldwork. The carpet industry in Nepal is a globalized one: wool is imported from New Zealand or Tibet, dying color from Switzerland, machines from India and then the carpets are exported to countries in Europe and to the United States. The production process is described in Figure 13.

Figure 13: The production process of carpets in Nepal



Wool from New Zealand is directly sorted, whereas Tibetan wool needs to be washed first in order to remove the dirt. Sometimes the two wool types are mixed with each other, creating a mixture with 90% New Zealand wool, and 10% Tibetan wool. After the sorting (and mixing), there is a carding process to make the wool ready for spinning. Traditionally, this was done by hand, but, when the sector grew, it became necessary to use machines to meet increased demand.

The next step is the spinning, where the wool is made into yarns by spinning wheels. Recently spinning machines have also been introduced to make the spinning quicker. Spinning is one of the main areas of the production process that can be outsourced to households. In the village of Kokana, for instance, women get carded wool and 100 rupees in return for spun wool.

The spun wool has to be dyed into different colors. This process has been largely industrialized due to harmful substances in the dye. However, there are still some factories

dying in the traditional way by pot dyeing and natural dyeing. If the final carpet is meant to be exported, the dyeing factory needs to send a sample of colors to the exporter for approval.

After these four steps, the carpet knotting can start. This is an art and requires skilled workers. One important question is why production is found in the Kathmandu Valley and not in Terai, which would have reduced transaction costs. One reason may be culture, in the sense that the factories emerged from the Tibetan refugee camps which are mainly situated in and around the Kathmandu Valley. Another reason may be that there is more knowledge of the art of weaving in the Kathmandu Valley than in Terai.

There are one or more weavers working at each loom, depending upon the size of the carpet. Everyone knots one knot at a time at an amazing speed. Most of the carpets have 60 knots per square inch, requiring 70,000 knots per square meter. However, it is also possible to get 80 knots, 100 knots and up to 300 knots per square inch: the more knots the higher the quality. When the weaving is done, the carpet is cut, trimmed, packed and exported (or sent to the domestic market).

As we can see, the production process is very labor-intensive which encourages the employment of children. In the next section, I explain why children work in the carpet sector and why such work is considered to be of the worst forms of child labor.

7.3. The worst forms of child labor

The definition of the worst forms of child labor includes hazardous work, as defined in Chapter 2 (Section 2.1), as well as all “forms of slavery and practices similar to slavery” (ILO, 1999). This includes debt-bondage or bonded labor, trafficking and prostitution. However, it is up to each country to define in which sectors there is hazardous work. As mentioned in Chapter 5, Nepal has pointed out nine sectors in which child labor is to be considered as of the “worst forms”: one of them the carpet sector.

Child labor in the carpet sector is considered to be one of the worst forms of child labor because it “endangers the physical and mental development of the children involved” (Ballet *et al.*, 2011). There is a distinction between “child labor” and the “worst forms of child labor”. The first category is not as bad as the second, in the sense that it is not seen to endanger the physical and mental development of the child. An 11-year old boy helping out in the family

restaurant 3 hours every day after school is considered to be engaged in child labor, but not as a part of the worst forms of child labor, whereas an 11-year old girl who has to prostitute herself is considered as subject to one of the worst forms of child labor. Child labor in the carpet sector is considered to be one of the worst forms of child labor for several reasons. Firstly, in carpet factories the working environment is unhealthy and dusty. There is no, or little, ventilation, and the rooms are either very cold or very warm. The light is very bad, so that the workers have to strain their eyes in order to do their job. Secondly, the work also involves long working hours: some children start work around 6 a.m. and finish at 8 p.m. Considering the definition of the worst forms of child labor, there is no doubt that child labor in the carpet sector is of that kind.

Why are children working in the worst forms of child labor when there are so many other income opportunities? Edmonds (2006) provides three different arguments: (1) children do not allocate their time themselves, so parents choose the worst forms of child labor because of their indifference to the child's welfare (parental neglect); (2) working in the worst forms gives a higher wage (full compensation); and (3) the worst forms of child labor have an economic role which gives a partial compensation. According to Dessy and Pallage (2005), there is a partial compensation in the sense that the existence of the worst forms of child labor helps to maintain wages in the better forms at a sufficiently high level. As a result, the child laborers in these forms can often work less and spend more time in school. The reason for this is that the existence of the worst forms of child labor creates larger income opportunities (more choice).

Edmonds (2006) finds a strong correlation between parental (typically paternal) disability and children working in the worst forms of child labor in Nepal. In addition, there is a negative correlation between the ownership of agricultural land and households with children working as porters and ragpickers. The explanation for this is that when there is more to do in the household, the family value more the time the child spends in the family business (agriculture) than any time spent as porters or ragpickers.

Why do children work in the carpet sector? In Chapter 3, I discussed some reasons that explain why some children work and other do not. These are also valid in the carpet sector. In addition, children learn fast and generally do not have a labor union to support them (Chakrabarty, 2007). Children are hired because they represent a lower cost than adults, in the

sense that the production value minus costs is higher or equal on the margin (KC *et al.*, 2002). Hiring children is also a way of keeping the tradition of carpet weaving alive. Carpet weaving is an art that has to be learnt, and some argue that it is necessary to obtain this skill at an early age (Levison *et al.*, 1996). When doing their study, Levison *et al.* find that their interviews with employers give some evidence that the necessary skill level may be attained even if the workers start as weavers as adolescents (instead of as children). Finally, the "nimble fingers argument" states that children are able to knot quicker and make high quality carpets with 400 knots per square inch or more (Levison *et al.*, 1996). The nimble fingers argument has, however, been proved to not be true; the carpet sector can do well only with adults since they are as productive as children. Levison *et al.* (1996) find from their sample from India, that adults and children work on the same range of carpet qualities (measured in knots per square inch and pattern). In their sample, the authors have divided the weavers into three categories: adults, probably children and definitively children. By measuring the productivity by the square inches woven per hour, they find that adult men have a higher productivity than "probably children" which is significant on a 5% level.

Many producers in the carpet sector rely on a demand from Western consumers in order to sell their products. As we have seen, a consumer boycott against Nepalese carpets will harm all firms in the industry. As a result, adults may lose their job (and thus income) which in turn may lead to more child labor (but in other sectors), in addition to more poverty. In order to give firms an incentive to reduce the use of child labor and make consumers able to differentiate between child-made and adult-made carpets, the use of labels is a good initiative. In the next sections, I look at existing labels in the carpet sector, and then focus on one of them: GoodWeave.

7.4. Labeling in the carpet industry

A label is defined as "a small piece of paper, fabric, etc. attached to an object and giving information about it" (Soanes and Hawker, 2006). A product label gives information to the consumer when the product is sold by the producer or retailer and usually contains information about the size and composition of the product, the name of the trademark and where it was made. Labels which are related to child labor are called "social labels". Such labels inform the consumer about the social conditions under which the product was made (Hilowitz, 1997).

Product labels have a long history. In the middle to the end of the 19th century, labels were first used in Europe and the U.S. with the aim of reducing the working week and improving the working conditions of women and children (Brown, 2006). “White label”, for example, were established in 1899 with the aim of selling goods produced in decent working conditions without child labor (Basu *et al.*, 2006). A well-known social label today is the “Fair Trade” label, which gives producers of coffee, cacao, tea, bananas and sugar a fair price (usually a higher one than the world market price) for their products (Hilowitz, 1997).

Today, labels related to child labor are used mainly in three sectors:

- The hand-knotted carpet industry in India, Nepal, Pakistan and Afghanistan;
- The leather footwear industry in Brazil; and
- The hand-stitched soccer-ball industry in Pakistan.

Social labeling initiatives are usually initiated by organizations or groups concerned with poor working conditions in developing countries. The labels are often voluntary, meaning that the manufacturer, retailer or wholesaler chose themselves to commit to a social label initiative. Most social labeling initiatives also have a descriptive label on the products which informs consumers about the social standards under which the products were produced. The agency enforcing the labeling usually monitors the producers in order to verify that the social standards have been met. In addition, the agencies usually have a fund to which producers and importers of the product pay a levy from the sale price (Hilowitz, 1997). This fund can then be used to finance social welfare projects, but also to employ more inspectors for example.

In order to achieve the goal of the initiative, organizations rely heavily on the willingness of consumers to choose labeled products over unlabeled products. Their aims can be achieved through three channels: firstly, when consumers know that labeled products are produced under better working conditions, they may buy more of the labeled products, which have a direct effect on working conditions in the developing world. Secondly, a part of the price consumers pay for the product goes to a fund which finances social welfare projects in the developing countries. Finally, when producers (or national governments) observe a demand for products made under good working conditions, they may, on their own initiative, improve working conditions (Hilowitz, 1997).

In 1987, the first label program in the hand-knotted carpet industry in Pakistan were started by "Jackiss", a label that sold carpets exclusively made by adults. In 1990, the "Albring Foundation" started labeling footwear in Brazil. In 1994/95 four organizations started labeling carpets in India and Nepal, including "GoodWeave", and in 1996/97 two further initiatives started to label hand-stitched soccer-balls in Pakistan (Brown, 2006).

The most well-known label-initiative today is "GoodWeave International", former "RugMark International". Other initiatives in the carpet sector are "Kaleen" in India, "STEP" and "Care & Fair". Kaleen is an initiative from the Indian government and is based on exporters committing to a specific code of conduct which also excludes child labor. STEP is a Swiss initiative which promotes the abolition of child labor in the carpet sector and better working conditions. Care & Fair is an initiative from German carpet trade professionals and demands that a certain code of conduct is followed by suppliers. Only Care & Fair do not have monitoring in place and, instead rely on a moral commitment (Baland and Duprez, 2007).

In the following I have chosen to focus on GoodWeave, which is the largest and most rigorous of the four.

7.5. GoodWeave

In the following sections, information is based on my own interviews with Nepal GoodWeave Foundation, information from websites (www.goodweavenepal.org, www.goodweave.net, www.goodweave.org, www.goodweave.org.uk) and the GoodWeave Nepal Bulletin 2011.

7.5.1. GoodWeave International

In 2004, Kailash Satyarthi took the initiative to found GoodWeave International as a cooperative venture between NGOs, businesses, government bodies and multilateral organizations as UNICEF. Satyarthi had tried to rescue children from Indian carpet factories for a long time, and had discovered that rescued children were replaced with new ones. GoodWeave was a way to create market incentives to reduce this exploitation of children.

The first carpets with the GoodWeave label were exported from India in the beginning of 1995, mainly to Germany. During the next four years, GoodWeave expanded to Nepal and Pakistan, and country offices opened in Germany and the United States. In 2001 a country

office in the United Kingdom also opened. In 2011, GoodWeave expanded its work to Afghanistan as well.

GoodWeave's aim is to eliminate the use of child labor in carpet factories in India, Nepal, Afghanistan and Pakistan. In addition, they provide education for the former child laborer. To get the "child labor free" label, factories must commit to four terms: firstly, they must not employ children. Secondly, they must allow unannounced and random inspections by GoodWeave. Thirdly, they must pay a fair wage to adults and, finally, they must notify GoodWeave about all sales of labeled carpets.

Since GoodWeave was founded, the incidence of child labor has been reduced significantly in India, Pakistan and Nepal. The question is whether there is a clear causal link between the work of GoodWeave and this reduction in Nepal. As mentioned above, there has been a decline in the Nepalese carpet sector which normally leads to a decline in child labor in that sector. In addition, the trend for using child labor in the carpet sector is now increasing because labor shortage and poverty, which mean that GoodWeave meets more challenges[26]. To cite a labor shortage as a reason for this is not very plausible since this should increase adult market wages and thus reduce child labor. However, UNICEF confirms that there has been an increase in bonded child labor in the carpet sector, even though this is illegal[27]. There are, thus, many factors that may affect the incidence of child labor in the carpet industry.

Lately, GoodWeave has wanted to expand the scope of its work into helping to develop a more constructive role between entrepreneurs, workers and labor unions. Their basic goal is still the same: to eliminate child labor and give children educational opportunities, but adult working conditions and working environments are also taken into account.

In order to finance monitoring, inspections, certification, promotion and other administrative expenses, exporters pay 0.25% of the total invoice for the GoodWeave label. Similarly, importers pay 1.75% of the invoice and the importing country's Foundations/offices (1%) to the exporting countries for the exclusive use of rehabilitation and other social programs intended to end child labor in the carpet industry.

[26] Information obtained from Deepak Bashyal (Nepal GoodWeave Foundation) by email on September 22, 2011.
[27] http://articles.cnn.com/2011-06-16/world/cfp.nepal.carpet.industry.children_1_child-labor-child-workers-carpet-industry?_s=PM:WORLD

In order to see how this organization works, I am going to look further into Nepal GoodWeave Foundation to find out how they work and what results they have obtained.

7.5.2. The Nepal GoodWeave Foundation

The Nepal GoodWeave Foundation was founded on December 24, 1995. Today, the Nepal GoodWeave Foundation claims to cover 60% of the carpet industry in Nepal, which is a reduction from 75% in 1998 (Nepal GoodWeave Foundation, 2011). However, it appears that only about 5% of the carpets exported from Nepal in 2007 were GoodWeave-labeled carpets (Sharma and Sharma, 2008). In March 2011, there were 398 factories covered by 93 GoodWeave licenses in Nepal, which is the lowest number since 1999. With the implementation of new standards in 2011, GoodWeave Nepal fears the resistance of some factory owners, but hopes to keep up the number of licenses when owners realize that it is for their own benefit.

Nepal GoodWeave Foundation has two different kinds of programs: the first is concerns inspection, monitoring and certification and the second one concerns child welfare and education.

7.5.2.1. Inspections, monitoring and certification

Inspections and monitoring are done on a regular and random basis. A factory is visited between once a week and once every second month, depending on the confidence GoodWeave has in the factory's commitment. The inspector can come any time during the day. The Kathmandu Valley is divided into four zones, and the inspectors change zone every second week in order to avoid corruption or other influences that could reduce their ability to inspect the factory properly. Between the middle of 1996 and December 1 2010, Nepal GoodWeave Foundation conducted 52,617 inspections in GoodWeave licensed factories and their suppliers. Random inspections are carried out if a factory has violated the terms or conditions of their license agreements, such as using child labor.

7.5.2.2. Child welfare and education

The child welfare and education program in the Nepal GoodWeave Foundation is divided into two: one area is concerned with the rehabilitation of child laborers and one with preventive social programs.

Before a factory can get the GoodWeave label, the factory itself and its suppliers are inspected. If one or more child laborers are found, they are removed immediately. The same happens if child labor is found in factories which are already licensed. When a child laborer is removed from a factory, they are sent to the rehabilitation center *Hamro Ghar* (Our Home). There they are assessed, interviewed and counseled. Their family background is analyzed and the child is enrolled in a program. Often the child is reunited with their family, but the family has to commit not to send the child back to a carpet factory before the family and the child are reunited. However, not all children are reunited with their families. Some are orphans and others come from families with problems. When this is the case, the child can stay in the rehabilitation center and go to school for up to two years. After two years, the child is promoted to other programs (education programs or vocational training). In January 2011, 21 children were living in the rehabilitation center. In total, 2,135 child laborers have been removed from carpet factories since Nepal GoodWeave Foundation started its work in 1996.

The other area of the child welfare and education program concerns preventive social programs. The Nepal GoodWeave Foundation provides early childhood development and day-care centers, schooling programs, medical health camps, and awareness programs.

The Nepal GoodWeave Foundation now has three day-care centers in partnership with local NGOs with approximately 200 children enrolled. The day-care centers provide early childhood development activities and prevent children from entering the hazardous environment of the carpet factories. Some of the centers follow the child for two years in order to make sure that they go to school. There are three education programs. The Sponsorship Education Program (SEP) is a preventive scholarship for children, where all costs are covered for the children of carpet factory workers. Approximately 150 children had such scholarships in January 2011. The Non Formal Education Program (NFE) is for children over 14 years and for adults, all of whom are taught how to read and write simple Nepali and do simple calculations. This program has reached more than 1,100 workers. However, due to a lack of money, this program is at a standstill. Thirdly, there is the Schooling Incentive Project Evaluation where 660 students are involved. 220 of them have a scholarship and a stipend in the form of rice and pulses worth 1000 rupees a month if the child’s attendance rate is above 80%. 220 students get only a scholarship and the rest are a control group that get nothing. The purpose here is to find out if scholarships (and stipends) raise school attendance.

The medical health camp provides free medical support to weavers and consists of 2 doctors (one gynecologist and one pediatrician). This program has reached more than 2,500 workers. Finally, awareness programs have been set up consisting of presentations in factories over three days about children's rights, family planning, trafficking, HIV/AIDS and health, nutrition, sanitation and the working environment. 4,184 carpet workers and their families have been included. However, due to a lack of funding this program has been temporarily put aside.

7.5.3. GoodWeave versus other label initiatives

Although all four initiatives mentioned in Section 7.3 have the same aim to eliminate child labor from the carpet industry, they all have different approaches.

As mentioned, Kaleen is, unlike GoodWeave, an initiative from the Indian government. Kaleen was established because the Indian government did not think that GoodWeave took into account the complexity of the carpet industry in India. The agency hired an external and independent agency in order to monitor the looms (GoodWeave monitors by itself). Kaleen has a Child welfare fund which is financed by exporters paying 0.25% of the export value. This fund has financed several NGOs schools (Sharma, 2002).

As opposed to both Kaleen and GoodWeave, STEP is a company certification program, such that the company as a whole gets a label, not each carpet. STEP also uses an independent agency to monitor their looms. STEP, like GoodWeave, has rehabilitation and social welfare programs in order to work against poverty (the main cause of child labor). They have, for example, started weaving training centers for women, literacy courses and schools for children (Sharma, 2002).

Care & Fair is, like STEP, a company certification program. However, this initiative stands out because it does not promise child-labor free products. This means that inspections or monitoring is not necessary (Chakrabarty, 2007). As with the others initiatives, it does support rehabilitation projects intended for weaver families (Sharma, 2002).

I have now shown how GoodWeave operates. In the next section, I look into how theory depicted in Chapter 3 can be used to understand the impact GoodWeave has on child labor.

7.6. How can theory help us understand the consequences of the GoodWeave initiative?

The theory from Chapter 3 tells us that labels will have several effects on child labor. Firstly, a label will reduce the demand for child labor in the sector concerned (here the carpet sector). Secondly, it will increase the demand for adult labor as a substitute for child labor. Finally, it will (in the long run) reduce the supply of child labor due to higher wages given to adult workers.

Thus, from the theory we can expect the following to have happened in the carpet sector in Nepal after the GoodWeave label program started in 1995:

- The incidence of child labor should have reduced in the sector due to 1) a decreased demand for child labor; 2) higher wages given to adults; and 3) more educational opportunities.
- School attendance should have increased for the children of carpet-weavers and children working in the carpet sector.

It is difficult to find precise numbers on the incidence of child labor in the carpet sector, and the studies that have been done concerning the effect of labeling in Nepal are limited. This makes it difficult to draw any firm conclusion about the effectiveness of Nepal GoodWeave Foundation.

In 2001, the ILO calculated that 4,227 children were working in the carpet sector in the Kathmandu Valley and, in 2002, the ILO estimated that there were, in total, approximately 7700 children working in the carpet sector in Nepal (World Education, 2009). Since 1995, GoodWeave claims to have rescued 2,135 children from carpet factories. Furthermore, World Education has given schooling opportunities to more than 3,200 child laborers in the carpet sector between 2001 and 2009.

An ILO report concludes that labeling in the Indian carpet industry is not substantial (Baland and Duprez, 2007). Sharma (2002) also indicates that labeling has not had a significant impact on the incidence of child labor in the carpet sector in India. However, Chakrabarty and Grote (2009) find that in India the incidence of child labor in factories without labels was 24%, but in factories with labels between 7% and 18%. In other words, the incidence of child labor in labeled factories was lower than in non-labeled factories. However, there may be a selection

problem in this case. It might be the case that only factories that earn the least by employing children will take part in the label program. The authors also find that, for households living above subsistence-level, labeling is successful and has a significant influence. For households living below the subsistence-level, however, there is no significant influence from labeling. Chakrabarty and Grote set out a sample of households from India and Nepal with whom they do a logit regression including variables such as the number of children, debts, household size and whether someone in the household works in a labeled carpet factory or not. When looking at households over the subsistence level, they get an estimated effect of -1.15 in India and -0.37 in Nepal, both of which are significant at a 5% level[28]. When looking on households under the subsistence level the effect is not significant in either country. When considering the theory from Chapter 3, we see from Basu and Van's (1998) model that child labor is eliminated when the household's income from other sources is above a threshold level set as subsistence consumption. This implies that the national government should ensure that all households meet their basic needs in order to make labeling work for all households (Chakrabarty and Grote, 2009).

Chakrabarty (2006) studies how label initiatives affect the child labor supply in Nepal. Since labels make education less costly, this should imply that households will allocate more time for their children to go to school than before. He finds that the labeling status of a household (i.e., if anyone in the household works in a labeled household) is an important factor in decreasing child labor in Nepal. In particular, he finds that if the labeling NGO has a monitoring strategy (as does GoodWeave), the NGO will influence the incidence of child labor in the carpet sector. In fact, Chakrabarty's study shows that the risk of finding child labor in a labeled factory is 50% higher for non-monitored labeling initiatives than for monitored initiatives. In addition, the failure of a labeling initiative is 4.47 times higher for those with no monitoring than for those with monitoring, in the sense of influencing the transfer of child laborers from the carpet sector to school.

Sharma and Sharma (2008) find in their study that GoodWeave does not have the capacity to control all subcontractors, so that a carpet with a GoodWeave label is not necessarily made completely without child labor. Chakrabarty (2006) confirms this. In his study he finds that the GoodWeave inspectors visit 40% of the labeled looms once a month, whereas 13% of the

[28] The dependent variable is whether at least one child has been working in the last two months either full time or part time.

labeled looms are reported never to have been monitored. This implies that regular monitoring of all the labeled looms in the Kathmandu Valley is not possible with only four inspectors. In addition, Chakrabarty finds that many children are working at looms during the weekends when the GoodWeave office is closed, implying that the probability of getting caught is zero.

Furthermore Sharma and Sharma (2008) have found that GoodWeave Nepal is today operating on too small a scale compared to the total production and total export of carpets. In 2007, they covered about 10% of the carpet industry[29]. One reason why the label initiative may not work exactly as planned concerns the way the industry is built up. Spinning is often done inside households, and many of the licensees do not have their own production unit. This makes monitoring difficult and, thus, makes the child-labor free label not trustworthy. Furthermore, there is a lack of demand for GoodWeave licensed carpets which gives the factories no incentive to join the program (Basu *et al.*, 2006).

During my visits to carpet factories in Nepal, I visited two unregistered factories, and four GoodWeave-licensed factories. In the GoodWeave-licensed factories, working environments were quite good, and I did not see any working children below the age of 14. In one unregistered factory, however, there were many children working and the manager was proud of this: he explained that the factory had workers ranging from very young to very old. In addition, the factory was much more dusty and dark than the GoodWeave-licensed factory. I only visited a few factories, and this is not enough to use to draw any conclusions. My impression, however, from my visit is that the GoodWeave-labeled factories generally have a better working-environment than the non-labeled factories. However, as long as GoodWeave does not cover a substantial part of the carpet industry in Nepal, its effects will be very limited. In addition, the staff at GoodWeave did not seem to be numerous enough to cover the necessary monitoring of the licensed looms. Since there were only a few inspectors, the factories got notice before they arrived (as people in the villages recognize the inspectors). As a result, the random inspections did not necessary function very well, in the sense that the factories had time to remove and hide children before the inspectors arrived.

[29] These numbers do not fit the number given by GoodWeave. The reason for this could be that Sharma and Sharma include only active factories, whereas GoodWeave include all members. In addition Sharma and Sharma may have taken the subcontractors into account.

Sharma and Sharma (2008) conclude that the Nepal GoodWeave Foundation has been able to reduce the incidence of child labor in its licensees and their suppliers significantly, in addition to giving these child laborers an education. Furthermore, GoodWeave's awareness programs have made the targeted population aware of children's rights and the illegality of child labor. Finally, health and preventive programs have reduced health costs and other expenses for the factory workers.

7.7. Discussion

Theory indicates that labels should reduce the incidence of child labor in their specific sector. However, very few sectors have label initiatives, which makes the overall effect on child labor very limited (Hilowitz, 1997). As mentioned, there are three mainly sectors that use child-labor free labeling: the carpet sector, the soccer-ball stitching industry and the leather footwear industry. As mentioned above, one way in which labels should reduce the incidence of child labor is by an increase in the adult wage. However, this may change the type of work performed by adults, so that children need to take a greater part in the daily activities performed in the household (Chakrabarty, 2007). This implies that child labor in the carpet sector may be reduced, but then the working load in the household increases dramatically, because adults find it more worthwhile to work long hours in the factories due to the higher wage. Furthermore, if only a small fraction of the industry is covered by labels, it is reasonable to assume that many children are just moved from the labeled factory to another factory that is not labeled, especially for children from households with a very low income. This also implies that children are working in the factories with the worst working conditions.

Other criticism against social labeling is that it might change production practices for a whole industry in a country. This can affect a stakeholder's feelings of national and personal independence and alter production costs. In addition, the business community does not always look at the label initiative as voluntary, because the label can be seen as a form of restraint on trade (Hilowitz, 1997).

Labeling initiatives, however, appear to be a good alternative to other forms of intervention because they most often combine reducing the incidence of child labor with increasing school attendance. With more education, children are more likely to have a better future than their parents (a higher education tends to give a higher wage in the future). Whether the children are better off than before when they are removed from the carpet factory is difficult to assess.

A child might gain utility from working more than from going to school, maybe because of the extra income the family gets and this may give the child, for instance, more food to eat and warmer clothing.

Chapter 8: Conclusion

The aim of this thesis was to study the interventions that can be undertaken in order to reduce child labor. The theoretical literature on child labor is extensive and focuses both on why child labor occurs and how to eliminate/reduce the phenomenon. In the thesis, I have on how to eliminate child labor. There are many possible interventions, including increased educational opportunities, legislative and international measures. The focus was to model some of the possible interventions and see how they would affect the incidence of child labor and their possible side effects (both positive and negative). The difficulty here is that even though an intervention might appear to be a very good one in theory, it is not necessarily so in practice, mainly due to monitoring and enforcement, and that the interventions may have non-desirable side-effects affecting children's welfare. In particular, I studied one intervention in detail, the label initiative "GoodWeave".

My main findings are as follows:

i) More or less all interventions might somehow reduce the incidence of child labor. The problem is the undesired side effects interventions might have on children's welfare (reduced wages for the remaining child laborers and reduced total income to the household, for instance). It, thus, seems that the coordination of different interventions is necessary.

ii) From the empirical literature on child labor, it appears that giving an incentive to households to send children to school, instead of making them work, is crucial, in addition to increasing the income of poor households.

iii) GoodWeave is a good program, but it has its limitations concerning both its size and the ability to undertake monitoring.

In addition, opening up education and banning child labor appear to be two necessary interventions, even though they are not sufficient. Empirical research and the interventions in Nepal, mentioned in Chapter 4 and 6, confirm many theoretical hypotheses. However, it has not been possible for me to distinguish the individual effects of an intervention, meaning that child labor probably is reduced by several interventions, but it is impossible to say which one was the most important. This makes it very difficult to generalize the findings.

Furthermore, Nepal GoodWeave Foundation is a good program, both for trying to reduce child labor and, at the same time, for providing education and trying to increase the welfare of the children. However, the program is limited: it only concerns the carpet sector (in fact, it only, includes a small part of the carpet sector) and monitoring is done by the organization itself, but only by a few inspectors. GoodWeave is trusted by consumers, however, in order to achieve a more credible label, the organization could employ more inspectors, and/or let some other agencies inspect the factories as well, and/or inspect all sub-contractors. All these measures might be difficult to implement due to Nepal GoodWeave Foundation's lack of funding.

A shortcoming of this study is that an econometric analysis was not conducted which could have shed light on the isolated effects of the different interventions. This study has, however, mentioned other empirical studies conducted by researchers such as Basu and Edmonds.

This thesis opens up for empirical studies that test the theoretical hypothesis. It would also be interesting to do this for several countries, since every country is unique. This would open up the possibility for generalization, and help to reduce further the incidence of child labor.

Appendix A

Figure A 1: A hypothetical world market for carpets

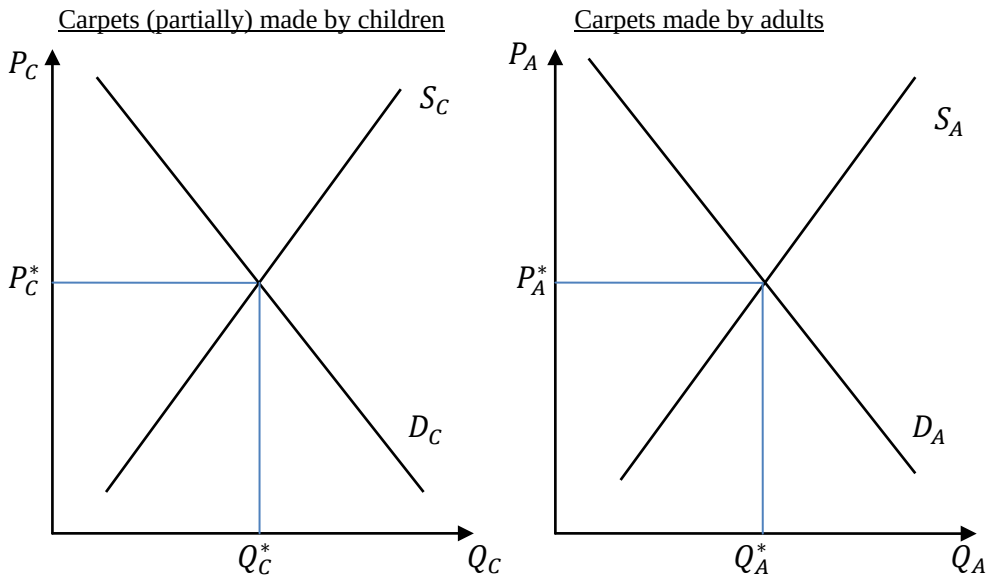


Figure A 2: A hypothetical labor market for carpets in Nepal

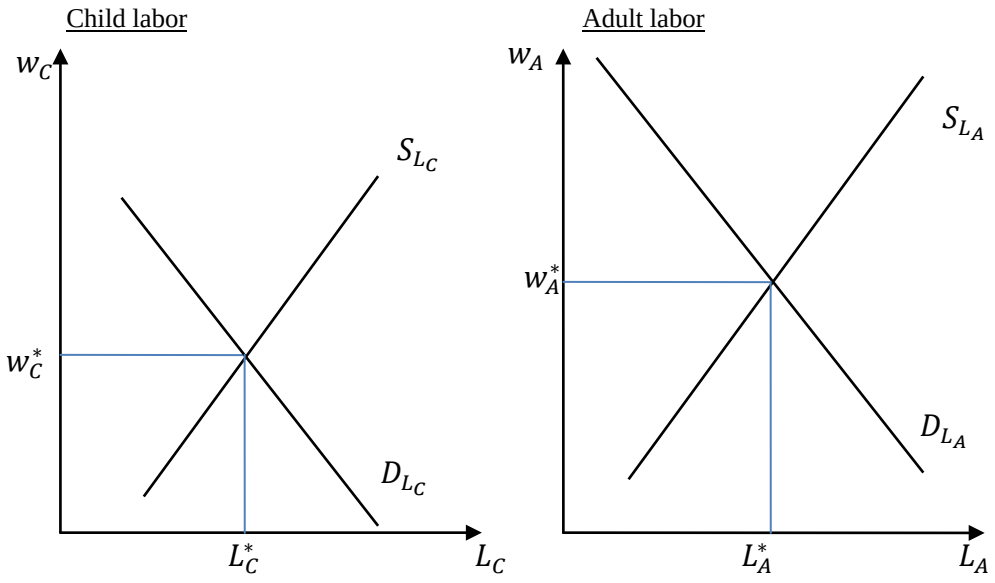


Figure A 3: Scenario 1 - world market for carpets

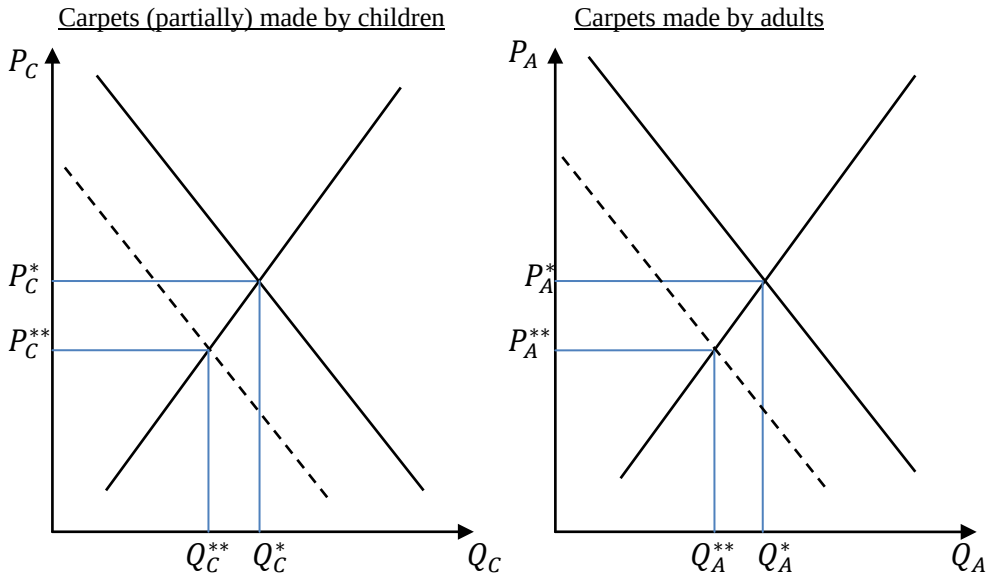


Figure A 4: Scenario 1 - labor market for carpets, alternative 1

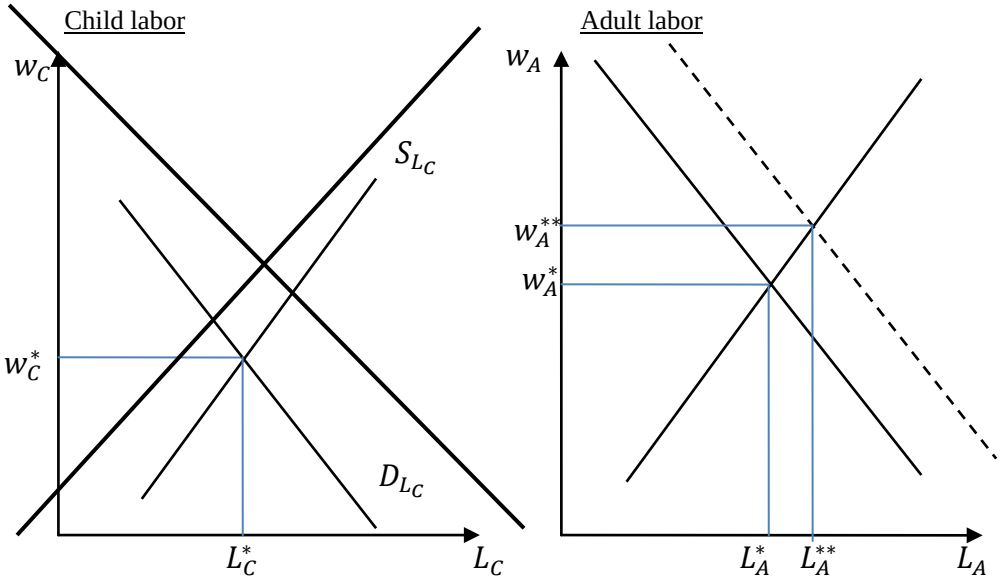


Figure A 5: Scenario 1 - labor market for carpets, alternative 2

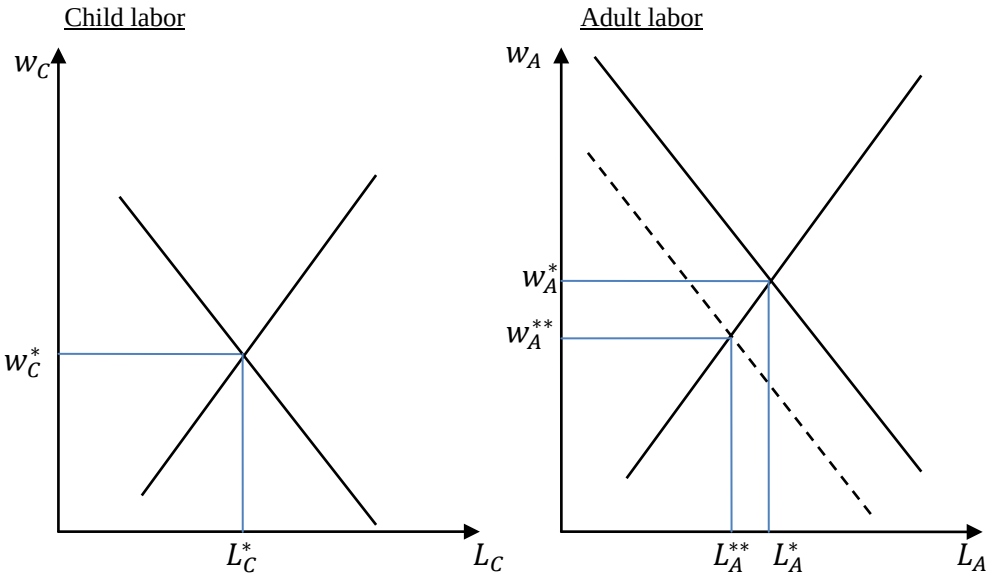


Figure A 6: Scenario 2 - world market for carpets

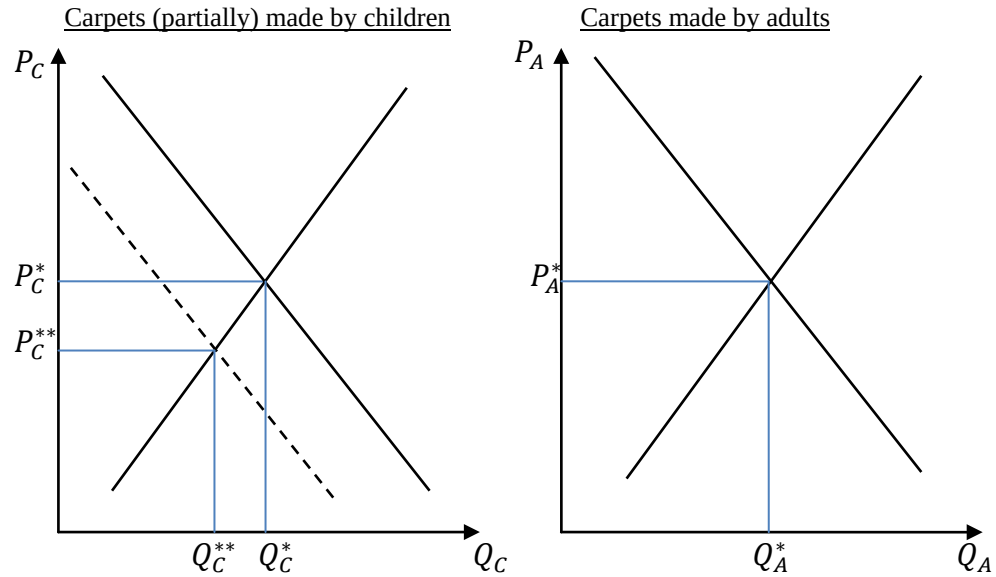


Figure A 7: Scenario 2 - labor market

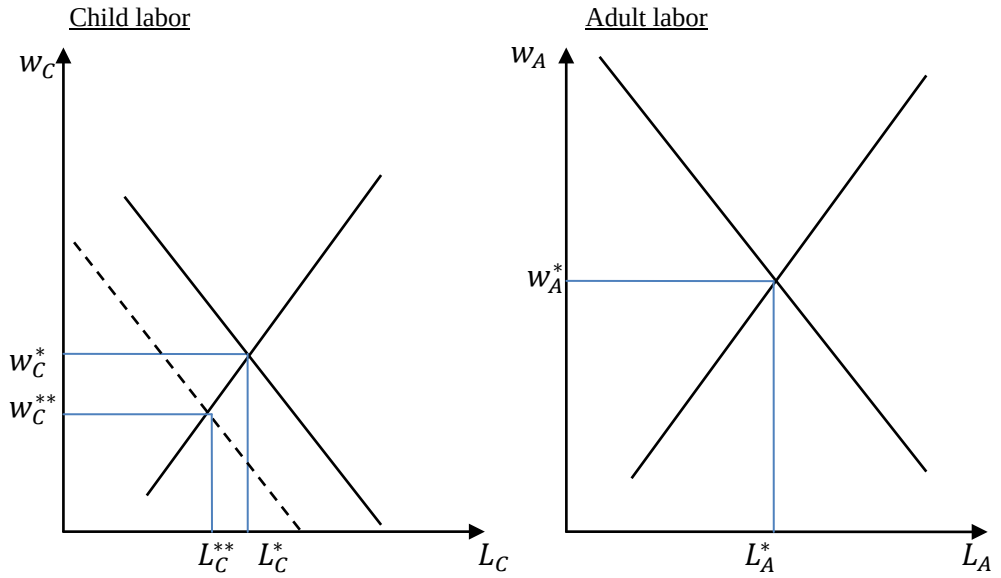


Figure A 8: Scenario 3 - world market

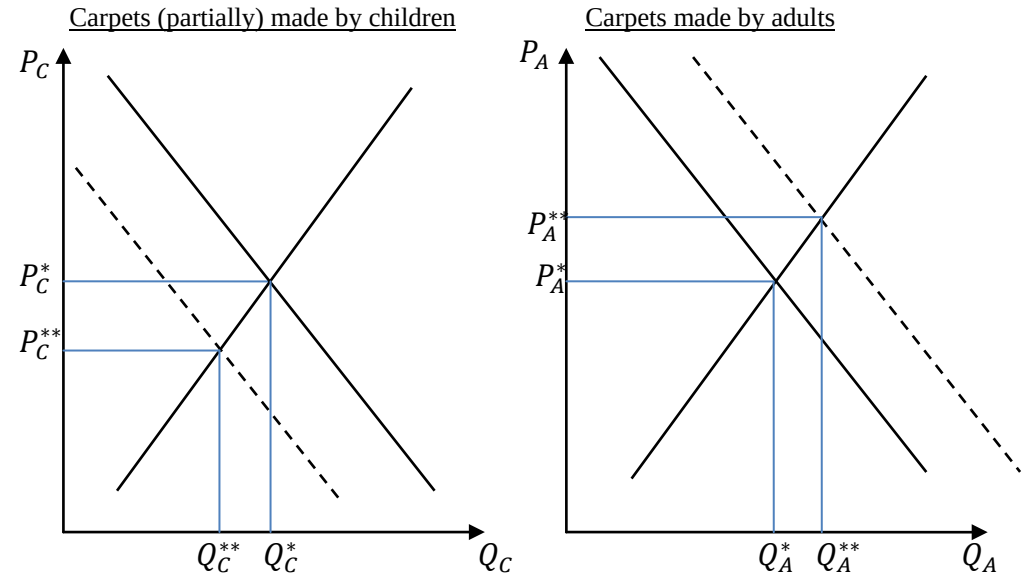
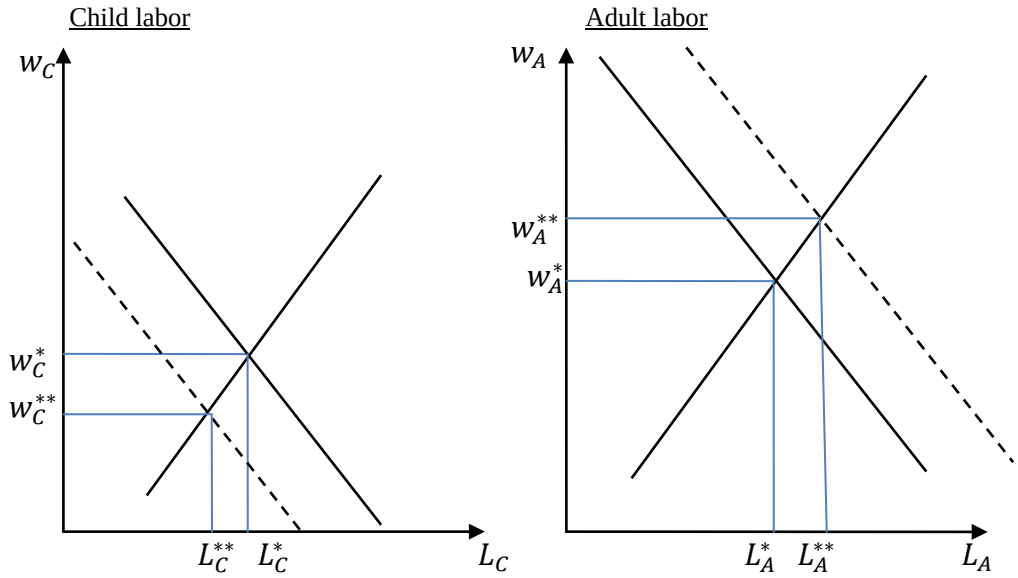


Figure A 9: Scenario 3 - labor market



Appendix B

Table A 1: Carpet exports from Nepal, 1993 to 2010

	Value of carpet export (in million Rupees)	Percentage change in value of carpet export from previous year	Value of total export (in million Rupees)	Value of carpet export as a share of value of total export
1993/94	9534,1	-	19077,5	49.98%
1994/95	7715,7	-19.07%	17681,3	43.64%
1995/96	8163,9	+5,80%	19758,4	41.32%
1996/97	8878,5	+8.75%	22861,9	38.84%
1997/98	8485,3	-4.43%	27402,2	30.97%
1998/99	9802,0	+15.52%	35826,6	27.36%
1999/00	9842,1	+0.41%	49822,7	19.75%
2000/01	8592,3	-12.70%	55654,1	15.44%
2001/02	6210,0	-27.73%	46944,8	13.23%
2002/03	5320,0	-14.33%	49930,6	10.65%
2003/04	5677,5	+6.72%	53910,7	10.53%
2004/05	5868,7	+3.37%	58705,7	9.99%
2005/06	5838,7	-0.51%	60234,1	9.69%
2006/07	5600,2	-4.08%	59383,1	9.43%
2007/08	5048,2	-9.86%	59266,5	8.52%
2008/09	5735,5	+13.61%	67697,5	8.47%
2009/10	4068,2	-29.07%	61126,8	6.66%

Figure A 10: Carpet exports and total exports from Nepal, 1993 to 2009

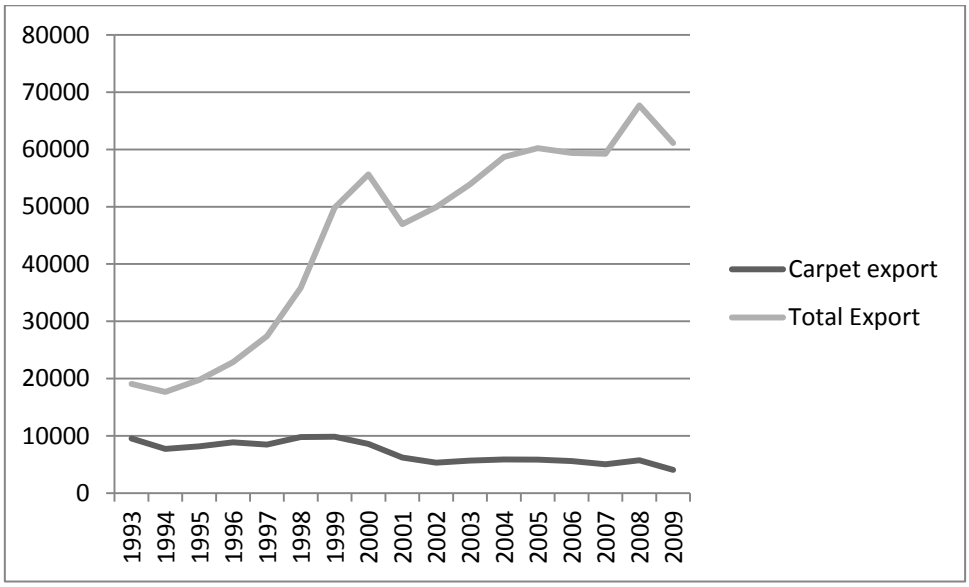
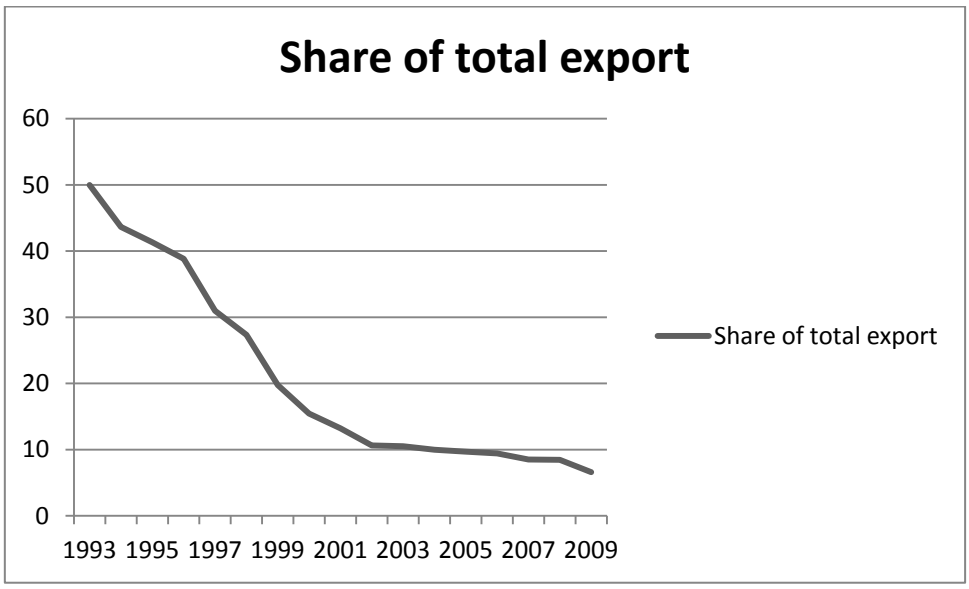


Figure A 11: Carpet exports as a share of Nepal's total exports from 1993 to 2009



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