



Centre Interuniversitaire sur le Risque,  
les Politiques Économiques et l'Emploi

Cahier de recherche/Working Paper **08-16**

## **A Theory of Child Protection against Kidnapping**

Caroline Orset

Août/August 2008

---

Orset: Université Laval  
[caroline.orset@ecn.ulaval.ca](mailto:caroline.orset@ecn.ulaval.ca)

We would like to thank Sylvain Dessy, as the audience of the Spring 2006 Midwest Economic Theory Conference, of the IVth Seminar of Doctoral Students in Economic and Social Integration and of the ICE-TEA 2006 for helpful comments and discussions.

**Abstract:**

This paper studies the microeconomics of child vulnerability to kidnapping in an environment where child protection is produced through a private effort, a public investment and a foreign aid. We first show that in absence of public investment and foreign aid, private investment in child protection may exhibit a vicious cycle of rising child's vulnerability, which justify public production of child safety resources on efficiency grounds. However, the introduction of a redistributive taxation to finance public investment may lead to a reduction of the global child protection, and then to an increase of the number of kidnapped children. In addition, richer families prefer private production of child safety resources to public production, while poorer families are in favour of public production. In this context, a foreign help is useful to deal with this disagreement. Nevertheless, foreign aid may raise an aid dependency. We then conclude that State and international organisms have a duty to assist households for building a protective environment. However, State's policy and foreign aid have to be chosen with care in order to avoid crowding out the parents' effort, and create an aid dependency.

**Keywords:** Child trafficking, child kidnapping, public policy, foreign aid, vulnerability

**JEL Classification:** D11, H31, I31, J13

# 1 Introduction

Child kidnapping is a deep-rooted crime worldwide. Not only does forceful removal of a child from his family traumatizes the victim, it also unravels the lives of his parents, family, and community. Almost all countries have criminal laws addressing the issue of child protection, and in most countries, the laws also place an emphasis on prevention as well as prosecution. In addition, foreign aid through international organizations increases the government's knowledge about alternative ways for stopping child kidnapping. At the same time, parents are given ample discretion as to how they satisfy their responsibilities of providing nurturing and safety for their children. Yet how kidnappers are able to break child protective barriers continue to puzzle scholars in social sciences, particularly in countries plagued by armed conflicts or poverty. Actually, how does the production of child safety resource by parents, State and international organisms affect child's protection to kidnapping?

To address this question, we propose microeconomic theory of child vulnerability to kidnapping in an environment where child protection is produced through a private effort, a public investment and a foreign aid. We focus on "Non family child abduction".<sup>1</sup> We first show that in absence of public investment and foreign aid, private investment in child protection may lead to a vicious cycle of rising child's vulnerability, which justify public production of child safety resources on efficiency grounds. However, the introduction of redistributive taxation to finance public investment implies a substitution between private and public investment in child protection. This substitution may dampen the effects of public intervention on the incidence of child kidnapping. In addition, redistributive taxation may create a conflict between rich and poor families. Indeed, richer families prefer private production of child safety resources to public production, while poorer families are in favour of public production. When the country is initially very poor, such conflict may provide a role for foreign aid to help curb child kidnapping. Yet, foreign aid may be viewed as free resources by households, and may therefore substitute for public investment in child protection. This raises an aid dependence issue that need to be addressed. We then conclude that State and international organisms have a duty to assist households for building a protective environment for children. However, State's policy and foreign aid have to be chosen with care in order to avoid crowding out the parents effort, and create an aid dependency.

---

<sup>1</sup>According to United States Department of Justice et al. (2002), a non family abduction is: *'An episode in which a non family perpetrator takes a child by the use of physical force or threat of bodily harm or detains the child for a substantial period of time (at least 1 hour) in an isolated place by the use of physical force or threat of bodily harm without lawful authority or parental permission'*.

As stated United States Department of Justice et al. (2002), this kind of abduction represents 51% of all child kidnapping.

A large literature (Heller, 1975, Clement et al, 2004, McGillivray, 2004, Ezemenari et al, 2008) analyses effect on foreign aid on fiscal policy, in particular on the children's education field. All of them suggest that foreign aid has a negative impact on tax collection, which may lead to aid dependence in recipient countries. Our contribution to this literature is to analyse the effects of foreign aid on the incidence of child kidnapping.

Our research is also related to the literature on child exploitation and trafficking (Dessy et al. 2005, and Rogers and Swinnerton 2008). Dessy et al (2005) study trafficking in children from a source country to the rest of the world, and emphasize child trafficking or kidnapping as a transboundary phenomenon. They consider an economy populated by identical households and entrepreneurs. Children's protection from potential kidnappers involves both parental and public investments. They find that the actions of the richest countries may increase the price for trafficked children. Then pressurizing poor countries to adopt immediately similar protection mechanisms than in the richest countries may be very costly for the poorest countries. They then conclude by claiming that international cooperation should be at the core of any successful intervention against child kidnapping. However, they do not study the effects of international cooperation, for example in the form of foreign assistance to poor country. Neither do Rogers and Swinnerton (2008). Our contribution to this literature is to therefore to analyse the impact of international cooperation by emphasizing the microstructure of the child kidnapping problem.

The remainder of paper is organized as follows. Section 2 provides empirical evidence of the scope of child kidnapping worldwide. Section 3 introduces the model. Sections 4, 5 and 6 studies the decisions made by the household and the kidnapper without public intervention or foreign aid, with public intervention but without foreign aid, and with public intervention and foreign aid, respectively. Finally, section 7 offers concluding remarks on policies to adopt against child kidnapping. All proofs are in appendix.

## 2 Child Kidnapping As a Mass Phenomenon

Human trafficking<sup>2</sup> is the third biggest source of profit for criminal international organizations, just after drug racket and trafficking in firearms (Ren, 2004). Children represent a large part of this traffic. Roughly 1 to 1.2 million children are trafficked each year (Beyrer, 2004). Kidnapping is one of the main methods for child trafficking. A kidnapper may remove a child, often a baby, with the intent to give him for adoption. Children

---

<sup>2</sup>According to US State Department (2004), the trafficking in persons is *'the recruitment, transportation, transfers, harbouring or receipt of persons, by means of threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. Exploitation shall include, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs'*.

may also be exploited for sex, forced labour, or organ trade. In rare cases, children are abducted for extortion, to elicit a ransom from the child's parents. Moreover, a kidnapper may abuse sexually of a child, torture him, or murder him.<sup>3</sup>

Child kidnapping is all the more alarming as all countries, rich or poor, are affected. In Quebec (Canada), a child is kidnapped every 52 days (Lowe, 1998). From 2000 to 2004, 11% of the missing children were kidnapped in the United States and 13% in Europe. Usually, kidnappers choose to take the child in the street, a parked vehicle, a park or wooded area, their own home, at School or in a day-care, store, restaurant, or a mall. Abductors trick their victims by offering bribes, lying about an emergency, asking for help, or posing as a person of authority. Recently, internet has become a powerful tool of child abduction, particularly in rich countries. Predators can communicate with potential victims, via internet and set up a meeting in view to kidnap them. In developing countries (e.g., African or Latin American countries) where internet use is still in its infancy, war chiefs use more violent methods to abduct children victims to be groomed as child soldiers, or sex slaves. In Uganda notably, 20% of child soldiers working for the Lord's Resistance Army (LRA) are less than 18 years old ([27], [28], [29], and [31]). In the region of Kandahar (Afghanistan), a child is kidnapped every week on average (IRIN, 2005). During the 16 years of civil war in Mozambique, at least 92% of the children were separated from their family ([29]).

Nevertheless, child kidnapping touches countries in different proportions and for diverse reasons. The General Secretary of the United Nations, Kofi Annan, presented on February 16, 2005 at the Security Council of the United Nations an action plan for a systematic monitoring and description of the maltreatments inflicted to children ([26]). While this report notes an improvement in several countries (Angola, Ethiopia, Eritrea, Liberia, and Sierra Leone), it presents a list of countries where the situation is alarming (Burundi, Ivory Coast, Democratic Republic of Congo, Somalia, Sudan, and Uganda). The United Nations Children's Fund (UNICEF, 2002) classifies the countries in three categories: destination countries, transit countries and source countries. Destination countries (for instance, European countries and United States) tend to show some indifference, since the problem originates in another country and they do not concern their national population. Transit countries (like Canada) are more likely to perceive kidnapping as a non-national issue and this perception is a major obstacle to the control of national borders and coastlines. Source countries (for instance, East European countries, Latin American countries or African countries) have been more aware of child kidnapping than others. The children of these countries are the main targets of kidnappers. For these countries, child trafficking is then a national fight.

---

<sup>3</sup>We do not treat about the latter possibilities because there is no monetary gain to kidnap a child. The kidnapping is a consequence of the instability, or mental problems of the kidnapper.

In all countries reporting human kidnapping, age is a determinant of vulnerability. Child soldiers, for example, are aged between 12 and 14 years old ([32]). In addition, preschoolers' abduction is relatively low, while kidnapping increases through elementary school and peaks at age 15 ([33]). Actually, kidnapers take advantage of because of the very limited capacity of children to recognize risk and look after them. Children are then dependent of adults to be protected.<sup>4</sup> However, other reasons linked to countries' characteristics may favour the child's vulnerability. Terre des hommes (2005), the US State of Department (2004) and the ILO (2002) quote poverty, proliferation of organized crimes, armed conflicts, social exclusion, and political apathy. The main target of kidnapers is therefore a child in a vulnerable situation.

So, how to decrease the child's vulnerability, and then the kidnapped children's number? Child kidnapping obeys the laws of supply and demand. Hence, the efforts to fight this issue have to operate in both sides. Increasing the level of protection of the child seems to be an interesting alternative. According to the Inter parliamentary Union and UNICEF (2004), UNICEF (2003) and Social alert international (2000) the most important actors in any child's life are often his parents. They are usually considered as altruistic in the sense that they take care about their children, and they would suffer from their disappearing. Hence, they are willing to make efforts to protect their children. For instance, hiring a nanny, driving their children at school. However, when parents are unable to protect them State has a duty to assist them for building a protective environment. State's actions reduce the time where children are alone. Schools build closer than village, a school bus to accompany children to and from school may decrease the child's vulnerability. Moreover, a presence of police officers could strengthen the protection.

However, States may not be well informed on protection's possibilities. International organizations (ILO, World Trade Organization (WTO) and UNICEF) may learn them how to set up internet-surveillance, a good cooperation and information sharing between law enforcement agencies, tools for spreading information (such as the AMBER Alert system), or investigations managed (Federal Bureau of Investigation). All of this allow them to a better control of kidnapers. In addition, laws that a country enacts and interventions that it plans in order to control the traffic within national borders have to be also introduced to disincentive kidnapers.<sup>5</sup>

---

<sup>4</sup>See Dottridge (2004) for further details.

<sup>5</sup>See Basu (1999). In addition, deterrents have to be introduced. Legislations and other actions such that the Convention on the Rights of Child *Article 35: State Parties shall take all appropriate national, bilateral, and multilateral measures to prevent the abduction of the sale of or traffic in children for any purpose or in any form.* ([25]), *the Convention of the Hayes and the Convention of Luxembourg have to be applied in order to impose harsh punishments, such as a lengthy prison terms, and a significant compensation to victims' family.*

### 3 The model

There is a continuum of heterogeneous households composed of one parent and one child, and total population is normalized to 1. Households differ in the sense that their wage is different across household. We denote by  $F$  the wage's distribution function.

Each household supplies one unit of labour, receives a wage  $w$  and consumes a numeraire good  $C$ . He protects his child against kidnapping with a level of protection  $b$ , which is composed of a private  $b^P$ , and a public  $b^G$  level of protection. Hence,

$$b = b^P + b^G.$$

We assume that the private level of protection depends a households' private investment in protection  $x$ . We consider that  $x$  is the household's expenditures for protecting his child. For instance, for hiring a confidence person, for driving the child to school, or for going away from a unsafely place. We then write:

$$b^P = B^P(x).$$

We assume that  $B^P$  is increasing and concave with  $x$ . Hence, a higher private investment allows parents to create a more protecting environment for their children.

We suppose that the public level of protection is conditional on a public investment in protection  $g$  and a foreign aid  $a$ . Actually,  $g$  means all States' costs for building a protective environment for child. As examples, States spend money to hire police officers or officials to watch out children, build school closer than village, and accompany children to and from school with a school bus. In addition,  $a$  is considered as funds to help public intervention. By instance, learning to policemen better ways to investigate against child kidnapping, giving them new surveillance equipments. We write:

$$b^G = B^G(g, a).$$

We assume that  $B^G$  is increasing and concave with both  $g$  and  $a$ . Through international findings, policemen make more efficient by acquiring more knowledge and accessing to new equipments. Foreign aids improve then the public level of protection. We suppose that the cross derivative is positive, which means that an increase in  $a$  makes marginal public investment more productive. We assume that there is no public level of protection without public investment and foreign aids:  $B^G(0, 0) = 0$ .

We define the household's utility function as follows

$$U(C) - p\Delta$$

in which  $\Delta$  is the cost of the loss of a child and  $p$  is the probability that the child be kidnapped. Actually,  $\Delta$  may be considered as a disutility of the household. For instance,

in a child labour context,  $\Delta$  may be the waste of money that a child could earn for his family, or in a more altruistic context, the investigation's costs in order to look for the child. We assume that  $U$  is increasing and concave, so that the household is risk-averse. Moreover,  $U$  verifies the Inada conditions:

$$\lim_{C \rightarrow 0} U'(C) = +\infty \text{ and } \lim_{C \rightarrow +\infty} U'(C) = 0.$$

We define the household's budget constraint as follows:

$$C + x = w(1 - \tau)$$

in which  $\tau$  is a proportional income tax to finance the public investment  $g$ . There is majority voting on the tax rate  $\tau$ . We define the average wage of households by:

$$\bar{w} = \int_w w dF(w).$$

The budget balance implies both that  $g = \tau\bar{w}$  and  $\tau < 1$ .

During any given period, a child may be vulnerable to kidnapping. For instance, a child may be vulnerable when he is not supervised by an adult (a police officer, a nanny or a parent). We define by  $T(b)$  the period<sup>6</sup> during which a child is vulnerable. We call  $T(b)$  the vulnerability period, and we assume that  $T$  is decreasing and convex.

We note that each household is associated to a wage  $w$ . Then, his private investment in protection  $x$  depends on  $w$ . So, we define the average number of vulnerable children at any time, and then the total number of vulnerable children at any time by:<sup>7</sup>

$$n_v = \int_w T(B^P(x(w)) + B^G(g, a)) dF(w).$$

Given  $n_v$ , a representative kidnapper exerts an effort  $e$  to kidnap  $N(e, n_v)$  children. We assume that  $N$  is increasing and concave with both  $e$  and  $n_v$  and that the cross derivative is positive, which means that an increase in  $n_v$  makes marginal effort more productive. We also assume that

$$N(e, 0) = 0 \text{ and } N(e, n_v) \leq n_v$$

which means that the kidnapper only kidnaps a child in the pool of vulnerable children. We assume that the price of a kidnapped child is given and is equal to  $q$ . This price is an amount of money that the families or the entrepreneurs are willing to pay to the kidnapper for getting the child, for instance for adoption or labour. We assume that it is

<sup>6</sup> $T(b)$  is in fact a proportion, i.e. if a child is vulnerable 5 hours per days, then  $T(b) = \frac{5}{24}$ .

<sup>7</sup>Since we consider a measure one of heterogeneous households, the average value is equivalent to the total value.

always profitable for the kidnapper to kidnap a child that is his benefit is at least equal to his cost.<sup>8</sup>

$$qN(e, n_v) - e.$$

We now define the probability that the child be kidnapped as follows:

$$p = \frac{T(b)N(e, n_v)}{n_v}.$$

This is the vulnerability period multiplied by the proportion of kidnapped children. Hence, since  $b = B^P(x) + B^G(g, a)$  and  $g = \tau\bar{w}$ ,  $p$  depends on  $x$ ,  $\bar{w}$ ,  $\tau$ ,  $a$ ,  $e$  and  $n_v$ . We then write  $p = p(x, \bar{w}, \tau, a, e, n_v)$ . Finally, it is easily verified that:

**Lemma 1**  *$p(x, \bar{w}, \tau, a, e, n_v)$  is increasing with the kidnapper's effort  $e$ , it is decreasing with the private investment in protection  $x$ , the average wage  $\bar{w}$ , the tax rate  $\tau$ , the foreign aid  $a$  and the number of vulnerable children  $n_v$ .*

The timing of the game is as follows. Firstly, the foreign aid  $a$  is given by international organisms to States. The majority voting then chooses the income tax  $\tau$  in order to finance the government's investment in protection  $g$ . Secondly, the households choose their private investment in protection  $x$ , and finally kidnapper defines his kidnapping effort  $e$ .

## 4 Decision-making without public intervention or foreign aid

We first study the households and kidnapper's behaviour in a context in which neither States nor international organisms intervene. So, there is no public investment in protection, no tax to finance it and no foreign aid, that is  $g = 0$ ,  $\tau = 0$  and  $a = 0$ . Only households protect their children, then  $b = B^P(x)$ .

We solve this model by backward induction. In subsection 2.1, we examine the kidnapper's effort. Then, in subsection 2.2, we present the households' investment in protection.

### 4.1 The kidnapper's effort

The kidnapper chooses his effort to kidnap a child in order to maximize his profit. We define by  $e^R$  the kidnapper's best response for his effort to kidnap a child to the households' decisions. The kidnapper's problem is as follows:

$$\max_e qN(e, n_v) - e. \tag{1}$$

---

<sup>8</sup>In a context in which it is not profitable to kidnap a child, the kidnapper never removes a child. Hence, the presence of a child's protection is not useful.

**Proposition 1**  $e^R$  is characterized by:

$$q \frac{\partial N(e^R, n_v)}{\partial e} - 1 = 0. \quad (2)$$

We define by  $e^*$  the kidnapper's optimal effort. We observe that  $e^R$  is not a function of each household's decision  $x$ . This raises that  $e^R$  is the kidnapper's optimal effort, so  $e^R = e^*$ . In addition,  $e^R$  depends on  $q$  and  $n_v$ , so  $e^R = e^R(q, n_v)$  and then  $e^* = e^*(q, n_v)$ . Then, we summarize in the next lemma the impact on  $q$  and  $n_v$  on the kidnapper's optimal effort.

**Lemma 2**  $e^*(q, n_v)$  is increasing with the number of vulnerable children  $n_v$  and the price of a kidnapped child  $q$ .

On the kidnapper's point of view, child is a reward. For each kidnapped child a higher price leads then to a higher gain. This lure of money incentives kidnapper to make more effort in order to increase the number of kidnapped children. Moreover, when the number of vulnerable children increases, the number of potential victims increases and incentive the kidnapper to make a higher effort in order to increase his number of kidnapped children.

This result may explain the intense kidnappers' activities in African and South American countries. Actually, in these countries the socio-political context favours child's vulnerability (Terre des hommes, 2005, the US State of Department, 2004 and ILO, 2002), and then targets are many more which motivate the kidnapper's effort.

## 4.2 Household's private investment in protection

Each household chooses his investment  $x$  to protect his child in anticipating the kidnapper's effort  $e^*(q, n_v)$ , and knowing that there is neither State nor foreign aid. Here and hereafter, we define the proportion of kidnapped children as the number of kidnapped children over the total number of vulnerable children:

$$M(n_v, q) = \frac{N(e^*(q, n_v), n_v)}{n_v}.$$

Then, we define by  $x^*$  the household's optimal private investment in protection, that is household's best response to the reaction of the kidnapper in equilibrium. So, given  $w$ ,  $e^*(q, n_v)$  and  $n_v$ , the household chooses  $x^*$  in order to maximize his welfare. He then solves the following problem:

$$\begin{cases} \max_{b,x,C} U(C) - T(b)M(n_v, q)\Delta \\ C + x = w; \\ b = B^P(x). \end{cases} \quad (3)$$

Then, we get the following proposition:

**Proposition 2**  $x^*$  is characterized by:

$$-U'(w - x^*) - T'(B^P(x^*)) B^{P'}(x^*) M(n_v, q) \Delta = 0 \quad (4)$$

Consequently, the household's optimal private investment in protection depends on  $w$  and  $n_v$ . We then write that  $x^* = x^*(w, n_v)$ . We note that for given  $w$ ,  $q$  and  $n_v$ ,  $(x^*(w, n_v), e^*(q, n_v))$  is a stackelberg equilibrium. The following lemma sums up the impact of  $w$  and  $n_v$  on the household's optimal private investment in protection.

**Lemma 3**  $x^*(w, n_v)$  is increasing with the wage  $w$ . Furthermore, if the positive effect of  $n_v$  on  $e^*$  is high enough to compensate the negative effect, then  $x^*$  is increasing with  $n_v$ . Otherwise  $x^*$  is decreasing with  $n_v$ .

Lemma 3 implies that children from richer families are more protected, and then less vulnerable than the others. So, children from poorer families are the main targets of kidnapper. The State intervention could be required to compensate the poorer families. A redistribution system could be a nice alternative solution in order to reduce the gap between the households' wages, and then between child's vulnerability.

Moreover, private investment in protection may exhibit a vicious cycle of increase of child's vulnerability. Actually, when the number of vulnerable children increases, the kidnapper's intense aggressiveness may encourage the household's investment in protection. On the other hand, this increase may have a pervert effect on parents' protection. Indeed, parents may think that their child have less probability to be kidnap. They then decide to decrease their protection. State has then a duty to intervene in order to involve a protection to these children.

As an example, we may consider a war context.<sup>9</sup> During war, local armies kidnap children for being soldiers in villages (see wars in Uganda and Mozambique). Richer families may spend money to travel and go far away from villages to protect their children while poorer families cannot. The State's intervention could be useful in order to involve free transportation and new homes to poorer families. Moreover, at the beginning of a war, child's vulnerability increases and kidnapper's activity is intensified. The household may then an arbitrage between the decrease of the probability for his child to be kidnapped and the increase of kidnapper's activity. If the activity's effect dominates, households prefer leaving away. On the other hand, if this effect is dominated, households stay in the village. In this latter case, children are in danger. A state intervention, in particular hiring new policemen, would allow to protect them.

---

<sup>9</sup>We could also take as examples proliferation of organized crimes or social exclusion.

## 5 Decision-making with public intervention but without foreign aid

Now, the level of protection is in both private and public. The majority voting chooses the income tax rate  $\tau$  in order to finance the State's investment in protection  $g$ . In addition, the level of public protection also depends on the State's knowledge on the child's kidnapping issue. Indeed, a better knowledge allows higher strength to struggle kidnapper. In this part, foreign aid is absent ( $a = 0$ ), and does not sustain State's knowledge.

We solve this model by backward induction. Kidnapper first observes the global level of protection through the total number of vulnerable children. He takes this number as given. Then, his problem is identical with the one of previous section (1). Yet, the optimal kidnapper's effort is  $e^*(q, n_v)$ . In subsection 3.1, we examine the household's private investment in protection. In subsection 3.2, we analyse the household's political decision.

### 5.1 Household's private investment in protection

Each household decides a private level of protection for his child. This level depends on his private investment in protection. We define by  $\bar{x}^*$  the household's optimal private investment in protection. Thus, taking  $n_v$ ,  $e^*(q, n_v)$  and  $\tau$  as given, each household solves the following problem:

$$\begin{cases} \max_{b,x,C} U(C) - T(b)M(n_v, q)\Delta \\ C + x = w(1 - \tau); \\ b = B^P(x) + B^G(g, 0); \\ g = \tau\bar{w}. \end{cases}$$

We note  $\bar{b} = B^P(\bar{x}^*) + B^G(\tau\bar{w}, 0)$  the optimal level of protection with  $\tau$  given. Then, we get the following proposition:

**Proposition 3**  $\bar{x}^*$  is characterized by:

$$-U'(w(1 - \tau) - \bar{x}^*) - T'(\bar{b})B^{P'}(\bar{x}^*)M(n_v, q)\Delta = 0 \quad (5)$$

Then, the household's optimal private investment in protection depends on  $w$ ,  $n_v$  and  $\tau$ . So, we write  $\bar{x}^* = \bar{x}^*(w, n_v, \tau)$ , and then  $\bar{b} = \bar{b}(w, n_v, \tau)$ . We then summarize the impacts of  $w$ ,  $n_v$  and  $\tau$  on  $\bar{x}^*$  in the following lemma.

**Lemma 4** For  $w$  and  $n_v$ ,  $\bar{x}^*(w, n_v, \tau)$  has the same properties than  $x^*(w, n_v)$  (see Lemma 3).  $\bar{x}^*(w, n_v, \tau)$  is decreasing with the tax rate  $\tau$ .

The introduction of a public level of protection allows to reduce the gap between poorer and richer families. However, there is a substitution between the private and public level of protection. How does this substitution affect the total level of protection?

$$\frac{\partial \bar{b}(w, n_v, \tau)}{\partial \tau} = B^P(\bar{x}^*(w, n_v, \tau)) \frac{\partial \bar{x}^*(w, n_v, \tau)}{\partial \tau} + \bar{w} \frac{\partial B^G(g, 0)}{\partial g}$$

An increase of the public level of protection through an increase of the tax rate may reduce the total level of protection. Actually, there is a trade-off between the negative effect of the tax rate on the private investment in protection and its positive effect on the public investment. The public intervention may have pervert effect on the level of protection. A foreign aid in form of grants could maybe avoid this effect.

## 5.2 Households' political decision

We now wonder what level of tax rate majority voters (households) choose. Define the equilibrium maximum utility level of a taxpayer (household) by a real-valued function  $V(\cdot)$ . We write:

$$V(w, \tau, n_v) = U(w(1 - \tau) - \bar{x}^*(w, n_v, \tau)) - T(B^P(\bar{x}^*(w, n_v, \tau)) + B^G(g, 0)) M(n_v, q) \Delta.$$

Taxpayer's preferred tax rate is determined by the maximization of  $V$  with respect to  $\tau$ , that is to say:

$$\max_{\tau} V(w, \tau, n_v) \tag{6}$$

We define  $\bar{\tau}^*$  the optimal tax rate and the optimal level of protection by  $\bar{b}^* = B^P(\bar{x}^*(w, n_v, \bar{\tau}^*)) + B^G(\bar{\tau}^* \bar{w}, 0)$ . We then get the following proposition:

**Proposition 4**  $\bar{\tau}^*$  is characterized by:

$$-wU'(w(1 - \tau) - \bar{x}^*(w, n_v, \bar{\tau}^*)) - \bar{w}T'(\bar{b}^*) \frac{\partial B^G(\bar{\tau}^* \bar{w}, 0)}{\partial g} M(n_v, q) \Delta = 0 \tag{7}$$

So, the optimal tax rate depends on  $w$ . We write  $\bar{\tau}^* = \bar{\tau}^*(w)$ . We note that for given  $w, q$  and  $n_v$ ,  $(\bar{\tau}^*(w), \bar{x}^*(w, n_v), e^*(q, n_v))$  is a stackelberg equilibrium. We then now present the effect of  $w$  on  $\bar{\tau}^*$ .

**Lemma 5**  $\bar{\tau}^*$  is decreasing with  $w$ .

Because of the redistributive character of the public investment in protection, poorer families prefer a higher tax rate. However, richer families favour a lower tax rate because they are willing by their own to protect their children.

## 6 Decision-making with public intervention and foreign aid

Now, we introduce a foreign aid. This help may be considered as a fund allowing State to improve his fight against child kidnapping. For instance, this fund may be allocated to training of policemen against this issue, or involving new surveillance equipments.

We solve the model by backward induction. Again, kidnapper observes the global level of protection through the total number of vulnerable children. He takes this number as given. Then, his problem is identical with the one of previous section (1). Yet, the optimal kidnapper's effort is  $e^*(q, n_v)$ . In subsection 4.1, we examine the household's private investment in protection. In subsection 4.2, we analyse the household's political decision with the introduction of a foreign aid.

### 6.1 Household's private investment in protection

Each household chooses his investment  $x$  to protect his child in order to maximize his welfare. Thus, taking  $n_v$ ,  $e^*(q, n_v)$ ,  $\tau$  and  $a$  as given, each household solves the following problem:

$$\begin{cases} \max_{b,x,C} U(C) - T(b)M(n_v, q)\Delta \\ C + x = w(1 - \tau); \\ b = B^P(x) + B^G(g, a); \\ g = \tau\bar{w}. \end{cases}$$

We define by  $\tilde{x}^*$  the household's optimal private investment in protection and  $\tilde{b} = B^P(\tilde{x}^*) + B^G(\tau\bar{w}, a)$  the optimal level of protection for a given  $\tau$ .

**Proposition 5**  $\tilde{x}^*$  is characterized by:

$$-U'(w(1 - \tau) - \tilde{x}^*) - T'(\tilde{b})B^{P'}(\tilde{x}^*)M(n_v, q)\Delta = 0. \quad (8)$$

Then, the household's optimal private investment in protection depends on  $w$ ,  $n_v$ ,  $\tau$  and  $a$ . So, we write  $\tilde{x}^* = \tilde{x}^*(w, n_v, \tau, a)$  and then  $\tilde{b}(w, n_v, \tau, a)$ . We now present in the following lemma the effects of  $w$ ,  $n_v$ ,  $\tau$  and  $a$  on  $\tilde{x}^*$ .

**Lemma 6** For  $w$ ,  $n_v$  and  $\tau$   $\tilde{x}^*(w, n_v, \tau, a)$  has the same properties than  $\bar{x}^*(w, n_v, \tau)$  (see Lemma 4).  $\tilde{x}^*(w, n_v, \tau, a)$  is decreasing with the foreign aid  $a$ .

There is a substitution effect between the private investment in protection and the foreign aid. Actually, this foreign aid is viewed as free resource and then discourages households' investment.

## 6.2 Households' political decision with foreign aid

We now wonder what level of tax rate majority voters (households) choose in presence of foreign aid. Define the equilibrium maximum utility level of a taxpayer (household) by a real-valued function  $\tilde{V}(\cdot)$ . We write:

$$\tilde{V}(w, \tau, n_v, a) = U(w(1 - \tau) - \tilde{x}^*(w, n_v, \tau, a)) - T(B^P(\tilde{x}^*(w, n_v, \tau, a)) + B^G(g, a)) M(n_v, q)\Delta.$$

Each household evaluates his optimal income tax rate in order to maximize his welfare. We define  $\tilde{\tau}^*$  the optimal tax rate. Thus,  $\tilde{\tau}^*$  is determined by the maximization of  $\tilde{V}$  with respect to  $\tau$ , that is to say:

$$\max_{\tau} \tilde{V}(w, \tau, n_v, a)$$

We define the optimal level of protection by  $\tilde{b}^* = B^P(\tilde{x}^*(w, n_v, \tilde{\tau}^*, a)) + B^G(\tilde{\tau}^* \bar{w}, a)$ . The following proposition specified the optimal tax rate.

**Proposition 6**  $\tilde{\tau}^*$  is characterized by:

$$-wU'(w(1 - \tau) - \tilde{x}^*(w, n_v, \tau, a)) - T'(\tilde{b}^*) \frac{\partial B^G(\tilde{\tau}^* \bar{w}, a)}{\partial g} M(n_v, q)\Delta = 0 \quad (9)$$

So, the optimal tax rate depends on  $w$  and  $a$ . We write  $\tilde{\tau}^* = \tilde{\tau}^*(w, a)$ . We note that for given  $w, q, n_v$  and  $a$ ,  $(\tilde{\tau}^*(w, a), \tilde{x}^*(w, n_v, a), e^*(q, n_v))$  is a stackelberg equilibrium. The next lemma examines the effects of  $w$  and  $a$  on  $\tilde{\tau}^*$ .

**Lemma 7** For  $w$ ,  $\tilde{\tau}^*(w, a)$  has the same properties than  $\bar{\tau}^*(w)$  (see Lemma 5). In addition, if the effect of  $a$  on  $B^G(g, a)$  is high enough to compensate the positive effect, then  $\tilde{\tau}^*$  is decreasing with  $a$ . Otherwise  $\tilde{\tau}^*$  is increasing with  $a$ .

The foreign aid may have a pervert effect on the tax rate, and may create an aid dependency. Tax voters (households) may have less incentive to adopt protection policies against child kidnapping if an increase of the foreign aid increases strongly the public level of protection. Hence, international organisms have to be cautious on the effect that their aid may lead to State's policy. Indeed, how does foreign aid affect the total level of protection?

$$\frac{\partial \tilde{b}^*(w, n_v, a)}{\partial a} = \frac{\partial b^P}{\partial a} + \frac{\partial b^G}{\partial a}$$

$$\text{with } \frac{\partial b^P}{\partial a} = B^{P'}(\tilde{x}^*(w, n_v, \tau, a)) \left[ \frac{\partial \tilde{x}^*(w, n_v, \tau, a)}{\partial a} + \frac{\partial \tilde{x}^*(w, n_v, \tau, a)}{\partial \tau} \frac{\partial \tilde{\tau}^*(w, a)}{\partial a} \right]$$

$$\text{and } \frac{\partial b^G}{\partial a} = \frac{\partial B^G(g, a)}{\partial a} + \bar{w} \frac{\partial B^G(g, a)}{\partial g} \frac{\partial \tilde{\tau}^*(w, a)}{\partial a}.$$

If the tax rate increases with the foreign aid, there is a trade-off between the negative effect of the foreign aid on the private level of protection and its positive effect on the public level of protection. The negative effect may be so high that the total level of protection decreases. In addition, if the tax rate decreases with the foreign aid, both effects of foreign aid on private and public level of protections are ambiguous, and may also lead to a decrease of the total level of protection.

## 7 Discussion and conclusion

State's policy and foreign aid have to be chosen with care in order to avoid crowding out the parents effort, and create an aid dependency.

In order to limit a vicious cycle of increase of child's vulnerability, public production of child safety resources is useful. Through redistributive taxation, the gap between the richer and the poorer families is reduced, allowing to children from poorer families to be less vulnerable.

Nevertheless, the level of taxation may differ according to the kind of political system set up in the country. In a democratic system, the people retain the political sovereignty. Hence, if the majority of the population is poor then, the chosen tax rate would be the highest possible. However, if the redistribution policy confiscates too much the revenue of rich families, there may be a tax expatriation effect. So, the level of the tax has to take into account this impact. On the other hand, if the majority is rich, or in an oligarchy system which is a form of government where political power effectively rests with a small elite segment of society, in general the richest families, the tax rate would be the lowest possible. Actually, these families sustain a private production of child safety resources.

In this context, a foreign aid is useful to deal with this type of disagreement, but his effect may be pervert. Indeed, households perceive foreign aid as a free resources. They substitute private investment to foreign aid. This substitution may lead to a decrease of the global protection. In addition, households may also substitute tax policy to foreign aid strengthening the decrease effect of the global protection. This negative impact on the tax policy and the private investment create an aid dependency.

We essentially focus our study on the supply side. Now, we make a comment on the way to fight against the demand side (kidnappers). The price is a factor, which affects the demand of child kidnapping. A better international cooperation should be set up to reduce the price of child kidnapping. For example, on the adoption context, an easier international process facilitating the adoption of families could avoid the child kidnapping. In addition, for child labour, an international law increasing the legal age of work could reduce child abduction. However, as stated in the literature on child trafficking, banning child labour is a controversial topic. Indeed, it may imply negative consequences (Basu and Van, 1998, Dessy and Pallage, 2001, Ranjan, 1999 and 2001, Dessy and Vencatachellum, 2002) or beneficial effect on the society (Fallon and Tzannatos, 1998, Baland and Robinson, 2000, and Rogers and Swinnerton, 2002). Reducing the child's price is then a difficult issue and needs a macroeconomics' view.

Moreover, for further research, it could be interesting to study empirically the impact of income inequality on the number of kidnapped children. Indeed, Terre des hommes (2005), US State of Department (2004) and ILO (2002) mention that many factors such that poverty, organized crime and violence favour child's kidnapping. Surprisingly they do not mention income inequality, though Africa and Latin America display both the highest level of child kidnapping and the highest income inequality (UNICEF, 2002, 2005). Empirical studies on child labour already suggest a positive correlation between child trafficking and income inequality (Ranjan, 2001, Rogers et al, 2002, Dessy et al, 2002). Do these results extend to child kidnapping?

## Appendix

### Proof of Lemma 1

We differentiate  $p(x, \bar{w}, \tau, a, e, n_v)$  with respect to  $x$ ,  $\bar{w}$ ,  $\tau$ ,  $a$ ,  $e$  and  $n_v$ , respectively.

$$\frac{\partial p(x, \bar{w}, \tau, a, e, n_v)}{\partial x} = \frac{T'(b)B^{P'}(x)N(e, n_v)}{n_v} < 0.$$

So, the probability for a child to be kidnapped is decreasing with the private investment in protection.

$$\frac{\partial p(x, \bar{w}, \tau, a, e, n_v)}{\partial \bar{w}} = T'(b) \left[ \bar{w} \frac{\partial B^G(g, a)}{\partial g} \right] \frac{N(e, n_v)}{n_v} < 0.$$

So, the probability for a child to be kidnapped is decreasing with the average wage.

$$\frac{\partial p(x, \bar{w}, \tau, a, e, n_v)}{\partial \tau} = T'(b)\bar{w} \frac{\partial B^G(g, a)}{\partial \tau} \frac{N(e, n_v)}{n_v} < 0.$$

So, the probability for a child to be kidnapped is decreasing with the tax rate.

$$\frac{\partial p(x, \bar{w}, \tau, a, e, n_v)}{\partial a} = T'(b)\bar{w} \frac{\partial B^G(g, a)}{\partial a} \frac{N(e, n_v)}{n_v} < 0.$$

So, the probability for a child to be kidnapped is decreasing with the foreign aid.

$$\frac{\partial p(x, \bar{w}, \tau, a, e, n_v)}{\partial e} = \frac{T(b) \frac{\partial N(e, n_v)}{\partial e}}{n_v} > 0.$$

So, the probability for a child to be kidnapped is increasing with the kidnapper's effort.

$$\frac{\partial p(x, \bar{w}, \tau, a, e, n_v)}{\partial n_v} = \frac{T(b)}{n_v} \left( \frac{\partial N(e, n_v)}{\partial n_v} - \frac{N(e, n_v)}{n_v} \right) < 0.$$

because  $N$  is concave in  $n_v$ . Hence, the probability for a child to be kidnapped is decreasing with the average number of vulnerable children.

■

### Proof of Proposition 1

Problem (1) is concave because  $N$  is concave in  $e$ . Then, we may write the first order condition and derive from it, the best response of the kidnapper to the households' decisions:

$$q \frac{\partial N(e, n_v)}{\partial e} - 1 = 0. \quad (10)$$

We note that equation (10) has a unique solution for the kidnapper's effort.

■

### Proof of Lemma 2

Using the Implicit Function Theorem, it is sufficient to study the sign of the derivative to equation (2) with respect to  $q$  and  $n_v$ .

We differentiate equation (2) with respect to  $q$ , we obtain:

$$\frac{\partial N(e, n_v)}{\partial e}$$

which is positive. Hence, the kidnapper's optimal effort is increasing with the price of a child.

We differentiate equation (2) with respect to  $n_v$ , we have:

$$q \frac{\partial^2 N(e, n_v)}{\partial n_v \partial e}$$

which is positive. Then, the kidnapper's optimal effort is increasing with the number of vulnerable children.

■

### Proof of Proposition 2

We rewrite problem (3) as follows:

$$\max_x U(w - x) - T(B^P(x)) M(n_v, q) \Delta. \quad (11)$$

Concavity of problem (11): We differentiate twice times the objective function with respect to  $x$ , we obtain:

$$U''(w - x) - \left[ T''(b) B^{P'}(x)^2 + T'(b) B^{P''}(x) \right] M(n_v, q) \Delta$$

which is negative. Hence, problem (11) is concave.

We derive from the first order condition, the household's optimal private investment in protection:

$$-U'(w - x) - T'(b) B^{P'}(x) M(n_v, q) \Delta = 0. \quad (12)$$

Equation (12) has a unique solution for the household's private investment in protection because  $-U'(w - x)$  is decreasing with  $x$  by concavity of  $U$ ; and  $T'(b) B^{P'}(x)$  is also decreasing with  $x$  by convexity of  $T$  and the decrease of  $B^P$ .

■

### Proof of Lemma 3

Using the Implicit Function Theorem, it is sufficient to study the sign of the derivative to equation (4) with respect to  $w$ ,  $q$  and  $n_v$ , respectively.

We differentiate equation (4) with respect to  $w$ , we obtain:

$$-U''(w - x)$$

which is positive by concavity of  $U$ . Thus, the household's optimal private investment is increasing with the wage.

We differentiate equation (4) with respect to  $q$ , we get:

$$-T'(b)B^{P'}(x)\frac{\partial M(n_v, q)}{\partial q}\Delta$$

which is positive because  $\frac{\partial M(n_v, q)}{\partial q} = \frac{\partial N(e^*(q, n_v), n_v)}{\partial e} \frac{\partial e^*(q, n_v)}{\partial q}$  is positive. Then, the household's optimal private investment is increasing with the price of a child.

We differentiate equation (4) with respect to  $n_v$ , we have:

$$-T'(b)B^{P'}(x)\frac{\partial M(n_v, q)}{\partial n_v}\Delta$$

with

$$\frac{\partial M(n_v, q)}{\partial n_v} = \frac{1}{n_v} \left[ \frac{\partial N(e^*(q, n_v), n_v)}{\partial e^*} \frac{\partial e^*(q, n_v)}{\partial n_v} + \frac{\partial N(e^*(q, n_v), n_v)}{\partial n_v} - \frac{N(e^*(q, n_v), n_v)}{n_v} \right].$$

Since,  $N$  is concave with  $n_v$  then  $\frac{\partial N(e^*(q, n_v), n_v)}{\partial n_v} - \frac{N(e^*(q, n_v), n_v)}{n_v}$  is negative, while  $\frac{\partial N(e^*(q, n_v), n_v)}{\partial e^*(q, n_v)} \frac{\partial e^*}{\partial n_v}$  is positive. Hence, if the positive effect of  $n_v$  on  $e^*$  is high enough to compensate the negative effect, then  $x^*$  is increasing with  $n_v$ . Otherwise  $x^*$  is decreasing with  $n_v$ .

■

### Proof of Proposition 3

Similar to the proof of Proposition 2, thus omitted.

■

### Proof of Lemma 4

Similar to the proof of Lemma 3, thus omitted.

Using the Implicit Function Theorem, it is sufficient to study the sign of the derivative to equation (5) with respect to  $\tau$ .

We differentiate equation (5) with respect to  $\tau$ , we obtain:

$$wU''(w(1-\tau) - x) - \bar{w}T''(b)\frac{\partial B^G(\bar{w}, \tau\bar{w}, 0)}{\partial g}B^{P'}(x)M(n_v, q)\Delta$$

which is negative. Then, the private investment in protection is decreasing with the tax rate.

■

### Proof of Proposition 4

Concavity of problem (6): We differentiate twice times the objective function with respect to  $\tau$ , we obtain:

$$\begin{aligned} & U''(w(1-\tau) - \bar{x}^*(w, n_v, \tau)) \left( -w - \frac{\partial \bar{x}^*(w, n_v, \tau)}{\partial \tau} \right)^2 \\ & - T''(\bar{b}) \left( B^{P'}(\bar{x}^*(w, n_v, \tau)) \frac{\partial \bar{x}^*(w, n_v, \tau)}{\partial \tau} + \bar{w} \frac{\partial B^G(g, 0)}{\partial g} \right)^2 M(n_v, q) \Delta \\ & - T'(\bar{b}) \left( B^{P''}(\bar{x}^*(w, n_v, \tau)) \left( \frac{\partial \bar{x}^*(w, n_v, \tau)}{\partial \tau} \right)^2 + \bar{w}^2 \frac{\partial^2 B^G(g, 0)}{\partial g^2} \right) M(n_v, q) \Delta \end{aligned}$$

which is negative. Hence, problem (6) is concave.

From the first order condition, the optimal tax rate is then characterized by:

$$-wU'(w(1-\tau) - \bar{x}^*(w, n_v, \tau)) - \bar{w}T'(\bar{b}) \frac{\partial B^G(g, 0)}{\partial g} M(n_v, q) \Delta = 0. \quad (13)$$

■

### Proof of Lemma 5

Using the Implicit Function Theorem, it is sufficient to study the sign of the derivative to equation (5) with respect to  $w$ .

We differentiate equation (5) with respect to  $w$ , we obtain:

$$\begin{aligned} & -U'(w(1-\tau) - \bar{x}^*(w, n_v, \tau)) - wU''(w(1-\tau) - \bar{x}^*(w, n_v, \tau)) \left( 1 - \tau - \frac{\partial \bar{x}^*(w, n_v, \tau)}{\partial w} \right) \\ & - \bar{w}T''(\bar{b})B^{P'}(\bar{x}^*(w, n_v, \tau)) \frac{\partial \bar{x}^*(w, n_v, \tau)}{\partial w} \frac{\partial B^G(g, 0)}{\partial g} M(n_v, q) \Delta \end{aligned}$$

which is negative because according to the household's budget constraint  $\frac{\partial \bar{x}^*(w, n_v, \tau)}{\partial w} = 1 - \tau$ . So, the tax rate is decreasing with the wage.

■

### Proof of Proposition 5

Similar to the proof of Proposition 2, thus omitted.

■

## Proof of Lemma 6

Similar to the proof of Lemma 4, thus omitted.

Using the Implicit Function Theorem, it is sufficient to study the sign of the derivative to equation (8) with respect to  $a$ .

We differentiate equation (8) with respect to  $a$ , we obtain:

$$-T''(\tilde{b}) \frac{\partial B^G(g, a)}{\partial x} B^{P'}(x) M(n_v, q) \Delta$$

which is negative. Hence, the private investment in protection is decreasing with the foreign aid.

■

## Proof of Proposition 6

Similar to the proof of Proposition 4, thus omitted.

■

## Proof of Lemma 7

Similar to the proof of Lemma 5, thus omitted.

Using the Implicit Function Theorem, it is sufficient to study the sign of the derivative to equation (9) with respect to  $a$ .

We differentiate equation (9) with respect to  $a$ , we obtain:

$$\begin{aligned} & wU''(w(1 - \tau) - \tilde{x}^*(w, n_v, \tau, a)) \frac{\partial \tilde{x}^*(w, n_v, \tau, a)}{\partial a} \\ & -T''(\tilde{b}) \left( B^{P'} \tilde{x}^*(w, n_v, \tau, a) \frac{\partial \tilde{x}^*(w, n_v, \tau, a)}{\partial a} + \frac{\partial B^G(g, a)}{\partial a} \right) \frac{\partial B^G(g, a)}{\partial g} M(n_v, q) \Delta \\ & -T'(\tilde{b}) \frac{\partial^2 B^G(g, a)}{\partial a \partial g} M(n_v, q) \Delta. \end{aligned}$$

If the effect of  $a$  on  $B^G(g, a)$  is high enough to compensate the positive effect, then the tax rate is decreasing with the foreign aid. Otherwise it is increasing.

■

## References

1. Baland, JM. and Robinson, J.A. (2000), "Is child labor inefficient?", *The journal of political economy*, Vol. 108, No. 4, 663-679.
2. Basu, K., Van, P.H. (1998), "The economics of child labor", *American economic review*, Vol. 88(3), 412-427.
3. Basu, K. (1999), "Child labor: Cause, consequence and cure with remarks on international labor standards", *Journal of economic literature*, Vol. 37, 1083-1119.
4. Beyrer, C. (2004), "Global child trafficking", *Medicine, crime, and punishment*, Vol. 364.
5. Clements, B., Gupta, S. , Pivovarsky, A., and Tiongson, E.R. (2004), "Foreign aid: grants versus loans", *Finance and development*.
6. Dessy, S.E. and Pallage, S. (2001), "Child labor and coordination failures", *Journal of development economics*, Vol. 65, 469-476.
7. Dessy, S.E. and Vencatachellum, D. (2002), "Explaining cross-country differences in policy response of child labor", *Canadian journal of economics*, Vol. 36(1), 1-20.
8. Dessy, S., Mbiekop, F. and Pallage, S. (2005), "The economics of child trafficking", Working paper 03-23.
9. Dottridge, M. (2004), "Kids as Commodities? Child trafficking and what to do about it", *Terre des Hommes*.
10. Ezemenari, K., Kebede, E., and Lahiri, S. (2008), "The fiscal impact of foreign aid in Rwanda: A theoretical and empirical analysis", *Policy research working paper 4541*, World Bank.
11. Fallon, P. and Tzannatos, Z. (1998), "Child labor: issues and directions for World Bank", *The International Bank for Reconstruction and Development*.
12. Heller, P.S. (1975), "A Model of Public Fiscal Behaviour in Developing Countries: Aid, Investment, and Taxation", *American Economic Review*, Vol. 65, No. 3.
13. ILO-IPEC (2001), "Action against trafficking and sexual exploitation of children", IPEC, Geneva."
14. ILO-IPEC (2002), "Annual report", International labor organization: Geneva.

15. ILO (2002), "Unbearable to the human heart. Child trafficking and action to eliminate it".
16. Inter parliamentary Union and UNICEF (2004), "Child protection", *Handbook for parliamentarians*, No. 7.
17. IRIN (2005), "AFGHANISTAN: Child kidnapping alarming in the south - rights activist".
18. Kimbrough, K.P. (1986), "Foreign aid and optimal fiscal policy", *Canadian Journal of Economics*, Vol.19, No. 1.
19. Lowe, N. (1998), "Forum international sur les enlèvements d'enfants : agenda d'actions au sujet de la Convention de la Haye", *National Center for Missing and Exploited Children*.
20. McGillivray, M., Morrissey, O. (2004), "Fiscal Effects of Aid", in T. Addison and A. Roe (eds). *Fiscal Policy for Development: Poverty, Reconstruction and Growth*. Basingstoke: Palgrave/WIDER, 72-96.
21. United States Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention (2002), "National Incidence Studies of Missing, Abducted, Runaway, and Throwaway Children" (NISMAART).
22. Ranjan, P. (1999), "An economic analysis of child labor", *Economics letters*, Vol. 64, 99-105.
23. Ranjan, P. (2001), "Credit constraints and the phenomenon of child labor", *Journal of development economics*, Vol. 64, 81-102.
24. Ren, X. (2004), "La traite d'enfants : perspectives de l'Asie et du Pacifique", *Communication à la conférence sur la mise en oeuvre des droits de l'enfant : perspectives nationales et internationales*, bureau international des droits de l'enfants.
25. Rogers, C. A. and Swinnerton, K. A. (2007), "A theory of exploitative child labor", *Oxford Economic Papers*.
26. Social alert international (2000), "SOS Trafficking: on the tracks of stolen childhoods A comparative analysis of child trafficking in the world", *Research on Economic, Social and Cultural Rights*, No. 2.
27. Terre des hommes (2005), "Trafic d'enfants et adoption internationale", Campagne 'Stop trafic d'enfants'.

28. UNICEF (2002), "Child trafficking in West Africa, policy responses".
29. UNICEF (2003), "End child exploitation. Stop the traffic".
30. US State Department (2004), "Trafficking in persons report".
31. <http://www.againstsexualexploitation.org/en/instruments/crc-op1.html>.
32. [http://fr.wikipedia.org/wiki/2005\\_en\\_Afrique](http://fr.wikipedia.org/wiki/2005_en_Afrique).
33. [http://www.ilo.org/public/french/bureau/info/features/05/afr\\_forcedlabour.htm](http://www.ilo.org/public/french/bureau/info/features/05/afr_forcedlabour.htm).
34. <http://hrw.org/english/docs/2003/07/15/uganda6220.htm>.
35. <http://hrw.org/english/docs/2003/03/28/uganda5451.htm>.
36. <http://www.societecivile.cd/node.php?id=2055>.
37. [http://www.amnesty.fr/index.php/agir/campagnes/enfants/agir/ouganda\\_proteger\\_les\\_enfants\\_des\\_enlevements](http://www.amnesty.fr/index.php/agir/campagnes/enfants/agir/ouganda_proteger_les_enfants_des_enlevements)
38. <http://geo.international.gc.ca/cip-pic/library/geoffreyoyat-fr.aspx>
39. <http://www.freewebs.com/childshield/>