DOES TRADE OPENNESS AFFECT CORE LABOUR STANDARDS?

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Abstract :

Based on cross-country data from a wide range of developed and developing countries, this study, using an original and synthetic indicator, empirically analyses the incidence of openness to trade on the level of core labour standards. In the first part of our study, when the model is estimated through the OLS method, we find a positive and significant influence of trade on core labour standards. However, literature leads us to assume that trade openness is endogenous. In the second part, using the instrumental variables (IV) method, we show that openness to trade is no longer significant. We test different vectors of instruments that validate the robustness of our results. We conclude that, in the ongoing debate about the incidence of trade openness on the level of core labour standard, increasing openness would not lead to a levelling down, but rather labour standards would depend on national characteristics such as economic and social development.

Keywords : Labour standards - Trade openness - Instrumental variables method.

1. INTRODUCTION

Globalisation creates competition between countries that have differences in wage levels, labour market regulations and social policies. Diversity of the countries' characteristics feeds debate on whether to enter into minimum labour standards agreements before opening trade, in fear of unfair competition and the risks of a levelling down of labour standards.

Among the 174 conventions and 190 recommendations administered by the ILO, the current debate focuses on four labour standards regarded by the ILO as "Core Labour Standard": freedom from forced labour, the abolition of exploitative forms of child labour, the prohibition of discrimination, the respect of freedom of association and collective bargaining (ILO, 86th Labour International Conference, 1998). This standard is applicable to every country regardless of its distinctive characteristics.

Up to now, only a few studies have attempted to illustrate the key contributors to the level of core labour standards and in particular to discuss the influence of trade openness. The ultimate purpose of these studies is to provide an answer to the following question: does keen competition, through the increase in trade flows, lead to a levelling down of the core labour standards? The debate remains largely theoretical and there are no fully satisfying empirical studies addressing the issue. Indeed, many authors focus only on one of the four core labour standards: OECD (2000) deals with union rights; Shelburne (2001) and Edmonds and Pavcnik (2002) only tackle child labour. More recently, Busse (2004) analyses the four core standards but its indicators of the effective level of core labour standards are dubious.

In this paper, we estimate the incidence of openness to trade on the level of the four labour standards. Unlike the existing empirical studies, we base our findings on an original and synthetic indicator, which we have constructed.

Section 2 presents the ongoing debate about the risks of a levelling down of the core standards when openness to trade increases. In Section 3, we describe our variables and our sample followed by a few descriptive statistics. Section 4 is devoted to econometrical estimations and to the analysis of the results. Finally, in Section 5, we draw our conclusions.

2. THE DEBATE

The recent literature devoted to the incidence of trade on the level of core labour standards seeks to determine whether there exists a risk of levelling down. In other words, does trade openness lead to a decrease in core labour standards?

2.1 Theoretical arguments

Some authors point out that the level of core labour standards is first and foremost a national choice, which depends on the level of economic and social development, the factor endowments and the cultural values (Bhagwati, 1995; Srinivasan, 1996). In comparison to these factors, the influence of trade should be negligible. Freeman (1994) adds another argument to assess the neutrality of openness to trade: a country which wants high labour standards can always "pay for" it by combining a devaluation, a decrease in wage and a tax. As a result, the cost of labour standards can be shared between employers, employees and all consumers.

However, even if the level core labour standards results from national choice, trade openness can have an incidence on the different determinants of this choice. In particular, there is a consensus of the literature that income level and its distribution are one of the main explanatory factors for the level of labour standards. Insofar as openness to trade influences these two variables, it can also modify the choices concerning labour standards. The theoretical model developed by Casella (1996) points out the

casual links[1]: openness first leads to a change in relative prices, which means an increase in the national income, a variation in the remuneration of the different production factors and, consequently, a change in the level of labour standards. Casella (1996) describes different cases, notably according to the structure of trade flows (perfect competition with inter-industry trade or imperfect competition with intra-industry trade), and concludes that in many cases, trade is likely to lead to a levelling up of labour standards.

Nevertheless, for several authors, the above analysis is not sufficient because it neglects a key characteristic of labour standards in open economies: these standards can be used as a political economic instrument and, more precisely, as a substitute to more traditional trade policies (see the theoretical model proposed by Bagwell and Staiger, 1998). Indeed, low labour standards can correspond to a deliberate strategy to lower production costs and to promote exports, at least in countries where abuses are more important in export sectors than in the rest of the economy (OECD, 1996; Rodrik, 1996). When faced with such a strategy, the trade partner is, in turn, incited to lower its own standards. Games theory is the best way to represent these interactions. As illustrated by different examples, the equilibrium depends on the winnings expected from the respect or the violation of labour standards (Srinivasan, 1996; Noor, 1997). For Siroen (1996), there is a real risk of a prisoner dilemma, that is, a situation where each partner loosens its standards to face the competition. But a levelling down is not certain. Even if labour standards are used as a trade policy instrument, it could be attractive to tighten them for various reasons. On one hand, as shown by Brown *et al.* (1996), a large country, abundant in labour, could have an incentive to adopt higher labour standards due to their positive impact on the terms of trade. On the other hand, core labour standard enforcement is not necessarily harmful for competitiveness. For example, it could enhance innovation, generate productivity gains and help to face the international competition that is more and more based on productivity, quality and technology rather than only on prices (Aggarwal, 1995; OECD, 1996).

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[1] Casella's model deals with all types of standards (technical, social or environmental). It can be applied in particular to labor standards as they are an increasing function of income.

2.2 Empirical arguments

To settle the argument, empirical analyses are scare. Moreover, they often focus on only one of the four standards. In its study largely devoted to trade unions, OECD (2000) presents few correlations between these standards and the degree of trade protection, based on a sample of 44 developing countries. It is shown that the more a country is opened, the more it respects trade unions' rights. Thanks to temporal analysis based only on countries that have known trade liberalization, OECD also concludes that openness to trade has never been followed by a degradation of union rights. Such an analysis is obviously not sufficient because it does not take into account the other determinants of union rights. The econometrical case study proposed by Edmonds and Pavnicks (2002) is more complete but remains devoted to one standard, child labour. From panel data, they conclude that trade openness, in this case the removal of the quota on the exports of rice, led to a decrease in child labour, through the increase of the real income of an important part of the population[2].

The empirical work of Busse (2004) is the only study focused on the four core labour standards. The same econometrical model is successively applied to each standard to identify the determinants of core labour standards (openness to trade, economic development level, human capital endowment and regional dummies). His results show that trade openness decreases the prevalence of discrimination and child labour even if the coefficients are weakly significant. The influence of trade on union rights and forced labour is more ambiguous. As complete as this study may be, it still suffers from two limitations. First of all, the indicators used to measure the level of core labour standards are doubtful. In particular, union rights and freedom from forced labour are proxied by the Freedom House index, which measures the respect of civil liberties in general[3]. Secondly, the econometric model doesn't tackle the potential endogeneity of several explanatory variables that we address in the next section.

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[2] On the contrary, if the rice was the imported good, trade openness should lead to a decrease in the income of households and thus to an increase in child labour.
[3] Including, for example, freedom of press, due process of law…

3. DATA, SAMPLE AND DESCRIPTIVE STATISTICS

We propose a new empirical study on the determinants of the level of core labour standards, focused on the impact of trade openness. Our study attempts, at the same time, to shed light on the theoretical debate and to offset the limits of existing empirical studies. In this section, we present our original indicator of core labour standards and some descriptive statistics.

3.1   A synthetic indicator of core labour standards

Since no reliable indicator exists for assessing the mean level of the four core labour standards, we have built an original and synthetic indicator. This indicator is based on the exploitation of a new database associating a large amount of quantitative and qualitative information from various sources[4]. Appendice 1 presents a table that summarizes the criteria retained to measure the level of each standard and cites the sources used.

Initially, each standard is processed separately following the method proposed by OECD to elaborate its base regarding union rights (1996 and 2000). To rate each country's level of discrimination, child labour violation and obstacles to union rights, the countries are placed in four categories, from 1 (total violation) to 4 (total respect of the standard), according to the observed degree of violation. Because of the scarcity of the information available, only three categories are retained for forced labour. Next, the synthetic indicator (referred to as *CLS*) is defined as the sum of the index of the categories previously built for each standard. This sum is then included in 0 (absence of the standards) to 1 (respect of the four standards)[5].

[4] Only the information that was common to at least two sources has been kept.
[5] For example, information on Argentina reveals that child labour, discrimination and obstacles to union rights exist but remain limited and that there is no forced labour. Thus Argentina belongs to category 3 for the first three standards and to category 4 for the fourth. The sum of the intermediate scores S equals 13. The formula $((S\text{-}4)/12)$ gives in this case a quantitative synthetic indicator equals to 0.75.

The database for the main trading countries is constructed for the period, 1995-1997. It should be noted that, of the first 70 exporting and importing countries, some Eastern and Middle-Eastern countries, for which there is no reliable information on core labour standards, are excluded. Moreover, the main Sub-Saharan trading countries have been added in order to represent this continent in our database. Finally, the sample covers 40 developing countries and 25 developed countries that represent more than 90% of the world GDP and of the world trade.[6] Appendice 2 lists the countries of our sample with their corresponding value for *CLS*.

3.2   Descriptive statistics

The indicator, *CLS*, allows identification of the countries with low labour standards. First of all, according to the endogenous social development hypothesis, Figure 1 shows a positive correlation between the national wealth, represented here by the average GNP *per capita* between 1995 and 1997 (at PPP, in current US $) and the level of core labour standards.

Figure 1: Correlation between core labour standards and economic development
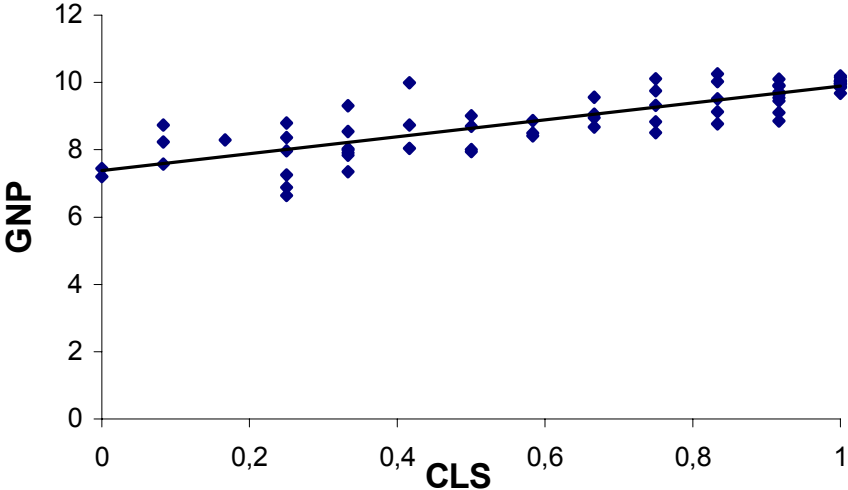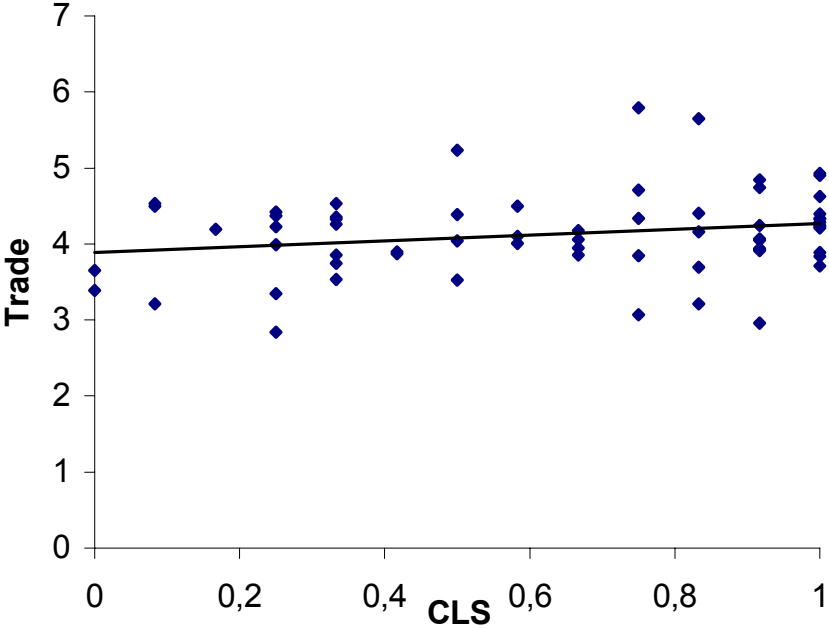

Sources : *CLS* (authors' database) ; *GNP* (World Development Indicators, World Bank, 2002).

Secondly, Figure 2 presents the incidence of trade on core labour standards.

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[6] In the econometric estimations, the number of observations can be inferior because of missing data for the different explanatory variables.

Figure 2 : Correlation between core labour standards and trade openness

Sources : *CLS* (authors' database) ; *GNP* (World Development Indicators, World Bank, 2002).

When trade openness is measured by the sum of exports and imports as a percentage of the GDP[7], a positive though very weak correlation (Figure 2) appears. $R^2 = 5\%$ and is significant at only 7%. In fact, both trade openness and the level of core labour standards depend on numerous determinants (for example, the level of economic development) that are not yet controlled for and potentially distort an accurate relation. Thus, these results call for an econometric and more in depth analysis.

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[7] Exports, imports and GDP are in current US dollars.

4. ECONOMETRIC ESTIMATIONS

In this section, we present an econometric framework to identify the determinants of the level of core labour standards, and more precisely, to highlight the impact of the openness to trade.

The dependent variable is the *CLS* indicator. It should be related to the openness to trade but also to the economic and social development, as shown by Busse (2004). Consequently, along with *Trade*, three control variables are retained.

GNP, that is, the average GNP *per capita* between 1995 and 1997 (at PPP, in current US$), represents the economic development. In compliance with the descriptive analysis, it is expected to positively influence the *CLS* indicator.

Schooling, that is, the average level of education between 1995 and 1997, represents social development. Intuitively, it should be positive since the more education people possess, the less they accept to be exploited. Hence, we can assume that the education level is directly and positively linked to *CLS*. The education level is represented by the average number of school years in the population aged 15 years and more[8].

To control for historical and cultural factors, regional dummy variables have also been included: *Africa*, *Middle East* and *Asia* correspond to African, Middle East and Asiatic countries. In these regions, labour standards seem to be more poorly respected so these dummies variables are expected to be negative[9].

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[8] This variable is preferred to other education indicators for two reasons. First, as a specific stock variable is necessary to define the human capital level, school enrollment ratios that are largely used to represent the national level of human capital, must be excluded. Second, if one stock variable like the literacy rate can be appropriate to differentiate developing countries (Busse, 2004), it cannot be used when the sample mixes developed and developing countries because the variability between developed countries is insufficient.

[9] Dummies for Europe and America have been excluded from the regressions and thus act as the reference variables.

4.1   OLS regressions

First, we estimate the following equation using the OLS method:

$$CLS = \alpha Trade + \beta GNP + \gamma Schooling + \vartheta Africa + \pi MiddleEast + \varsigma Asia + \varepsilon \qquad \textbf{(1)}$$

with ε, an error term.

The estimation results for the cross-sectional OLS regressions are reported in Table 1.

TABLE 1: DETERMINANTS OF CLS (OLS METHOD)

	Dependant variable: CLS, synthetic indicator of core labour standards	
Constant	0.17^* (0.1)	0.14 (0.1)
Trade	0.0008^{**} (0.0004)	
Trade_SW		0.11^* (0.07)
GNP	0.00002^{***} (0.00)	0.00002^{***} (0.00)
Schooling	0.04^{***} (0.01)	0.03^* (0.02)
Africa	-0.08 (0.08)	-0.02 (0.07)
Middle East	-0.07 (0.06)	0.02 (0.07)
Asia	-0.27^{***} (0.06)	-0.21^{***} (0.05)
R-squared	0.82	0.83
Observations	60	54

<u>Sources</u> : *GNP* and *Trade* (World Development Indicators 2002, World Bank) ; *Schooling* (Barro and Lee, 2000) ; *Trade_SW* (Sachs and Warner, 1995).
<u>Significance level</u> : *** 1%, ** 5%, * 10%. The standards errors are noted between brackets.

The two columns estimate the same equation but they differ from each other by the indicator of openness used. In the first column, openness to trade is measured by the ratio of imports and exports to GDP. In the second column, it is represented by the indicator of Sachs and Warner (1995) which classifies countries as 0 (closed) or 1 (opened)[10].

These two regressions confirm the primordial impact of the economic development on the level of core labour standards. The estimated coefficient of *GNP* is positive and highly significant (at the 0.01 level). Nevertheless, the strictly endogenous social development thesis should be used cautiously as *Schooling* and *Asia* are also significant. In fact, after controlling for economic development, the

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[10] A country is defined as closed if it meets any one of the following criteria: tariffs rate of 40 per cent or more; non-tariff barriers covering 40 per cent of trade or more; black market exchange rate premium that is depreciated by 20 per cent or more relative to the official exchange rate; a state monopoly on major exports; and socialist economic system.

more educated a population is, the more *CLS* are enforced. Moreover, *Asia* is the only significant dummy : because of institutional, cultural and/or historical reasons,: this region is characterised by a significantly low level of labour standards.

As regards openness to trade, the results presented in Table 1 suggest that even when using *Trade_SW*, the measure of openness from Sachs and Warner (1995), increased openness to trade is positively associated with the level of core labour standards. Consequently, a phenomenon of levelling down on workers' rights should be excluded. At this stage, we confirm the conclusion of Busse (2004) who argues that openness to trade has a positive influence at least on discrimination against females and child labour in employment, education and health. But such a conclusion is premature because of the assumed endogeneity of any explanatory variables that would bias the OLS estimators.

4.2 Instrumental Variables estimations

The need for the IV method to estimate the causal effect of openness to trade on core labour standards is motivated by at least two sources of endogeneity that could bias the OLS estimates. First, as shown by Van Beers (1998), the level of core labour standards can directly influence the volume of trade by its effects on both the quantity of labour available in the economy and the labour allocation between the different sectors of activity. Second, Bagwell and Staiger (1998) suggest a substitutability between core labour standards and trade policy, which only indicates a relation between these two variables but doesn't state a causal link.

GNP and *Schooling* may be endogenous too. As noted by many authors (OECD, 1996; Piore, 1994), core labour standards promote physical and human capital accumulation, but also productivity gains and, at last , economic growth. The negative impact of core labour standards on human capital accumulation is theoretically evident for child labour (OECD, 1996). It can also be shown for discrimination to the extent that it generally exists both on the labour market and in the access to education. And we can assume that other labour standards also have an influence on human capital

accumulation if the core labour standards violation goes hand in hand with manpower exploitation which is incompatible with human capital accumulation (Siroën, 1996). Consequently, *Schooling* may be endogenous too.

To correct these endogeneity biases, we use the IV method which assumes that three variables are endogenous: *Trade*, *GNP* and *Schooling*. Hence the model can be written as follows:

$$Trade = \lambda Z_1 + \varepsilon_1 \qquad \textbf{(2)}$$

$$GNP = \varphi Z_2 + \varepsilon_2 \qquad \textbf{(3)}$$

$$Schooling = \vartheta Z_3 + \varepsilon_3 \qquad \textbf{(4)}$$

$$CLS = \alpha Tr\hat{a}de + \beta G\hat{N}P + \gamma Scho\hat{o}ling + \kappa Africa + \eta Middleeast + \xi Asia + \varepsilon \quad \textbf{(5)}$$

with Z_1, Z_2 and Z_3, vectors of regressors[11] and ε_1, ε_2 and ε_3, measurement errors. Various instrumental variables are included in the vectors Z_1, Z_2 and Z_3. They significantly explain the endogenous variables but, in accordance with the IV method, they do not influence core labour standards.

The new estimations are presented in Table 2. We have kept the ratio of imports and exports to GDP to measure openness to trade (preferably to Sachs and Warner's indicator) although it is very general and usually criticized. In fact, this indicator is suited for our study because it accounts for both the integration of a country in the world economy and for its exposition to international competition.

In the two columns, *GNP* and *Schooling* are instrumented by two lagged variables: the GNP *per capita (GNP$_{-1}$)* and the human capital (*Schooling$_{-1}$*), in average between 1975 and 1985. Lagged variables are traditional instruments for current variables (see for example Edwards, 1998; Esteve-Volart, 2000). On the contrary, to validate the robustness of our estimations, trade openness is instrumented in two ways. In column 1, we use *Coast*, defined as the part of the total country area

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[11] These vectors include both instrumental variables and exogenous variables from initial model (*Africa*, *Middle East* and *Asia*).

located to more than a hundred kilometres from the coasts. This geographical variable is used as a proxy of "natural" openness. In column 2, we use *Pop* and *Distance*: *Pop* is the size of a country measured by its population in 1997 and *Distance* is the kilometric distance between a country and one of the three nearest world economic centres (USA, European Union and Japan). These two variables are extracted from the gravity model, which is usually retained to instrument an indicator of trade openness (Frankel and Romer, 1999; Rodrik *et al.*, 2002). Appendice 3 reports the first-stage regressions (equations (2), (3) and (4)) [12].

TABLE 2: DETERMINANTS OF CLS (IV METHOD)

	Dependant variable: CLS, synthetic indicator of core labour standards	
	Instruments: *Coast* (and *GNP$_{-1}$, Schooling$_{-1}$, Africa, Middle East, Asia*)	Instruments: *Pop, Distance* (and *GNP$_{-1}$, Schooling$_{-1}$, Africa, Middle East, Asia*)
Constant	0.17 (0.1)	0.16 (0.1)
Trade	0.001 (0.002)	0.0009 (0.001)
GNP	0.00002*** (0.00)	0.00002*** (0.00)
Schooling	0.03* (0.02)	0.04** (0.02)
Africa	-0.07 (0.1)	-0.06 (0.09)
Middle East	-0.06 (0.07)	-0.05 (0.07)
Asia	-0.29*** (0.1)	-0.28*** (0.07)
R-squared	0.82	0.83
Observations	55	55

Sources : *GNP* and *Trade* (World Development Indicators 2002, World Bank) ; *Schooling* (Barro and Lee, 2000).
Significance level : *** 1%, ** 5%, * 10%. The standards errors are noted between brackets.

Table 2 shows that after having corrected endogeneity biases with the instrumental variables method, *GNP*, *Schooling* and *Asia* remain significant determinants of the level of core labour standards. These results are basically in line with those of the OLS estimations. On the contrary, openness to trade now has a positive but not statistically significant influence on core labour standards. Given that two vectors of instruments are tested, we can conclude that this result is robust. Hence, openness to trade should have no direct impact on core labour standards.

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[12] When we regress residuals from equation (5) on instrumental variables, none of the instrumental variables is significant so we can conclude that the quality of our instruments is good.

This result runs contrary to the commonplace idea that increasing openness should lead to a levelling down of labour standards. However, neither does it allow the conclusion that the incidence of trade is positive since the variable measuring trade openness is not significant. It only calls into question the efficiency of the use of trade policies as an instrument to increase the level of core labour standards.

5. CONCLUSION

There is no theoretical consensus regarding whether trade openness affects positively or negatively, and to what extent, the level of the four core labour standards. Our paper has aimed to remove this incertitude by means of an empirical study based on the estimation of an econometrical model in which the dependant variable is an original and synthetic indicator of the level of core labour standards. This indicator is based on a large database of quantitative and qualitative information about the actual situation as regards labour standards for 40 developing countries and 25 developed countries.

To begin with, using the OLS method, we have shown a positive incidence of openness to trade on the core labour standards. This is consistent with others empirical studies but we assume that these results are biased because some explanatory variables, in particular, trade openness, are probably endogenous. The IV method has allowed us to correct this endogeneity bias and leads us to a different conclusion. In our sample, openness to trade has no more impact on core labour standards. We therefore conclude that the aggregated level of these standards is first and foremost a national choice, depending on economic and social development levels and also on cultural values.

References

Aggarwal M. (1995), "International Trade and the Role of Labor Standards", *US International Trade Commission,* Working Paper N°95-06-C, Office of Economics, June.

Bagwell K. and Staiger R.W. (1998), « The Simple Economics of Labor Standards and the GATT », *NBER,* Working Paper Series, N°6604.

Barro R. and J. W. Lee (2000), International Data on Educational Attainment : Updates and Implications, CID Working Paper n°42, April.

Bhagwati J. (1995), « Trade Liberalization and « Fair Trade » demands : Addressing the Enviromental and Labour Standards Issues », *World Economy*, vol. 18, n°6, November, pp. 745-759.

Brown D., A. Deardorff and R. Stern. (1996)*, «* International Labour Standars and Trade : A Theorical Analysis », in Bhagwati et Hudec (eds.), *Fair Trade and Harmonization : Prerequisities for Free Trade ?,* MA: MIT Press, Cambridge, chapitre 3.

Busse M. (2004), « On the Determinants of Core Labour Standards : the Case of Developing Countries », *Economic Letters*, Vol.83, pp.211-217.

Casella A. (1996), « On Standards and Trade : a Review of Simple Results », in Bhagwati et Hudec (eds.), *Fair Trade and Harmonization : Prerequisities for Free Trade ?,* MA: MIT Press, Cambridge.

Edmonds E. and A. Pavnicks (2002), "Does Globalization Increase Child labor ? Evidence from Vietnam", *NBER,* Working Paper Series, N°8760.

Edwards S. (1998), "Openness, productivity and growth : what do we really know ?", *The Economic Journal*, Vol. 108, march, pp. 383-398.

Esteve-Volart B. (2000), "Sex discrimination and Growth", *IMF Working Paper*, WP/00/84, April.

Frankel J. and Romer D. (1999), "Does trade cause growth ?", *American Economic review*, Vol. 89, N°3, pp. 379-399

Freeman R. (1994), « A Hard-Headed Look at Labor Standards » in Schoepfle G. and K. Swinnerton (eds.), *International Labor Standards and Global Integration : Proceeding of a Symposium*, US department of Labor, Washington D.C., July , pp. 26-33.

ILO (1998), International Labour Conference : ILO Declaration on Fundamental Principles and Rights at Work, 86th session, Geneva, June.

Noor W. (1997), *Labor Standards and International Trade : Four Essays*, Ph. D. Dissertation, Columbia University.

OECD (1996 et 2000), *Le commerce, l'emploi et les normes du travail*, OECD, Paris.

Piore M. J. (1994), « International Labor Standards and Business Strategies » in Schoepfle G. and K. Swinnerton (eds.), *International Labor Standards and Global Integration : Proceeding of a Symposium*, US Department of Labor, Washington D.C., July.

Rodrik D. (1996), « Labor Standards in International Trade : Do they Matter and What We Do About Them? » Lawrence R., Rodrik D. and Whalley J. (1996), « Emerging Agenda for Global Trade : High Stakes for Developping Countries », *Policy Essay N°20*, Overseas Development Council, Washington D.C., Chap. 2.

Rodrik D., Subramanian A. and Trebbi F. (2002), « Institutions Rule : The Primacy of Institutions over Geography and Integration in Economic Development", Mimeo.

Sachs J.D. and Warner A. (1995), « Economic Reforms and the Process of Global Integration », *Brookings Papers on Economic Activity*, pp. 1-118.

Shelburne R. (2001), « An explanation of the international variation in the prevalence of child labour », *World Economy*, Vol. 24, pp.359-378.

Siroën J-M. (1996), « Existe-t-il une justification économique à la clause sociale ? Quelques éléments de réflexion », in De Melo J. et P. Guillaumont, *Commerce Nord-Sud, Migration et délocalisation*, Economica, Paris, pp. 291-307.

Srinivasan T. N. (1996), « Trade and Human Rights », Center Discussion Paper n°765, Economic Growth Center, Yale University, December.

Van Beers C. (1998), "Labour Standards and Trade Flows of OECD Countries", *The World Economy*, Vol. 21, n°1, January.

World Bank (2002), World Development Indicators.

Appendice 1 : Criteria to Evaluate the Effective Level of Core Labor Standards

	Criteria	Sources
Child Labor	- Number of Children working - Economic activity and type of work - Working conditions and remuneration	- US Department of Labor, 1994 et 1995, <u>By The Sweat and Toil of Children</u>, Vol. 1 et 2. - US Department of State, 1997, <u>Country Report on Human Right Practices for 1997</u>, section 6.d. - International Confederation of Free Trade Unions (ICFTU<u>), Internationally-Recognized Core Labour Standards : Report for the WTO General Council review of the trade policies</u>, Survey for each country - Children's Labor force participation rate in 1996 (% of the 10-14 years old). *Source* : World Bank, 2002, <u>World Development Indicators 2002</u> - IPEC database http://www.ilo.org/public/english/standards/ipec/simpoc/coutries.htm
Forced Labor	Existence and extent of forced labor.	- ILO, 2001, *Stopping Forced Labor*, Part I, Geneva - ILO, 1999, <u>Report of the Committee of Experts on the Application of Conventions and Recommendations</u>, Report III (Part 1A), Geneva. - US Department of State, 1997, *Ibid.*, section 6 c. - International Confederation of Free Trade Unions (ICFTU), *Ibid.,* Survey for each country .
Discrimination	- Existence and extent of **racial discrimination** in employment. - Each minority as a percentage of total population.	- Committee on the Elimination of Racial Discrimination (CERD), <u>Concluding Observations</u>, Survey for each country. - US Department of State, 1997, *Ibid.*, section 5. - International Confederation of Free Trade Unions (ICFTU), *Ibid.,* Survey for each country.
	- Existence and extent of **sexual discrimination** and women empowerment in society. - Discrimination in employment. - Discrimination in education.	- Committee on the Elimination of Discrimination Against Women (CEDAW), <u>Concluding Observations</u>, Survey for each country. - US Department of State, 1997, *Ibid.*, section 5. - International Confederation of Free Trade Unions (ICFTU), *Ibid.,* Survey for each country . - GEM, Gender Empowerment Measure. *Source* : UNPD, 1998, <u>Human Development Report1988</u>. - Women's Labor Force Participation Rates. *Source* : World Bank, 2002, *Ibid.* - Indicators of discrimination in education *Source* :World Bank, 2002, *Ibid.*; UNPD, 1999, <u>Human Development Report</u>, Tableau 2.
Trade Unions Rights	- Obstacles to freedom of association. - Obstacles to the rights of striking and collective bargaining. - Protection of trade unions adherents.	- International Confederation of Free Trade Unions (ICFTU), 1998, Annual Survey of Violations of Trade Unions Rights, Brussels. - International Confederation of Free Trade Unions (ICFTU), *Ibid.,* Survey for each country . - Number of strikes and lock-out per year. *Source* : ILO, 2002, LABORSTA. - Trade union rates. *Source* : ILO, 1997,<u>World Employment Report 1997-98</u>, Tableau 1.2

Appendice 2 : List of countries and their level of Core Labor Standards.

Countries are classified according to the value of the Core Labour Standards indicator (noted in brackets).

Western and eastern Europe	America	Africa and Middle East	Asia
Austria (1)	Argentina (0.75)	Algeria (0.58)	Australia (1)
Belgium (1)	Brazil (0.25)	Côte d'Ivoire (0.25)	Bangladesh (0)
Bulgaria (0.75)	Canada (1)	Egypt (0.33)	China (0.33)
Czech Republic (0.92)	Chile (0.66)	Iran, I.R. of (0.33)	Hongkong (0.83)
Denmark (1)	Colombia (0.5)	Israel (0.75)	India (0.08)
Finland (1)	Dominican Rep. (0.16)	Kenya (0.25)	Indonesia (0.25)
France (1)	Ecuador (0.5)	Morocco (0.42)	Japan (0.92)
Germany (1)	Mexico (0.58)	Nigeria (0.25)	Korea (0.67)
Greece (0.83)	Peru (0.25)	Saudi Arabia (0.33)	Malaysia (0.5)
Hungary (0.83)	United States (0.83)	South Africa (0.67)	New Zealand (0.92)
Ireland (1)	Venezuela (0.67)	Syrian Arab Rep. (0.33)	Pakistan (0)
Italy (0.92)		Tunisia (0.58)	Philippines (0.08)
Netherlands (1)		United Arab Emirates (0.42)	Singapore (0.75)
Norway (1)		Zimbabwe (0.33)	Sri Lanka (0.5)
Poland (0.92)			Thailand (0.08)
Portugal (0.92)			Vietnam (0.33)
Romania (0.83)			
Russia (0.75)			
Slovak Republic (0.92)			
Spain (0.92)			
Sweden (1)			
Switzerland (1)			
Turkey (0.42)			
United Kingdom (0.92)			

Appendice 3 : First-stage regressions (IV method)

TABLE 3: FIRST-STAGE REGRESSIONS (IV METHOD)

	Instruments : *Coast* (and *GNP$_{-1}$, Schooling$_{-1}$, Africa, Middle East, Asia*)			Instruments: *Pop, Distance* (and *GNP$_{-1}$, Schooling$_{-1}$, Africa, Middle East, Asia*)		
Dependant variable	**Trade**	**GNP**	**Schooling**	**Trade**	**GNP**	**Schooling**
Constant	14.77 (24.89)	-1730.91 (1142.47)	1.97*** (0.35)	45.00 (28.43)	-856.95 (1444.70)	2.23*** (0.40)
GNP$_{-1}$	0.00088 (0.0035)	2.47*** (0.16)	0.000022 (0.000049)	-0.0008 (0.004)	2.46*** (0.19)	0.00 (0.00)
Schooling$_{-1}$	3.78 (4.96)	-253.77 (227.85)	0.88*** (0.07)	5.03 (4.86)	-177.49 (247.04)	0.89*** (0.07)
Coast	0.041* (0.021)	2.89*** (0.98)	-0.00011 (0.00030)			
Pop				-0.00** (0.00)	-0.00 (0.00)	-0.00 (0.00)
Distance				-0.003 (0.003)	-0.03 (0.16)	-0.00005 (0.00005)
Africa	31.17 (33.44)	-177.72 (1534.98)	0.17 (0.46)	29.88 (34.94)	-690.34 (17775.43)	0.40 (0.50)
Middle East	16.60 (24.95)	433.89 (1145.01)	0.19 (0.35)	10.86 (24.56)	388.21 (1248)	0.121 (0.35)
Asia	33.37 (20.85)	3625.40*** (956.92)	0.05 (0.29)	62.88*** (20.33)	4943.25*** (1033.03)	0.05 (0.29)
R-squared	0.19	0.93	0.92	0.24	0.92	0.92
Observations	55	55	55	55	55	55

Sources : *GNP, GNP$_{-1}$, Pop* and *Trade* (World Development Indicators 2002, World Bank) ; *Schooling* and *Schooling$_{-1}$* (Barro and Lee, 2000); *Coast* and *Distance* (??)
Significance level : *** 1%, ** 5%, * 10%. The standards errors are noted between brackets.