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DISCUSSION PAPER

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Matthias Busse

Sebastian Braun

HWWA DISCUSSION PAPER

200

Hamburgisches Welt-Wirtschafts-Archiv (HWWA)
Hamburg Institute of International Economics
2002
ISSN 1616-4814

The HWWA is a member of:

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- Arbeitsgemeinschaft deutscher wirtschaftswissenschaftlicher Forschungsinstitute (ARGE)
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This paper has been prepared within the Research Programme „Trade and Development“.

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Edited by the Department
World Economy
Head: Dr. Carsten Hefeker

Hamburgisches Welt-Wirtschafts-Archiv (HWWA)
Hamburg Institute of International Economics

Öffentlichkeitsarbeit
Neuer Jungfernstieg 21 - 20347 Hamburg
Telefon: 040/428 34 355
Telefax: 040/428 34 451
e-mail: hwwa@hwwa.de
Internet: http://www.hwwa.de/

Matthias Busse
Hamburgisches Welt-Wirtschafts-Archiv (HWWA)
Hamburg Institute of International Economics
Telefon: 040/428 34 435
Telefax: 040/428 34 451
e-mail: busse@hwwa.de

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ABSTRACT

This paper explores the international economic effects of forced labour, namely the linkages of forced labour with comparative advantage (trade) and foreign direct investment flows. It discusses several forms and the prevalence of forced labour and presents the results of empirical tests of those linkages. The results show that forced labour may enhance the endowment of unskilled labour. It can thus be expected to improve comparative advantage in unskilled-labour-intensive goods, that is, commodities where the impact of forced labour is likely to be felt most strongly. In contrast, foreign direct investment is negatively linked with forced labour. This result even holds for relatively poor developing countries.

ZUSAMMENFASSUNG

In dem vorliegenden Beitrag werden die internationalen ökonomischen Auswirkungen der Zwangsarbeit untersucht, das heißt die Beziehung zwischen Zwangsarbeit sowie ausländischen Direktinvestitionen einerseits und komparativen Handelsvorteilen anderseits. Im Mittelpunkt dabei steht zum einen eine Diskussion verschiedener Formen und der Verbreitung von Zwangsarbeit, zum anderen eine empirische Überprüfung dieser Zusammenhänge. Die Ergebnisse zeigen einen positiven Zusammenhang zwischen Ausmaß von Zwangsarbeit und komparativen Handelsvorteilen bei den arbeitsintensiven Industrieprodukten, die vorwiegend von Zwangsarbeit betroffen sind. Auf der anderen Seite investieren internationale Konzerne überwiegend in Ländern, die unterdurchschnittlich von Zwangsarbeit betroffen sind. Dies gilt auch für relativ arme Entwicklungsländer.

JEL Classification: F14, F23, O19

Key Words: Forced Labour, Trade, Foreign Direct Investment, Cross-Country Regression Framework

1 INTRODUCTION

Millions of people around the world are still subjected to forced labour. Detailed figures are not available, but it is estimated that nowadays slavery is more widespread than at any previous time in history (Bales, 1999). The universal condemnation of forced labour has not been able to impede the emergence of its modern forms, like trafficking in human beings, the fastest growing manifestation of forced labour affecting up to four million people in 2001 (US Department of State, 2002). Furthermore, traditional forms of forced labour such as chattel slavery and bonded labour are still widespread. The number of bonded labourers alone has been estimated at 20 million persons (UNHCR, 1999), documenting the significance of the problem. Nevertheless, the existence of forced labour is still denied by some states and making use of it is too often exempted from punishment. Hence, in spite of indisputable progress made by many states, especially by enacting adequate legislation to fight forced labour, the effective elimination of forced labour remains far away.

In addition to severe human suffering, the economic consequences of forced labour can be quite substantial in countries with a high extent of forced labour. Well-known examples from the 18th and 19th century are, for instance, slavery in the United States, which has been intensively analysed by Fogel (1975, 1977) and Fogel and Engerman (1989), and convict workers in Australia (Nicholas, 1988). These previous theoretical and empirical studies have concentrated on the direct (domestic) labour market effects of forced labour. The results have been partly surprising. In particular, Fogel (1975) refuted the then conventional wisdom that slavery was not just dreadful, but also inefficient. He estimated that the economies of America's slave-holding states had actually a 9% higher productivity than those of free states. Yet in addition to severe pain and suffering caused by slavery, slaves received lower wages. Just before the American civil war, according to estimates by Fogel, slaves were "compensated" some 10% less than similar free workers with shelter, food and so on.

Despite these quantitatively significant results, to our knowledge, there are no studies available in the literature that depart from the domestic economic effects to include any foreign linkages of forced labour. Nor are there any studies that have either analysed the economic effects of modern forms of forced labour or undertaken any form of international comparison. Available are only some recent studies looking at the domestic and international consequences of (other) core labour standards on economic

variables like trade or foreign direct investment (FDI).[1] Core, or fundamental, labour standards include important human and workers' rights, such as the abolition of child labour, no discrimination in employment and education, basic union rights, and freedom of forced labour (ILO, 2002a).

Whereas the first three core labour standards have been analysed to a higher extent, forced labour has been left out, partly due to data deficiencies (Kucera, 2001). We will try to fill that gap and address two issues: (1) How the extent of forced labour in different countries can be measured and compared across countries, and (2) whether forced labour affects trade and FDI flows. More specifically, rather than significantly affecting the overall level of exports and imports, forced labour is more likely to influence comparative advantage, in particular in commodities that use a higher extent of forced labour. Thus we concentrate the empirical test of the influence of labour standards on exports of unskilled-labour-intensive goods.

Accordingly, the paper is organised in the following way. In the next Chapter, different forms of forced labour and their occurrence are introduced, which is followed by the background of the International Labour Organisation (ILO) conventions on forced labour in Chapter 3. Chapters 4 and 5 consider the data and indicators used, as well as the estimation results of the linkage between forced labour and comparative advantage and FDI. Finally, some concluding remarks as well as policy implications are found in Chapter 6.

2 PREVALENCE AND FORMS OF FORCED LABOUR

Since forced labour occurs primarily in the illicit economy that is typically not captured by official statistics, its prevalence is difficult to evaluate accurately. According to an estimate by Bales (1999), 27 million people are enslaved today. The most common form of forced labour is represented by bonded labour, which occurs mainly in India, Pakistan, Bangladesh, and Nepal. Generally, forced labour is particularly widespread in Southeast Asia, northern and western Africa, and parts of South America. Slaves are primarily forced to perform simple, non-technological work, especially in agriculture but also in manufacturing, such as of textiles and clothing (Bales, 1999).

Beside the traditional types of forced labour such as chattel slavery, new forms like trafficking in persons emerge. All forms of forced labour involve the exertion of

1 See Brown (2000) for a survey as well as Kucera (2001) and Busse (2002).

compulsion and the denial of freedom of the individual. The first comprehensive report on forced labour, published by the ILO (2001) as part of the follow-up to the ILO's Declaration on Fundamental Principles and Rights at Work of 1998, identifies eight main forms that forced labour takes today.

First of all, *slavery and abductions* for forced labour purposes still exist in parts of Africa. Although the extent of this traditional form of forced labour has diminished since the official prohibition of slavery, cases have been observed recently in Mauritania, Sudan, or Liberia. In Sudan, for instance, especially women and children have been captured in the conflict between different ethnic groups. Estimates suggest that between 5,000 and 14,000 people have been abducted since the start of the conflict in 1983 (Anti-Slavery International, 2002). A second form of forced labour is the *compulsory participation in public works.* This form of forced labour is used to foster national or local development. Cases are known from Vietnam or Cambodia. In Africa, national legislation in countries like Kenya or Sierra Leone still allow for this form of forced labour (ILO, 2001).

Coercive recruitment practices are a type of forced labour that primarily occurs in agriculture and remote rural areas. Since workers in isolated areas may have no choice but to incur debt in order to satisfy their basic needs, they are particularly vulnerable to abuses. The vulnerability is further increased by the fact that law enforcement and trade unions are often weak in remote areas. Coercive recruitment practices have been reported in Cote d'Ivoire, Benin or Togo, affecting children in particular. Furthermore the indigenous population in parts of Latin America suffers under this form of forced labour (ILO, 2001).

Fourthly, work in private households can involve coercion. *Domestic workers in forced labour situations* might be trafficked or are not allowed to leave the home of their employers. Casualties are often children from rural areas working in households in urban areas. In Haiti, for instance, approximately 250,000 children work have been sold or given away by their parents to work as domestic servants (Anti-Slavery International and ICFTU, 2001). Next, *forced labour is sometimes imposed on the civilian population by the military and related authorities.* In Myanmar the military forces civilians to work in support of the military or in infrastructure projects. This extreme form of forced labour was also observed in Guatemala during the 1980s (ILO, 2001).

Bonded labour, or debt bondage, is the most common form of modern slavery. Approximately 20 million people are held in bonded labour and are forced to work in agriculture or manufacturing (Anti-Slavery International and ICFTU, 2001; UNHCR,

1999). Debt bondage takes place when people pledge themselves as a certainty to a credit, but the service is left unspecified and does not reduce the original debt. The debt can also be inherited from a relative (Bales, 1999). Hence, the worker is bound to the creditor for an often unspecified period. Although India and Pakistan adopted specific legislation that prohibits bonded labour in 1976 and 1992/95, respectively, bonded labour is still widespread in these countries. Other countries affected by bonded labour are Nepal, which adopted legislation on bonded labour in 2000, and Bangladesh (ILO, 2001).

The seventh form of forced labour is *trafficking in persons,* which is a fast growing phenomenon that often involves forced labour aspects. For instance, people are trafficked into forced labour situations in construction sites or sweatshops. Mostly people are brought to other areas or foreign countries where they are isolated and do not speak the local language. Often people from rural areas in poor countries are trafficked to urban areas in richer countries. A variety of countries, however, act simultaneously as the point of origin, transit and the place of destination. The magnitude of the problem is difficult to assess, but the US Department of State (2002) estimates that between 700,000 and 4 million people were trafficked in 2001.

Finally, *prison labour* can involve certain forced labour elements. In China, for instance, so-called anti-social acts – such as larceny, fraud, or gambling – are punished with compulsory labour. The rehabilitation through labour programme of the Chinese government accommodates approximately 240,000 persons, who are mostly interned for one year. A fast-growing and highly controversial form of prison labour is that of prisoners working for private companies.[1] On the whole it can be said that not all groups in a society are equally vulnerable to forced labour. Especially children, women and low-income men are disproportionately affected by forced labour.

3 ILO CONVENTIONS ON FORCED LABOUR

With the adoption of international labour standards through conventions and recommendations, the ILO seeks to improve international working conditions. The elimination of all forms of forced or compulsory labour is one of the four fundamental rights at work[2] the ILO focuses on in its Declaration on Fundamental Principles and

1 For a discussion see, for example, Fenwick (2001).

2 The remaining ones are freedom of association and the effective recognition of the right to collective bargaining, the effective abolition of child labour and the elimination of discrimination with respect to employment and occupation (ILO, 1998).

Rights at Work (ILO, 1998). The first ILO Convention on forced labour was adopted in 1930 following a request of the League of Nations. The Forced Labour Convention (ILO Convention No. 29) defines forced labour as work that is exacted under the threat of any punishment and for which the worker has not volunteered. It demands the abolition of all forms of forced labour within the shortest possible time (ILO, 2002a).

While Convention No. 29 can be seen in the context of concerns over the abuse of the endemic population for forced and compulsory labour during colonial times, the second ILO convention on forced labour expresses growing concerns over forced labour used for political purposes (ILO, 2001). The Abolition of Forced Labour Convention (ILO Convention No. 105) called for the eradication of forced labour used for political purposes, as a means of labour discipline, as a punishment for strike action and as a means of discrimination. At the same time, the convention permits certain forms of forced labour such as compulsory military service or minor communal service (ILO, 2002a).

As of 1 July 2002, the ILO conventions on forced labour have been ratified by 161 (No. 29) and 158 (No. 105) member states respectively.[1] Only 6 of the ILO's 175 member states have not ratified any of the two forced labour convention.[2] Although a ratification does not necessarily mean compliance, the high numbers of ratification document the universal condemnation of forced labour. In order to enforce compliance with the conventions, the ILO relies primarily on a supervisory mechanism and technical assistance. Nevertheless, Article 33 of the ILO constitution authorises the ILO to take actions against member states that do not comply with recommendations made by a Commission of Inquiry (ILO, 1989). Elliott (2000) notes that this provision does not rule out the use of sanctions.

Within the supervisory mechanism, member states are required to report annually on ratified conventions. Furthermore, the Declaration on Fundamental Principles and Rights at Work, approved in 1998, obligates member states that have not ratified one or more of the eight conventions on core labour standards to submit reports on what they are doing to promote the rights involved. Organisations of employers and workers are invited to comment on the submissions. Then independent expert-advisers review the compilation of annual reports and provide an introduction. Additionally, each year a

1 See ILO (2002a) for an overview about the current number of ratifications for each convention.

2 Namely Armenia, China, Mongolia, Republic of Korea, Sao Tome and Principe, and Vietnam.

global report on one of the four core labour standards is prepared by the Director-General (ILO, 1998; ILO, 2001).

Apart from transparency, the objective of the submitted reports is to identify priorities for technical co-operation. Countries that are willing to comply with the conventions but lack the necessary resources to do so should get financial and technical assistance. In addition to reporting requirements, the ILO constitution gives any worker and employer organisation the right to make representations if non-compliance to a ratified convention is alleged. In particular, severe case complaints under Article 26 of the constitution can be filed by official ILO delegates. This allows the establishment of an ILO Commission of Inquiry that has the task to investigate grave violations of ILO conventions and to give recommendations of how to bring practices in line with the relevant convention.

If the member state concerned fails to carry out recommendations of a Commission of Inquiry, the Governing Body is legitimated to recommend actions to the Conference to ensure compliance with it (ILO, 1989).[1] In the case of forced labour exacted by the military in Myanmar, the governing body invoked the relevant article for the first time in its history. After the government of Myanmar had not responded to recommendations of a Commission of Inquiry, the governing body and the International Labour Conference instructed the ILO to take a variety of actions against the country. The ILO has suggested that governments and organisations of employers and workers review their relations with Myanmar in order to ensure that the relations do not maintain or promote the use of forced labour (ILO, 2002b). Note, however, that the ILO has not directly imposed sanctions against Myanmar but has called on its member states and international organisation to do so.

4 MEASURING THE EXTENT OF FORCED LABOUR

The formation of an accurate measure of the extent of forced labour suffers heavily from the lack of precise quantitative data. Since forced labour is mostly hidden in the illicit economy, available data is not sufficient to compute quantitative indicators like the proportion of forced labourers to the total labour force. Hence, qualitative measures have to be employed instead. The forced-labour indicators developed in the following use the number of different kinds of forced labour that occur in a specific country to approximate the extent of forced labour in the country concerned. For each of the eight

1 According to Article 32 of the ILO constitution, the implementation of a recommendation can only be challenged before the International Court of Justice.

forms of forced labour, explained in Chapter 2, a dummy variable is introduced that can either take a value of 0 (form does not occur) or 1 (form occurs). Divergently the dummy for trafficking in persons can take a value of 0, 0.5 and 1, since the available data make a more differentiated evaluation possible.[1] Having assessed each country, the respective dummy variables are summed up to obtain the indicator value for a specific country.

Two different indicators have been computed that differ from each other with respect to the number of forms taken into account. The first one, FORCED1, focuses on the forms of forced labour that seem to be more relevant to the focus of the paper, namely slavery and abduction, coercive recruitment systems, bonded labour, and prison-linked forced labour. Before summing up, the bonded labour dummy has been multiplied by two, indicating the specific importance of bonded labour. Since bonded labour is the most common form of forced labour, a country that has problems with bonded labour is more likely to use forced labour on a large scale than, for instance, a country in which coercive recruitment systems exist. Accordingly, FORCED1 can take values between zero (forced labour does not exist) and five (forced labour is used in all four forms).

The second indicator, FORCED2, gives a broader picture of the extent of forced labour by incorporating each form of forced labour. Again, the dummy variable for bonded labour is multiplied by two. Consequently, FORCED2 ranges from zero (forced labour does not exist) to nine (forced labour occurs in all eight forms). Beside the two indicators that measure the *de facto* situation in a country, the third indicator used, CONFORCED, measures the *de jure* ratification of the ILO conventions. The indicator value of a country simply equals the number of ratified forced labour conventions. Thus, CONFORCED ranges from zero (no forced-labour convention ratified) to two (both forced-labour conventions ratified).[2]

The number of ratified ILO conventions on forced labour, however, seems to be a poor measure of the level and extent of forced labour. The partial correlations between the number of ratifications for the two conventions and the two indicators for forced labour are close to zero (Table 1). Yet both correlations have the expected negative sign, since a higher number for FORCED1 and FORCED2 implies a higher extent of forced labour,

1 The US Department of State (2002) as the underlying source classify the countries examined in three groups. See Appendix A for data sources for all three forced-labour indicators and Appendix C for the assigned numbers for each country included in the following analysis.

2 All forced-labour indicators are based on data for the year 1999.

while the opposite applies to CONFORCED – with respect to the spirit of the conventions.

Reasons for the discrepancy between observance and ratification can be found, in some circumstances, in the exact phrasing or interpretation of the forced-labour conventions, which might be contrary to national laws or regulations (OECD, 1996; OECD, 2000). The United States, for instance, has ratified only one of the two conventions, but few would argue that it does not protect its citizens against any form of forced labour. Myanmar, in contrast, has also ratified one convention. Yet it is one of the countries with the worst record of non-observance of this convention (ILO, 2001).

Table 1:
Correlation Matrix

Variable	FORCED1	FORCED2	CONFORCED	DEMOCRACY	GDP99
FORCED1	1.00				
FORCED2	0.85	1.00			
CONFORCED	-0.08	-0.04	1.00		
DEMOCRACY	-0.14	-0.30	0.17	1.00	
GDP99	-0.23	-0.30	0.11	0.52	1.00

Note: Own calculations; see Appendix A for data sources.

Given that FORCED1 and FORCED2 might act as proxies for omitted country characteristics, such as certain economic and political circumstances, measuring the extent of forced labour with these variables could lead to biased regression results. To control for the widest possible range of these other factors, an additional variable, called DEMOCRACY, has been included (in the FDI regressions). This variable combines the two Freedom House (2000) indicators for political rights and civil liberties. They cover a wide range of human and political rights that go considerably beyond forced labour, though the Freedom House checklist also includes specific questions on freedom from exploitation by employers.

Both Freedom House indicators, that is, civil liberties and political rights, are each measured on a scale of 1 to 7, where higher numbers imply fewer liberties and rights. Given that they are highly correlated and in order to obtain a single indicator, both are combined to DEMORACY, using a transformation suggested by Helliwell (1994):

$$(1) \quad \text{DEMOCRACY} = \frac{14 - (\text{Political Rights} + \text{Civil Liberties})}{12}$$

Accordingly, DEMOCRACY ranges from 0 (basically no political rights and civil liberties) to 1 (complete set of political rights and civil liberties). The partial correlations between this synthetic indicator and the two forced-labour variables, FORCED1 and FORCED2, are rather in the low to medium range. On the other hand, there seems to be a closer relationship between basic democratic rights and income levels, measured as GDP per capita (GDP99).

5 EMPIRICAL EVIDENCE

After discussing different indicators for forced labour, we now turn to the linkage between these indicators and comparative advantage and FDI. Let us consider first the impact of forced labour on international trade flows. For concreteness, consider a country that increases, say, its use of prison or forced child labour. In the short run, this will enhance the supply of unskilled-labour. Hence, in a standard Heckscher-Ohlin trade model, for countries that already have a comparative advantage in unskilled-labour-intensive goods, this result would enlarge that advantage.[1]

Regarding the empirical analysis, the focus is on unskilled-labour-intensive manufactured goods only, as the impact of forced labour is likely to be felt most strongly on these commodities. Consequently, forced labour in the agricultural and mining sectors as well as in domestic households is excluded. While forced labour in domestic households is hardly mentioned at all in official statistics, relative export competitiveness in agriculture and mining are based more on natural resources in each country.

Comparative advantage in unskilled-labour-intensive goods is computed as the ratio of unskilled-labour-intensive exports to total exports (the variable is labelled EXPLABIN). The categorisation of unskilled-labour-intensive manufactured commodities is based on two determinants: labour and technology intensity. Incorporated in the regression analysis are all goods that consist of both high labour and low technology intensity, i.e. toys, clothing, textiles, clothing, and footwear (see Appendix B for a complete list).

1 In fact, this is the straightforward analysis of a trade economist. To a labour-market economist, the effects could be different, since there are other wage and labour supply/demand effects involved. Yet, as has been stated in the first chapter, we concentrate on trade and investment effects of forced labour and not on “domestic” labour-market effects.

Labour intensity is based on value added per worker,[1] while data on technology intensity is based on the OECD (2001) Science, Technology and Industry Scoreboard.[2]

As is well known from Heckscher-Ohlin trade models, comparative advantage is determined primarily by relative factor endowments. Hence, two control variables are applied for the "natural" determinants of comparative advantage: first, for the relative labour endowment, the labour force divided by land area (LABDENS), which is expected to be positively associated with EXPLABIN; and, second, for human capital, the educational attainment index (EDU) of the United Nations Development Programme, which consists basically of the illiteracy rate and average years of schooling in the above-25 population. This well-known index for measuring human capital is used as a substitute for the skill level of the labour force and is likely to be negatively correlated with EXPLABIN.[3]

Included in the benchmark OLS regression were all 83 countries reporting data for EXPLABIN, LABDENS, and EDU for the considered year 1998. Then, the basic regression specification is

$$(2)\quad \text{EXPLABIN} = \alpha_0 + \alpha_1 \text{LABDENS} + \alpha_2 \text{EDU} + e,$$

where e is an error term and α_i are parameters. The results, reported in column 1 of Table 2, show that both explanatory variables have the anticipated signs and are statistically significant at the 1 per cent level.

To see whether forced labour also has an impact on comparative advantage, each indicator is singly added to the benchmark regression. The coefficients for the three indicators explained above are reported in the remaining columns of Table 2. FORCED1 and FORCED2 have a positive sign, but are not significant (columns 2 and 4). One reason for these results may be the fact that there is evidence of multicollinearity between the educational attainment index EDU and FORCED1 / FORCED2. It can be argued that the forced-labour indicators are likely to be a substitute for EDU, which implies that countries with a large extent of forced labour have a relatively high proportion of unskilled labour.

1 The classification of labour-intensive commodities has been obtained from Tyers et al. (1987).

2 According to the OECD (2001), technology intensity is based on three characteristics: (1) research and development (R&D) expenditures divided by value added, (2) the ratio of R&D expenditures to production, and (3) R&D expenditures together with technology embodied in intermediate and investment commodities divided by production.

3 Data sources of all variables can be found in Appendix A.

Moreover, LABDENS has a stronger relative influence on EXPLABIN than EDU. In a second set of regressions, thus, the educational attainment index has been omitted. Now, FORCED1 and FORCED2 still have a positive sign, but they are statistically significant at the 10 per cent and 5 per cent level, respectively (columns 3 and 5). A higher level of forced labour is associated with an increasing endowment of unskilled labour (and/or lower labour costs) and, hence, a stronger comparative advantage in unskilled-labour-intensive goods. The number of ratifications of the ILO conventions on forced labour appears not to significantly affect comparative advantage in exports of labour-intensive goods. Though CONFORCED is just above zero, implying that a higher number of ratified conventions is positively associated with comparative advantage, it is not statistically significant.

Table 2:
Forced Labour and Comparative Advantage

Independent Variables	Dependent Variable: EXPLABIN (1)	(2)	(3)	(4)	(5)	(6)
Constant	0.455***	0.444***	0.079	0.406***	0.064	0.416***
	(0.092)	(0.104)	(0.020)	(0.112)	(0.021)	(0.105)
LABDENS	0.843***	0.834***	0.876***	0.823***	0.871***	0.853***
	(0.186)	(0.191)	(0.204)	(0.188)	(0.197)	(0.186)
EDU	-0.428***	-0.416***		-0.379***		-0.426***
	(0.104)	(0.117)		(0.122)		(0.105)
FORCED1		0.008	0.062*			
		(0.034)	(0.033)			
FORCED2				0.019	0.060**	
				(0.025)	(0.023)	
CONFORCED						0.021
						(0.027)
Adj. R^2	0.35	0.34	0.25	0.35	0.27	0.34
N	83	83	83	83	83	83

Notes: See Appendix A for data sources; standard errors have been checked for heteroskedasticity and are reported in parentheses; multicollinearity has been tested by the creation of variance inflation factors (VIF); *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Next we turn to the empirical linkage of forced labour and foreign direct investment. Given that FDI stocks represent FDI flows over a longer period and the indicators for

forced labour are relatively recent, the focus is on flows rather than stocks.[1] Since FDI flows for a single country can fluctuate to a large extent from year to year, a period of five years from 1995 to 1999 has been selected. The data used for the dependent variable are average annual net FDI inflows per capita for that period in current US dollars (FDI).

Unfortunately, there is no generally accepted model on FDI flows available in the literature. Researchers who have analysed the characteristics of transnational corporations have come up with, among others, economies of scale, market structure such as monopolistic competition or the dynamics of oligopoly, market size, political and economic stability, infrastructure, labour costs, openness to trade, or exchange rate risks as import factors for explaining FDI flows (Cooke and Noble, 1998). Generally, empirical studies confirm these determinants and have singled out in particular market size and market growth rates as the most important factors.[2] Hence, these two are included as independent variables in the benchmark regression: Market size (GDP) is measured by average GDP per capita in current US dollars and market growth (GROWTH) is quantified as average GDP per capita growth, each for the period 1995-1999.

Included in the benchmark OLS regression were all 134 countries reporting FDI, GDP, and GDP growth data for the considered period. Like most empirical studies on the determinants of FDI, a semilog model has been chosen, that is, the logarithm for both FDI and GDP has been taken. Since average GDP per capita growth rates can be negative, even if longer periods are considered, GROWTH has been inserted into the regression without taking the logarithm. Then, the benchmark regression specification, without forced-labour indicators, is as follows:

(3) $\text{Log (FDI)} = \beta_0 + \beta_1 \text{ LOG (GDP)} + \beta_2 \text{ GROWTH} + e.$

As can be seen in column 1 in Table 3, both explanatory variables have the expected signs and are statistically significant at the 1 per cent level. To see whether forced labour also has an impact on FDI flows, each indicator is singly added to the benchmark regression, without taking the logarithm. The coefficients for the three indicators explained above are reported in the remaining columns. Both indicators that measure

1 Yet the subsequent empirical results do not change fundamentally if stocks are used instead.

2 See Chakrabarti (2001) for a recent survey of the literature.

the *de facto* compliance with the ratification of the conventions have negative signs and are statistically significant at the 5 or 10 per cent level (columns 2 and 3).

The results imply that forced labour is negatively associated with FDI inflows. In other words: Countries with a lower level of forced labour received more FDI per capita in the period 1995-1999 than would have been predicted on the basis of the other country characteristics. Similar to the linkage between forced labour and comparative advantage, the *de jure* ratification of the ILO conventions seems not to significantly affect FDI flows: CONFORCED has a positive sign, but it is not statistically significant.

As has been explained in the previous chapter, to control for political and economic factors other than forced labour, DEMOCRACY has been included in the regressions (columns 4 and 5): A higher degree of democratic rights is positively associated with FDI flows; the indicator is also statistically significant at the 1 per cent level. More importantly, sign and significance of both FORCED1 and FORCED2 do not change much, which points to the robustness of the results.

Table 3:
Forced Labour and Foreign Direct Investment, All Countries

Independent Variables	Dependent Variable: LOG (FDI) (1)	(2)	(3)	(4)	(5)	(6)
Constant	-4.728*** (0.527)	-4.338*** (0.563)	-4.158*** (0.592)	-3.789*** (0.563)	-3.735*** (0.586)	-4.602*** (0.566)
LOG (GDP)	1.058*** (0.071)	1.016*** (0.074)	1.000*** (0.075)	0.819*** (0.090)	0.825*** (0.091)	1.069*** (0.073)
GROWTH	0.125*** (0.043)	0.131*** (0.043)	0.134*** (0.043)	0.127*** (0.041)	0.129*** (0.041)	0.120*** (0.044)
FORCED1		-0.368* (0.199)		-0.398** (0.191)		
FORCED2			-0.289** (0.142)		-0.258* (0.138)	
DEMOCRACY				1.538*** (0.441)	1.439*** (0.443)	
CONFORCED						0.115 (0.184)
Adj. R^2	0.66	0.66	0.67	0.69	0.69	0.66
N	134	134	134	134	134	134

Notes: See Table 3; *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Evidently, FDI flows are heavily influenced by the dominance of high-income countries and regions. In the period 1995-1999, the *Quad* – Japan, the European Union, Canada, and the United States – accounted for some three-quarters of global FDI inflows and some 85 per cent of outflows (World Bank, 2001). Accordingly, the results with respect to forced labour, which is predominately prevalent in developing countries, might be biased. To find out whether the enclosure (and dominance) of high-income countries has a confounding role, high and upper middle-income countries have been excluded in a further set of regressions. Based on a definition by the World Bank (2001), only low-income and lower-middle-income developing countries, that is, nations with a GDP per capita in 1999 of 2,995 US dollars or less, were incorporated in the regressions. Altogether, 87 developing countries have been identified, representing 76 billion US dollars or 8.6 per cent of world FDI inflows in 1999.

The results, reported in Table 4, are very similar to those of the previous set of empirical estimates on FDI flows. Though the overall fit of the benchmark and the other regressions worsens, signs and statistical significance of all variables are alike. The only exception is the number of ratified ILO conventions, CONFORCED, which now is negatively associated with FDI flows, but still not statistically significant. Yet the level of forced labour is also negatively associated with FDI in developing countries with a low and lower-middle GDP per capita.[1]

1 Both statistical significance and signs of the variables do not change fundamentally, if "richer" developing countries or emerging market economies with, for instance, income (GDP) per capita between 2,995 US dollars and 9,265 US dollars, which are middle- and upper-middle-income countries, are included. To save space, the results are not reported.

Table 4:
Forced Labour and Foreign Direct Investment, Developing Countries

Independent Variables	Dependent Variable: LOG (FDI) (1)	(2)	(3)	(4)	(5)	(6)
Constant	-5.940***	-5.515***	-5.428***	-5.325***	-5.307***	-5.643***
	(1.075)	(1.090)	(1.104)	(1.032)	(1.052)	(1.089)
LOG (GDP)	1.239***	1.191***	1.188***	1.032***	1.044***	1.275***
	(0.163)	(0.164)	(0.164)	(0.162)	(0.163)	(0.164)
GROWTH	0.143***	0.153***	0.156***	0.165***	0.165***	0.125**
	(0.051)	(0.051)	(0.051)	(0.048)	(0.049)	(0.053)
FORCED1		-0.385*		-0.449**		
		(0.221)		(0.210)		
FORCED2			-0.277*		-0.281*	
			(0.162)		(0.154)	
DEMOCRACY				1.799***	1.700***	
				(0.546)	(0.548)	
CONFORCED						-0.310
						(0.220)
Adj. R^2	0.43	0.44	0.44	0.50	0.49	0.43
N	87	87	87	87	87	87

Note: According to a definition by the World Bank (2001), developing countries can be classified as low- and lower-middle-income countries with a GDP per capita in 1999 of US$ 2,995 or less; see Table 3 for further notes; *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Summing up the empirical evidence, the results with respect to comparative advantage in unskilled-labour-intensive goods and FDI tend to pull in opposite directions: The extent of forced labour is negatively linked with FDI, but positively associated with comparative advantage. One explanation for this result might be that transnational corporations do care where they invest. Considering the intensive international discussion over motives and action of transnational corporations over the last decade, they are particularly sensitive regarding any accusations of investing in countries where basic human and workers' rights are not fully observed. This could also explain why transnational corporations invest predominately in democratic countries, even among relatively poor developing countries. Still, in those regressions where the democracy indicator has been included, the indicators that measure the observance of forced labour are also statistically significant and always have a negative sign.

Comparative advantage in unskilled-labour-intensive goods, on the other hand, can be explored by domestic companies, whether they use forced labour or not. International campaigns against abuses of fundamental human and workers' rights are less likely to focus on these companies as long as they are not fully or partly owned by transnational corporations or do not act as a significant supplier of semi-manufactured commodities which are to be exported for further processing in richer OECD countries.

6 POLICY IMPLICATIONS AND CONCLUDING REMARKS

The empirical results suggest that while the extent to which forced labour is used in a country and FDI are negatively associated, there is a positive relationship between forced labour and comparative advantage in unskilled-labour-intensive goods. In order to avert such competitive edges in international trade, import barriers, preferably within the World Trade Organisation (WTO), against commodities from countries with low labour standards are sometimes advocated in the international debate.[1] From our point of view, the inclusion of labour standards like forced labour into the rules and mandate of the WTO to ensure their observance at a global level are not appropriate. They may even result in negative economic consequences, as ways to enforce them can be abused by powerful lobbying groups in rich countries to protect their interests and markets against presumably "unfair" imports from low-income countries with poorer standards.[2] This, sequentially, could be harmful to GDP growth rates (and, thus, FDI inflows) in developing countries.

Nonetheless, the European Union is still in favour of linking trade and core labour standards within the WTO framework. In November 2001, EU trade representatives tried to include the issue in the Doha Round of WTO trade negotiations, but this effort was rejected by developing countries. It has been decided that the issue of labour standards remains in the ILO's sphere of influence and that a study on the social dimension of globalisation will be carried out. The results of that study are expected to be presented by March 2003. Moreover, including labour standards in the WTO appears to be misleading, in particular with respect to forced labour. Since states are often not able to fight forced labour effectively on their own, technical and financial assistance

1 Demands for binding labour standards have been raised in particular by non-governmental organisations such as Amnesty International (2002).

2 See Bhagwati (1996) for a discussion on the political economy ofr labour standards and international trade.

seem to be more appropriate tools than economic sanctions. Furthermore, if necessary, pressure can also be exerted by the ILO.

In order to deal effectively with forced labour, awareness of the problem has to be raised first of all. The nature and dimension of forced labour are virtually unknown or disregarded in many regions. Often, the respective government is willing but not able to cope with the problem on its own. Hence, the ILO should expand its assistance to member states. After identifying the problem, specific action plans can be developed, including, for example, prevention programmes or assistance for people released from forced-labour situations. The more associations from within the United Nation system and regional bodies and development banks take part in these programmes the higher their prospects of success.

Sanctions appear to be unavoidable if a government refuses to co-operate and promotes the use of forced labour as observed in the extreme case of Myanmar. Article 33 of the ILO constitution provides an appropriate instrument, authorising the ILO to take actions against member states that do not comply with recommendations made by a Commission of Inquiry established to examine grave violations of ILO conventions. It would be desirable, however, to put the provision in more concrete terms by substantiating possible measures. In addition, a real test for the enforcement power of the ILO will come over time when more powerful member states than Myanmar stand at the bar or the violations are less clear-cut.

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Appendix A:
Definition of Variables and Data Sources

Variable	Definition	Source
FDI	Foreign direct investment, net inflows in current US dollars, annual average for the period 1995-1999	World Bank (2001)
GDP	GDP per capita in current US dollars, annual average for the period 1995-1999	World Bank (2001)
GDP99	GDP per capita in current US dollars, 1999	World Bank (2001)
GROWTH	Growth of GDP per capita, annual average for the period 1995-1999	World Bank (2001)
EXPLABIN	Exports of unskilled-labour-intensive manufactured goods divided by total exports of goods, 1998	ITC (2000)
LABDENS	Total labour force divided by land area (1,000 sq. km of land), 1998	World Bank (2001)
EDU	Educational attainment index, based on average years of schooling in the above-25 population and illiteracy rate, index from 0-1, 1998	UNDP (2000)
FORCED1	Indicator for core forms of forced labour, scale from 0-5, 1999	Anti-Slavery International and ICFTU (2001), Avery (2002), ILO (2001), US Depart. of State (2002)
FORCED2	Indicator for all forms of forced labour, scale from 0-9, 1999	See above
CONFORCED	Number of ratifications of the two fundamental ILO conventions on forced labour No. 29 and No. 105, Dec. 1999	ILO (2002a)
DEMOCRACY	Index for political rights and civil liberties, index from 0-1, 1999	Freedom House (2000) and own calculations

Appendix B:
Low Technology and Labour-intensive Goods

Commodity	SITC, Rev. 3
Textile yarn and fabric	65
Glass, glassware and pottery	664-666
Furniture and bedding	82
Travel goods and handbags	83
Apparel	84
Footwear	85
Baby carriages, games, toys, sporting goods	894

Sources: OECD (2001), Tyres et al. (1987) and own assembly; see text for explanation.

Appendix C:
Indicators of Forced Labour

Country	FORCED1 (0-5)	FORCED2 (0-9)	ILO Convention No. 29 (0-1)	ILO Convention No. 105 (0-1)	CONFORCED (0-2)
Albania	0	0.5	1	1	2
Algeria	0	0	1	1	2
Angola	0	0.5	1	1	2
Argentina	0	0	1	1	2
Armenia	0	1	0	0	0
Australia	0	0	1	1	2
Austria	0	0	1	1	2
Azerbaijan	0	0	1	0	1
Bahamas	0	0	1	1	2
Bangladesh	2	2.5	1	1	2
Barbados	0	0	1	1	2
Belarus	0	1	1	1	2
Belgium	0	0	1	1	2
Belize	0	0	1	1	2
Benin	2	3.5	1	1	2
Bolivia	1	1	0	1	1
Botswana	0	0	1	1	2
Brazil	1	1.5	1	1	2
Bulgaria	0	0.5	1	1	2
Burkina Faso	0	0.5	1	1	2
Burundi	0	0	1	1	2
Cambodia	0	2	1	1	2
Cameroon	0	0.5	1	1	2
Canada	0	0	0	1	1
Cape Verde	0	0	1	1	2
Central African Republic	0	0.5	1	1	2
Chad	0	0	1	1	2
Chile	0	0	1	1	2
China	1	1.5	0	0	0
Colombia	0	0	1	1	2
Congo, Democratic Rep.	1	1	1	0	1
Congo, Republic	0	0	1	1	2
Costa Rica	0	0.5	1	1	2
Cote d'Ivoire	2	3.5	1	1	2
Croatia	0	0	1	1	2
Cyprus	0	0	1	1	2
Czech Republic	0	0	1	1	2
Denmark	0	0	1	1	2
Djibouti	0	0	1	1	2
Dominican Republic	1	1.5	1	1	2
Ecuador	0	0	1	1	2
Egypt	0	0	1	1	2
El Salvador	0	0.5	1	1	2
Estonia	0	0.5	1	1	2
Ethiopia	0	0.5	0	1	1
Fiji	0	0	1	1	2
Finland	0	0	1	1	2

Country	FORCED1 (0-5)	FORCED2 (0-9)	ILO Convention No. 29 (0-1)	ILO Convention No. 105 (0-1)	CONFORCED (0-2)
France	0	0	1	1	2
Gabon	0	0.5	1	1	2
Gambia	0	0	0	0	0
Germany	0	0	1	1	2
Ghana	0	0	1	1	2
Greece	0	1	1	1	2
Guatemala	1	1.5	1	1	2
Guinea	0	0.5	1	1	2
Guyana	0	0	1	1	2
Haiti	1	2.5	1	1	2
Honduras	0	0.5	1	1	2
Hungary	0	0.5	1	1	2
Iceland	0	0	1	1	2
India	2	2.5	1	0	1
Indonesia	2	3	1	1	2
Iran	0	1	1	1	2
Ireland	0	0	1	1	2
Israel	0	0.5	1	1	2
Italy	0	0	1	1	2
Jamaica	0	0	1	1	2
Japan	0	0.5	1	0	1
Jordan	0	0	1	1	2
Kazakhstan	0	0.5	0	0	0
Kenya	0	0.5	1	1	2
Korea, Republic	0	0	0	0	0
Kyrgyz Republic	0	1	1	1	2
Latvia	0	0.5	0	1	1
Lebanon	0	1	1	1	2
Lesotho	0	0	1	0	1
Lithuania	0	0	1	1	2
Luxembourg	0	0	1	1	2
Macedonia	0	0	1	0	1
Madagascar	1	1	1	0	1
Malawi	0	0	1	1	2
Malaysia	0	0.5	1	0	1
Maldives	0	0	0	0	0
Mali	0	0.5	1	1	2
Malta	0	0	1	1	2
Mauritania	1	1	1	1	2
Mauritius	0	0	1	1	2
Mexico	1	1.5	1	1	2
Moldova	0	0.5	0	1	1
Mongolia	0	0	0	0	0
Morocco	0	0.5	1	1	2
Mozambique	0	0	0	1	1
Nepal	2	2.5	0	0	0
Netherlands	0	0	1	1	2
New Zealand	0	0	1	1	2
Nicaragua	0	0	1	1	2
Niger	0	0	1	1	2

Country	FORCED1 (0-5)	FORCED2 (0-9)	ILO Convention No. 29 (0-1)	ILO Convention No. 105 (0-1)	CONFORCED (0-2)
Nigeria	0	0.5	1	1	2
Norway	0	0	1	1	2
Pakistan	2	2.5	1	1	2
Panama	0	0	1	1	2
Papua New Guinea	0	0	1	1	2
Paraguay	1	1	1	1	2
Peru	1	1	1	1	2
Philippines	1	1.5	0	1	1
Poland	0	0	1	1	2
Portugal	0	0	1	1	2
Romania	0	0.5	1	1	2
Russia	0	1	1	1	2
Samoa	0	0	0	0	0
Senegal	0	0.5	1	1	2
Seychelles	0	0	1	1	2
Sierra Leone	1	2	1	1	2
Singapore	0	0.5	1	0	1
Slovakia	0	0	1	1	2
Slovenia	0	0.5	1	1	2
South Africa	0	0.5	1	1	2
Spain	0	0	1	1	2
Sri Lanka	2	2.5	1	0	1
Sudan	1	2	1	1	2
Swaziland	0	0	1	1	2
Sweden	0	0	1	1	2
Switzerland	0	0	1	1	2
Syrian Arab Republic	0	0	1	1	2
Tanzania	0	1	1	1	2
Thailand	0	0.5	1	1	2
Togo	1	1.5	1	1	2
Trinidad and Tobago	0	0	1	1	2
Tunisia	0	0	1	1	2
Turkey	0	1	1	1	2
Uganda	0	0.5	1	1	2
Ukraine	0	0.5	1	0	1
United Kingdom	0	0	1	1	2
United States	0	0	0	1	1
Uruguay	0	0	1	1	2
Uzbekistan	0	0	1	1	2
Venezuela	0	0	1	1	2
Vietnam	0	0.5	0	0	0
Zambia	0	0	1	1	2
Zimbabwe	0	0	1	1	2

Sources and Definitions: See Appendix A. Note: All forced labour indicators are based on the year 1999.