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Abstract

The integration of core labour standards into the WTO has been demanded mostly on either humanitarian or fair trade grounds. While both reasons can be justified theoretically, the case for integration remains unclear. Whereas the humanitarian integration of core labour standards is a question of means, the fair trade reasoning is a question of empirical relevance. This paper contributes to both questions by estimating the effects of a social clause in a standard computable general equilibrium model of world trade (GTAP). Our finding is that developed countries have little incentive for protectionist misuse of a social clause, since humanitarian trade sanctions hardly reduce their import pressure. Furthermore, even a drastic reduction of child labour in developing countries only has a marginal effect on north-south trade flows. Therefore, calls for a better enforcement of labour standards in the south to correct vertical distribution effects of world trade in the north are not supported by our findings. However, in light of possible trade liberalization-enhancing effects and only a limited danger of protectionist misuse, a multilateral humanitarian social clause could be an effective instrument for furthering the century-long global quest for better worker rights.

Keywords

Trade Policy, Economic Sanctions, Labour Standards, Child Labour

JEL Classification

D58, F16

1 Introduction

The link between so called core labour standards and trade is one of the most controversial issues facing global trade policy-makers.[1] At the Fourth Ministerial Conference in Doha, World Trade Organization (WTO) members reaffirmed their Declaration at Singapore that "the International Labour Organization (ILO) is the competent body to set and deal with [internationally recognized core labour standards]". Despite the unambiguity of this statement, it cannot be assumed that the promotion of core labour standards within the framework of the multilateral trading system has been put to rest.[2] Mainly three different reasons are given for integrating core labour standards into the WTO. [3] This paper enriches the debate by contributing empirical evidence to each of these reasons with three scenarios of the effects of a WTO social clause on welfare and global trade flows.

The rest of this paper is organized as follows. In this introduction we firstly summarize the three reasons and outline their corresponding scenarios. Then we will give a short overview of the GTAP-model we used for estimating the effects of trade sanctions on trade flows and welfare. In part 3, we elaborate on the criteria for classifying countries, which are violating core labour standards. We also explain the aggregation of the GTAP-database as well as the exact definition of the scenarios. In part 4, we present results before we draw conclusions in part 5.

1.1 Integration of core labour standards into the WTO for humanitarian reasons

A practically unanimous international consensus has been established concerning the universal human rights character of core labour standards.[4] This consensus has been codified in various international agreements such as the ILO Declaration on Fundamental Principles and Rights at Work (1998). Accordingly, the debate about the international promotion of core labour standards has shifted from 'if' to 'how'.[5] While some argue that labour standards should be dealt with exclusively by the ILO who uses publicity and technical assistance,[6] others demand the use of trade sanctions to increase pressure on violating countries to improve their

[1] Core labour standards as mentioned in the ILO Declaration on Fundamental Principles and Rights at Work (1998) include the freedom of association and the right to collective bargaining, the elimination of all forms of forced labour, the abolition of child labour and the elimination of discrimination with respect to employment, see OECD (2000), p. 18.
[2] See e.g. Addo (2002), p. 285.
[3] A number of additional non-convincing and contradictory reasons are frequently mentioned in the debate, see Bhagwati (1996) for an overview.
[4] See among others Scherrer, Greven and Frank (1998), p. 262.
[5] See Langille (1997), S. 32.
[6] See among others Bhagwati (2002), p. 79.

core labour standards.[7] For a decision about the appropriate means for promoting international labour standards, costs and benefits of each approach should be compared.

Inferences about the possible benefits of a WTO social clause can be drawn from experiences with the social clause in the US-Generalized System of Preferences (GSP).[8] However, hardly any research exists so far on the costs of a social clause within the world trade order. Whalley and Wigle (1998) took the first step by calculating an increase in tariffs by 35% on *all* labour-intensive exports from *all* developing countries.[9] But they have not differentiated between countries according to how they are respecting core workers' rights.

1.2 A social clause to prevent the unfair trade effects of violations of core labour standards

Violations of core labour standards have been made partially responsible for sectoral and vertical distribution effects of world trade in industrial countries.[10] Since the beginning of the 80's, a strong trend of increasing wage premiums on high-skilled labour can be observed in the US.[11] Mainly technical progress and increasing trade with developing countries have been made responsible for this. However, international trade is usually found to play only a secondary role.[12]

Violations of core labour standards contribute to the distributional effects of international trade, if labour supply in developing countries is positively affected. These labour supply effects are unambiguous in the case of child and forced labour. Violations of these core standards increase labour supply by adults and children who would not be working if those standards were fully observed. Since the additional labour supply is mostly unskilled, production and export of low-skill-intensive goods in developing countries rises. This causes a decline in world market prices for low-skill-intensive goods and for low-skill wages in industrialized countries.[13] Since children's share of total labour supply is more than 10% in some developing

[7] See among others Trebilcock (2001), p. 13.
[8] See Elliott (2000) and Schneuwly (forthcoming). Additional inferences can be drawn from experiences with other political and economic sanctions, see Hufbauer, Schott and Elliott (forthcoming).
[9] For another quantification of humanitarian trade sanctions, see Hussain (2001), who calculated the effects of a 2000% tariff increase on the number of children employed in the South-East-Asian apparel industry.
[10] See e.g. Brown (2001a), S. 98 for vertical and Rodrik (1996), S. 40 for sectoral distributional effects. Theses reasonings are based on the international consensus on the non-acceptance of violations of core labour standards and their use for achieving competitive advantages. Furthermore, unfair trade due to of violations of core labour standards could lead to a so called regulatory chill, in which developing countries do not improve the enforcement of their labour standards because they fear negative consequences for their trade performance, see Chau and Kanbur (2000) and Basu (1999).
[11] Institutional constraints limited increases in wage dispersion in European economies, which lead to rising unemployment among unskilled workers, see e.g. Atkinson (2001).
[12] On the basis of an extensive literature examination Cline (1997), p. 144 estimates that roughly 20% of the increases in wage dispersion can be attributed to international trade.
[13] See among others Belser (2000).

countries, a significant effect of child labour on global trade flows and their distributional consequences could be envisioned.[14] In contrast, Elliott (2001) expects only marginal effects. So far, no quantification of this channel of influence exists.

1.3 A social clause to promote further trade liberalization

Integrating a social clause into the WTO could increase the willingness of industrial countries to continue trade liberalization in labour-intensive industries. Conditioning market access on adherence to internationally set standards might undermine resistance from important interest groups to further liberalization and increase the legitimacy of trade liberalization in the public's eye.[15]

In the Uruguay-round agreeing to integrate intellectual property rights helped developing countries abandoning the Multi-Fibre-Agreement. A similar deal could be envisioned in a new trade round. Developing countries could demand further liberalization in critical sectors to compensate for their agreement to a WTO social clause.[16]

1.4 Scenarios for the effects of humanitarian trade sanctions

The costs of humanitarian trade sanctions differ depending on whether violating countries improve their observance of core standards or not. In the case of non-improvement, these costs consist of a loss of welfare due to trade reduction and trade divergence following trade sanctions in the form of increased tariffs. Such costs of integrating a social clause into the WTO will be quantified in a worst-case scenario. This scenario is based on the assumption that no violating country improves their core labour standards despite the possible trade sanctions. Our primary interest in the calculations is the loss of exports and welfare violating countries will have to endure as a consequence of the increased tariff barriers.[17]

[14] See table 4 for the share of children between 10 and 14 of total labour supply in the regions we have used in this paper.
[15] See Rodrik (1996), p. 37.
[16] See Brown, Deardorff and Stern (2002), p. 15.
[17] Besides the welfare loss, negative consequences of humanitarian trade sanctions also include a moral component. Because of the export reduction due to higher tariffs, productivity and wages for workers and working children are reduced, see Maskus (1997), p. 19. However, these are the workers and children who already suffer from labour standard violations and for whose benefit the trade sanctions are intended. It also has to be kept in mind that some of the companies affected by the trade sanctions might observe core labour standards satisfactorily. Similarly, companies which violate core labour standards but do not produce for export markets are not directly affected by trade sanctions and only suffer indirectly from decreases in aggregate demand, see Kulessa (1995), p. 32. Another disadvantage of trade sanctions is that they could potentially aggravate the problem. In the case of child labour lower wages for working children due to increased trade barriers mean that this income loss has to be compensated by increases in hours worked if the minimum for survival is not met otherwise, see Jafarey and Lahiri (2002). These moral costs of humanitarian trade sanctions do not show up in our calculations but should be taken into consideration when deciding about a humanitarian social clause.

Parallel to the costs for violating countries, a social clause in the WTO bears the danger of being misused for protectionist purposes. This is especially acute for developing countries, which observe core labour standards sufficiently, but could be sanctioned unjustifiably by industrialized countries to protect their domestic industries.[18] Our worst-case reference scenario estimates the additional protection northern countries could gain by misusing a social clause in this way. The relevance of a protectionist misuse depends on one hand on how elastic violating country exports to industrialized markets react to increased tariffs. On the other hand, the protection effect depends on how much of this export reduction is compensated by trade diversion from non-violating developing or industrialized countries.[19] The sum of both effects yields the additional import protection of humanitarian trade sanctions for developed countries.

Our worst-case scenario assumption of no violating country improving their core labour standards observance is highly conservative. The mere threat of removing US-GSP preferences due to labour standard violations caused a sufficient improvement in 47% of the cases in which a petition has been accepted for review.[20] An improvement of core labour standards also has economic effects for violating countries and trade flows. However, these effects are difficult to model because they strongly depend on the specific context within these countries, especially in the case of violations of labour union rights.[21] Since it cannot be foreseen in advance which violating countries will react to the economic pressure of trade sanctions and improve their labour standards, a context-specific quantification is not possible on a global basis.[22]

Therefore we also calculate a best-case scenario concerning child labour in which we assume that child labour will be reduced by half or completely abolished because of the threat of possible trade sanctions. Labour supply in countries affected by child labour is accordingly reduced. Due to this improvement in labour standards, no trade sanctions are applied in this scenario.

Our best-case scenario also indicates how important child labour is for international trade flows and their distributional effects in the developed world. By reducing or fully eliminating

[18] See among others Bhagwati (1995), p 753. It is also purported that demands for integrating labour standards stem solely from protectionist motives, see e.g. Srinivasan (1998), p. 73. While this may be true for some interest groups, the existence of actors in the labour standards debate with humanitarian intentions cannot be disputed, see e.g. Elliott (2001), p. 8.
[19] See Trebilcock and Howse (1999), S. 446.
[20] See Elliott (2000), p. 11.
[21] See Aidt and Tzannatos (2000), p. 119.
[22] Maskus, Rutherford and Selby (1995) quantify the effects of a reduction in information asymmetries as a consequence of improved trade union rights in Mexico.

children's labour supply we simulate how import pressure in OECD countries would develop if the threat of trade sanctions were to achieve significant progress in the struggle against child labour.[23]

When deciding about humanitarian trade sanctions, the resulting welfare losses has to be compared with the benefits of additional trade liberalization developing countries can possibly achieve in return. The effects of such a negotiation result will be estimated a third scenario in which the worst-case scenario is combined with a 20% tariff reduction in non-violating countries.

2 Methodology

For calculating the effects of humanitarian trade sanctions we used the multiregional, calibrated general equilibrium model GTAP, which has been developed by the **G**lobal **T**rade **A**nalysis **P**roject.[24] The GTAP-model has become a standard for quantifying trade-related policy measures both in terms of its structure as well as its database. In contrast to partial equilibrium models GTAP encompasses the whole economy. Therefore links between different sectors as well as regional and economy-wide budget constraints can be considered. Furthermore, the calibration with input-output data ensures that the relative size of different markets is used in calculating the policy effects. While purely theoretical models could overemphasize neglectable effects, calibration of the model enables the researcher to compare the size of different effects and to calculate the sum of all individual effects.

The version 5 of the GTAP-database divides the world into 66 countries and regions and 57 sectors and uses data for 1997.[25] For modelling the effects of policy changes both consumers and producers change their behaviour according to microeconomic optimization. While consumers maximize their utility, producers minimize costs, both leading to a new equilibrium. Changes of prices and quantities are then calculated by comparing both equilibria. However, in reality it could take several years until the new equilibrium is reached. In that case, yearly changes of the variables under scrutiny will be only a fraction of the calculated total.

[23] Contrary to child labour, discrimination in employment reduces labour supply in developing countries. Therefore, the effect on wage dispersion in industrialized countries will be negative, if any is visible, see Martin and Maskus (2001), p. 324 and Busse (2002), while violations of trade union rights have ambiguous effects on labour supply, see Aidt and Tzannatos (2000), p. 199. Therefore, violations of these core labour standards are not considered. Neither are violations of the prohibition of forced labour included due to their limited effects on trade flows and a lack of data, see Kucera (2001a).
[24] See Hertel and Tsigas (1997). For an extensive discussion, see also Lips (2002), p. 5ff.
[25] See Dimaranan and McDougall (2001).

In the GTAP-model the demand side consists of a private household, government demand and savings and is modelled with a Cobb-Douglas function. For maximizing household utility a non-homothetic constant difference of elasticities function (CDE) is used. There is one production sector in each region, in which factors of production and intermediate goods are used on the basis of a Leontief production function, assuming perfect competition and no economies of scale. Substitution of different factors of production and between domestic and imported intermediate goods is done with a constant elasticity of substitution production function (CES). A CES-function is also used to substitute between imports of different regions. Thus, domestic and imported goods are imperfect substitutes (Armington-approach).

The GTAP-model also includes two global institutions. The international transport sector and a global bank, which replicates a global capital market and distributes global savings to fund regional investment projects according to expected returns. The GTAP-model was solved using GEMPACK software.[26]

3 Aggregation and scenarios

3.1 Identification of violating countries

Generally, classification of violating countries could be based on ratification of the relevant ILO convention. But since the ILO has practically no enforcement mechanism, ratification of conventions has only a weak influence on actual observance of labour standards.[27] Some countries are sufficiently observing ILO conventions but are refusing to ratify the corresponding conventions because ILO conventions not only codify aims and standards but also some of the means to achieve the standards.[28] In contrast, other countries regard the ratification of an ILO-convention merely as an act of will while at the same time tolerating large deviations in observance.

Therefore, this paper tries to classify violating countries on the basis of the degree in which core labour standards are actually observed in practice.[29] However, it has to be kept in mind that no universally accepted definition exist of what would be a violation of core standards. Although a consensus exists on their universal applicability, specific details are still unclear.[30]

[26] See Harrison and Pearson (1998).
[27] For empirical evidence, see Flanagan (2002).
[28] For this reason, among others, the USA have only ratified two of the eight ILO core conventions, see Morici and Schulz (2001), p. 30f.
[29] See Kucera (2001a) and Kucera (2001b) for a similar, more detailed approach, in which observance of core trade union rights is classified according to 37 weighted criteria.
[30] See Trebilcock (2001), p. 14.

For example, it is internationally uncontroversial that workers should have the right to form trade unions and to bargain collectively and that the right to strike is an integral element of these rights. But since practically all countries have some form of limitation on the right to strike, it is not clear what kind of restriction would constitute a violation of core standards. In light of today's working reality, similar definitional flexibility exists concerning the freedom of discrimination and also concerning child labour.
Nevertheless, specific criteria for classifying violating countries have been chosen and will be outlined in a somewhat detailed way in order to create a transparent and replicable benchmark for calculating the effects of integrating core labour standards.

For classifying violating countries, it should also be kept in mind that different justifications for integrating a social clause into the world trade order have different implications for its institutional design. While a social clause, which aims to prevent unfair trade or tries to promote further trade liberalization should primarily focus on correcting trade flows, humanitarian trade sanctions should have a broader scope. For humanitarian trade sanctions it is not relevant whether the violation of core standards occurs in export, import competing or non-tradable industries and companies. Such sanctions are not geared towards correcting actual or assumed effects of labour standard violations on import countries but are used to create incentives for political improvements in violating countries.

It is difficult to see why sanctions which try to overcome domestic policy failures and to improve the situation of workers generally should only be applied to countries in which at least part of the violations occur in export sectors.[31] Additionally, such a narrow application of humanitarian trade sanctions would considerably reduce their efficacy. If sanctions on child labour were only applied on violations in export sectors, affected children would simply move to employment opportunities in non-exporting sectors. Assuming fully mobile factors of production and child labour wages in line with productivity, those sanctions would have no effect on exports, wages or welfare. Therefore, no incentives would be created for governments of violating countries to reduce child labour. Including violations in non-tradable sectors is especially acute in the case of child labour because only 5% of all working children in developing countries are employed in export industries.[32]

[31] See Trebilcock (2001), p. 19.
[32] See UNICEF (1997), p. 23

3.2 Freedom of association and right to collective bargaining

For the purpose of this paper observance of the freedom of association and the right to bargain collectively is judged on the basis of four criteria along ILO conventions No. 87 and 98. However, despite using these criteria a remaining rest of uncertainty and subjectivity is unavoidable in deciding which countries to classify as violating countries.

1) Restrictions on the right to form free trade unions

A country is classified as violating according to this criterion if either founding a trade union is significantly impaired by law or in practice or if existing trade unions are heavily controlled by governmental or employer organizations.[33] Only national or sectoral limitations are considered, e.g. in export processing zones. Regulations, which restrict the maximum number of unions per company to one, as is common in Latin American countries or South Korea are not considered as violating as long as these trade unions can act independently.

2) Restrictions on the right to strike

The right to strike in not explicitly included in the ILO conventions No. 87 and 98. However, because of its importance in counterbalancing employer market power it is used as a criterion to judge labour standard observance.[34]

Restrictions on the right to strike are sufficient for classifying a country as violating for the purpose of this paper, if strikes are either prohibited by law or significantly impaired by legal obligations. Since legal obligations on the right to strike exist in practically all countries, we only classify obligations as violating if they are so demanding that the vast majority of strikes can only be conducted illegally and participating workers are systematically prosecuted and punished.[35] A ban on strikes in essential sectors such as defense industries or public services is not sufficient for violating this criterion.[36]

3) Protection of discrimination for trade union members

Both the right to form trade unions as well as their ability to pursue their interests with strikes are limited if participating members have to fear repressions in the form of job loss, impris-

[33] ILO convention No. 87 demands that acceptance of a trade union should not require government registration. However, for our purposes deviations are only counted as violations if the requirement for registration is used in practice to continuously prevent the formation of trade unions.
[34] In addition, the ILO Committee on Freedom of Association regards the right to strike as an element inherent to the freedom of association.
[35] Mandatory "Cooling-off"-periods are not sufficient for classifying a country as violating.

onment or even physical violence without adequate protection by the judicial system. Countries in which widespread repressions have been reported over a sustained period of time are classified as violating countries.

4) Right to bargain collectively

Countries in which the right to bargain collectively either does not exist by law or is severely restricted by government intervention are also classified as violating. Partial limitations for specific companies with pioneer status as in Malaysia are not sufficient.

Overall, a country is classified as violating trade union core labour standards if at least one of these four criteria is violated. Classifications are based on reports of the ILO Committee of Experts on the Application of Conventions and Recommendations concerning observance of the relevant ILO conventions and their analysis in OECD (1996) and OECD (2000).[37] In addition, reports on observance of core labour standards submitted by the International Confederation of Free Trade Unions (ICFTU) since 1998 for the WTO-Trade Policy Review Mechanism have been used.[38] Furthermore, a country is also classified as violating if US-GSP preferences have been removed for violating core trade union rights.[39]

In case a GTAP-region includes more than one country, which are not classified in the same way, the whole region is classified according to the countries that have more inhabitants.[40] An overview of each country's classification based on the four chosen criteria is given in table 15 in the appendix.

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[36] Complaints of the ILO Committee of Experts on the Application of Conventions and Recommendations (CEACR) about a too extensive definition of essential services is not sufficient for a classification as violating.

[37] In OECD (1996), p. 43 observance of core trade union rights in 75 countries is classified on the basis of CEAR and other reports ranging from 1 (full observance in law and practice) to 4 (trade union rights practically non-existent). In OECD (2000) these classifications are updated to reflect new developments. See OECD (1996), p. 61 und OECD (2000), p. 99 for the sources of information used. For the purpose of this paper, all countries in category 4 are automatically classified as violating, while categories 1 and 2 are automatically classified as non-violating.

[38] See ICFTU (several years). In addition ICFTU (2002) is used. However, due to limited amounts of information the reports in ICFTU (2002) only allow for a classification in unambiguous cases.

[39] See Elliott (2000) and Schneuwly (forthcoming) for an evaluation of the success of US-GSP petitions for insufficient labour standards. These results were used in the sense of a worst-case scenario. In case of removal of US-GSP preferences the country is classified as violating. But even if preferences were not removed, countries could be classified as violating based on the ILO or ICFTU reports.

[40] This is the case in the region *Rest of North Africa* in which Egypt and Libya are found not to respect trade union core rights sufficiently while Tunisia observes them correctly and Algeria's situation could not be assessed based on the available information. Since more inhabitants in this region come from violating countries, the whole region is classified as violating trade union core standards. For a detailed overview of the classification of regions with more than one country, see table 15 in the appendix.

3.3 Child labour

Identification of countries, which violate the prohibition of child labour is problematic for two reasons. On one hand, neither child labour nor the worst forms of child labour have been defined sufficiently.[41] On the other hand, sanctioning countries for a high incidence of child labour would be counter productive. A main reason for child labour is poverty and a lack of alternative income sources for children and their families.[42] A strict enforcement of the prohibition of child labour without compensating the resulting loss of income would worsen poverty for these families. But such a compensation would pose a massive financial burden for least developed countries, especially since additional resources for schools and their improvement as well as for enforcement bodies are necessary. Therefore, the prohibition of child labour should be applied on a contextual basis rather than uniformly in an absolute way.[43] Accordingly, appropriate criteria for classifying violating countries should consider whether countries are investing sufficient resources for reducing child labour relative to their state of development.

For an exact simulation of the effects of humanitarian trade sanctions for violations of the prohibition of child labour a detailed assessment of efforts and programs devoted to the elimination of child labour on the basis of appropriate criteria should be performed for each country. However, such an analysis would be beyond the scope of this paper. Thus, this paper tries to go a first step in this direction and classifies all countries as violating the prohibition of child labour in which at least 15% of all children between 10 and 14 are working.[44]

3.4 Forced labour

Violations against the prohibition of forced labour are occurring mainly in two forms. Prison inmates in some countries are working on behalf of private, profit-motivated companies. These violations occur frequently in OECD-countries and are only of marginal economic importance. In addition, they are already covered by Article XX(e) of the GATT.

Forced labour also exists in the form of debt bondage, in which landless workers in developing countries face slavery-like conditions by being indebted to their landlord. This type of

[41] See Brown (2000), p. 8 for an overview of different definitions of exploiting child labour.
[42] See e.g. Jafarey and Lahiri (2001), p. 14.
[43] Hence, ILO convention No. 138 on minimum age for working children mentions exceptions for developing countries, see Trebilcock and Howse (1999), p. 443.
[44] See table 15 in the appendix for the share of children between 10 and 14 who are working. In case a region includes more than one country, classification has been done on the basis of average share of children working, using total population as

employment relationships is restricted to only a few sectors in rural areas, e.g. agriculture in India, and has only a marginal impact on trade flows.[45] In addition, data for this type of forced labour is only sparsely available.[46] Due to this limited availability of data and its marginal causal effects on trade flows violations of forced labour are not considered in this paper.[47]

3.5 Discrimination in employment

The prohibition of discrimination in employment is also not considered in this paper for two reasons. Firstly, discrimination, especially concerning sex, is globally wide spread. Many concerns are raised in the ILO for violations of the relevant ILO conventions No. 100 and 111 in OECD-countries. Furthermore, discrimination is difficult to observe so that appropriate international data is not available.

3.6 Aggregation of countries and sectors

To facilitate calculations the 57 sectors and 66 countries and regions in the GTAP-database are aggregated to 8 sectors and 8 regions. Aggregation of sectors is displayed in table 1 and is done similar to McDougall and Tyers (1997), who used this aggregation to research the influence of increasing trade with developing countries on income distribution in industrialized economies. In this aggregation services and primary products consist of two sectors each.[48] Industrial products are grouped divided in four sectors according to their average factor intensities in industrial countries. Aim of this grouping is maximization of differences in shares factor payments between sectors and minimization of differences within them.[49] For example, while the apparel sector has a high share of labour payments, leather and wood processing are industries with medium labour intensity. Food processing and chemical goods are examples of sectors with low and very low labour intensity, respectively.

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weights. Children's labour supply as a share of total labour supply for the regions used in our GTAP-database aggregation is given in table 4. The data are for 1997 and correspond to the data in the GTAP-database.

[45] See OECD (1996), p. 47.

[46] See Elliott (2001), p. 3.

[47] For similar reasons forced labour is not included in Kucera (2001a), which otherwise is a highly detailed study.

[48] Contrary to McDougall and Tyers (1997) agriculture and mining have been aggregated to only one sector each instead of two.

[49] See McDougall and Tyers (1997), p. 194. See there also for an overview of factor payments in each sector in industrialized countries.

Table 1: Eight sectors

Abbr.	Sector
AGR	Agriculture
MIN	Mining
IHLI	Highly labour-intensive industries
IMLI	Medium labour-intensive industries
IHCI	Highly capital-intensive industries (very low labour intensity)
IMCI	Medium capital-intensive industries (low labour intensity)
SLI	Labour-intensive services
SCI	Capital-intensive services (non-tradable)

OECD member countries are aggregated in three regions (EU, USA and rest of OECD). Former socialist transformation countries form another region (TRANS). Violating countries are aggregated in three regions. While region T includes countries, which violate core trade union rights, region C encompasses countries, whose share of working children is above the threshold. Region TuC includes countries, which violate trade union rights and the prohibition of child labour. Non-violating developing countries are grouped in region DRIT. Table 2 shows regions' shares of global value added and importance of exports.[50]

A detailed overview of the aggregation of all countries and sectors in the GTAP-database is displayed in table 15 and 16 in the appendix.

Table 2: Eight regions

Abbr.	Region	Share of global GDP in %	Export share of production in %
EU	EU	26.8	16[51]
USA	USA	29.8	6
rOECD	Rest of OECD-countries (except Turkey, Mexico, Czech Republic and Hungary)	20.2	10
TRANS	Transformation countries	3.0	14
DRIT	Non-violating developing countries	7.7	17
T	Countries which violate trade union rights	7.5	13
C	Countries which violate the prohibition of child labour	3.5	6
TuC	Countries which violate trade union rights and the prohibition of child labour	1.5	16

Source: Dimaranan and McDougall (2001)

[50] See Dimaranan and McDougall (2001).
[51] This also includes trade among EU countries.

3.7 Scenarios

In this paper a worst-case scenario is calculated with obligatory humanitarian trade sanctions. In this scenario it is assumed that trade sanctions are levied on all exports of all violating countries.

Similar to the classification of violating countries the selection of sanctioned exports in violating countries should not depend on violations in the production of export goods. Instead, sanctioned goods should be chosen as to maximize improvement of core labour standards with minimal costs. Ideally sanctions would be levied in a non-discriminating fashion, i.e. on all exports of all violating countries. Such obligatory trade sanctions would prevent the improvement of human rights to be influenced or captured by protectionist or other political interests in importing countries. A limitedly facultative social clause would thus minimize the risk of protectionist misuse.[52] Furthermore, political and economic pressure for violating governments would be increased by widely scoped trade sanctions.

However, an obligatory social clause would be more difficult to implement politically. It would transform the WTO into a crusader for core labour standards.[53] In light of the existing resistance against a social clause among developing countries a version with more facultative elements would be preferable.[54]

No natural benchmark exists for determining the extent and level of humanitarian trade sanctions. The integration of core labour standards for humanitarian reasons would be a novelty in the WTO because it is not indented to improve the efficiency of world trade regulation. Instead, humanitarian trade sanctions are aimed at improving goals, which only have an indirect connection to world trade. Therefore, the level of humanitarian trade sanctions cannot be oriented on the impact of labour standard violations on trade flows as is done with antidumping duties.[55] In addition to measurement problems associated with this kind of sanctions, it would be more appropriate to chose trade sanctions in order to minimize costs of improving labour standard enforcement. Furthermore, the principle of proportionality in international public law demands that the level of trade sanctions is in line with the extent of human rights viola-

[52] See Rollo and Winters (2000), p. 573. The danger of protectionist misuse with facultative sanctions is also highly unevenly distributed since rich nations can use trade sanctions more effectively for pursuing their own interests, see Cullen, H. (1999), p. 25. In order to prevent the use of humanitarian sanctions for protectionist motives, Trebilcock (2001), p. 23 recommends to check the discriminatory character of sanction on the basis of the chapeau in Article XX of the GATT according to the structure of production in the importing country.
[53] See Trebilcock (2001), p. 21.
[54] See for a similar conclusion Reuss (1999), p. 136.
[55] See Hauser and Schanz (1995), p. 80.

tions.[56] A complete prohibition of imports similar to prison labour products according to Article XX(e) of the GATT would hardly be apropriate in light of the economic consequences for violating countries and the extent of the observed violations of core labour standards in these countries.[57]

Because of the missing benchmark for trade sanctions with humanitarian intentions this paper calculates a worst-case scenario in which tariffs in non-violating countries on imports from violating countries are raised by 50% (scenario 1).[58]

This scenario will be calculated in three versions: tariff increases for countries which violate trade union rights (scenario 1a), tariff increases for countries which violate the prohibition of child labour (scenario 1b) and tariff increases for violating countries which violate either trade union rights or the prohibition of child labour or both core labour standards (scenario 1c). Table 3 gives an overview of all scenarios.

Table 3: Definition of scenarios

Scenario	No.	Definition
Worst-case scenario	1a	Tariff increase by 50 % in non-violating countries for regions T and TuC
	1b	Tariff increase by 50 % in non-violating countries for regions C and TuC
	1c	Tariff increase by 50 % in non-violating countries for regions T, C and TuC
Best-case scenario (impact of child labour on trade flows)	2a	Reduction of child labour by 50 %
	2b	Reduction of child labour by 100 %
Worst-case scenario plus additional trade liberalization	3	Reductions of tariffs in non-violating countries by 20% and tariff increase in non-violating countries by 20% for regions T, C and TuC (equals a 50% higher tariff for violating countries)

We also calculate a best-case scenario for the effects of violations of the prohibition of child labour. In the calculations of this scenario we assume the total labour supply is reduced by children's labour supply because the enforcement of the prohibition of child labour is improved. While in scenario 2a child labour is reduced by 50%, in scenario 2b child labour is completely eliminated. Total labour supply is accordingly reduced in all regions in which child labour is observed today (DRIT, T, C und TuC), irrespective of whether the region has been classified as violating the prohibition of child labour because more than 15% of children in that region are working. Hence, this scenario also calculates the impact of global child labour on international trade flows and can assess the justification for international core labour standards based on unfair trade.

[56] See Reuss (1999), p. 164.
[57] See Stirling (1996), p. 43.

Due to a lack of available data only working children between 10 and 14 years can be considered. Table 4 gives children's labour supply as a share of total labour supply in the regions constructed for calculating the scenarios.[59]

Table 4: Share of child labour

Region	Share of child labour in %
EU	0
USA	0
rOECD	0
TRANS	0
DRIT	2.6
T	1.7
C	4.6
TuC	7.8

Source: Our calculations, ILO (1996), United Nations (1997, 2001a, 2001b), World Bank (2000).

One shortcoming of the available data is that working children below 10 are not considered. However, children of this age generally work much less and also have a significantly lower productivity. A more disturbing lack of official statistics is the frequent underreporting of child labour due to insufficient ressources or political reasons. These underreportings can be sizeable. While ILO-figures for Vietnam yield 8% child labour in 1997, the Vietnam Living Standard Survey based on 4.000 households estimates that 14% of all children between 6 and 15 work outside of their household while further 25% work in their own family's business or in agriculture.[60]

In order to partly compensate these shortcomings, we assume in this scenario that all working children are working full time with average productivity.[61] This assumption is highly conservative because working children usually have less than average productivity and are often working less than full time. On the basis of case study evidence, Hussain (2001) assumes that working children only create half of the value per worker compared to adults.

Finally, scenario 3 is designed to estimate the effects of the third reasoning for integrating core labour standards, according to which adding a social clause to the WTO can help liber-

[58] Whalley and Wigle (1998) calculate a base scenario with a tariff increase of 35% and then vary tariff increases between 25% and 50%. Sensitivities of the rate of tariff increases have been calculated and the result to depend linearly on the tariff increase.
[59] Data are for 1998 (total population), 1997 (share of working children) and 1995 (share of total population working). In case of missing data, the last available year has been used.
[60] See Edmonds and Pavcnik (2001).
[61] In version 5 of the GTAP-database skilled as well as unskilled labour are used as inputs. However, since neither prices nor quantities for both categories are available individually (only total labour payments), is not possible to deduct child labour only from unskilled labour supply.

alization of world trade. Thus, the third scenario combines humanitarian trade sanctions with a general tariff cut in a new world trade round. Tariffs in non-violating countries are cut by 20%, while non-violating countries still impose a 50% additional tariff for violating country imports. Tariffs for exports of countries, which violate either trade union rights or the prohibition of child labour (T, C and TuC) are now 120% of the former value.[62]

4 Results

Table 5 gives an overview of the percent change of welfare in the calculated scenarios and regions. Multiplying this change with the initial income of each region yields the equivalent variation in USD in prices of 1997 (table 6). The equivalent variation is the amount of money necessary for a monetary transfer, which would yield the initial welfare level in each region.

Table 5: Change of welfare (equivalent variation) in percent

	Scenario 1			Scenario 2		Scenario 3
	Sc 1a	Sc 1b	Sc 1c	Sc 2a	Sc 2b	
EU	0.05	0.02	0.06	0.01	0.01	0.06
USA	0.05	0.02	0.05	0.00	0.00	0.03
rOECD	0.03	0.02	0.04	0.00	0.00	0.12
TRANS	0.01	0.02	0.02	-0.01	-0.01	0.24
DRIT	0.07	0.03	0.08	-0.63	-1.27	0.12
T	-0.86	0.00	-0.82	-0.50	-1.01	-0.44
C	0.04	-0.72	-0.54	-1.29	-2.60	-0.32
TuC	-0.77	-1.02	-0.73	-1.59	-3.23	-0.46

Source: Own calculations

Table 6: Change of welfare (equivalent variation) in USD millions

	Scenario 1			Scenario 2		Scenario 3
	Sc 1a	Sc 1b	Sc 1c	Sc 2a	Sc 2b	
EU	3523	1733	4125	420	847	4305
USA	3420	1377	3925	102	211	2256
rOECD	1477	863	1898	78	161	6564
TRANS	82	154	130	-52	-102	1819
DRIT	1452	562	1559	-12701	-25499	2496
T	-17388	5	-16474	-10139	-20324	-8968
C	333	-6554	-4860	-11734	-23617	-2887
TuC	-3011	-3954	-2849	-6195	-12577	-1773
Total	-10111	-5816	-12545	-40221	-80900	3812

Source: Own calculations

[62] Tariff in violating countries are not changed in this scenario.

Global trade flows have not changed by much in all of the scenarios. In table 7 percent changes of regional export value are given for each scenario and in table 8 changes of imports are displayed.

Table 7: Changes of exports in percent

	Scenario 1			Scenario 2		Scenario 3
	Sc 1a	Sc 1b	Sc 1c	Sc 2a	Sc 2b	
EU	0,1	0,1	0,1	-0,1	-0,2	0,3
USA	-0,4	-0,1	-0,4	-0,2	-0,4	0,8
rOECD	-0,3	-0,0	-0,3	-0,2	-0,4	1,1
TRANS	-0,0	0,0	-0,0	-0,2	-0,3	2,0
DRIT	-0,2	-0,0	-0,2	-0,4	-0,9	1,2
T	-3,6	-0,1	-3,5	-0,3	-0,6	-1,9
C	-0,4	-5,1	-4,1	0,5	1,0	-2,0
TuC	-2,8	-3,4	-2,6	-0,7	-1,3	-1,6

Source: Own calculations

Table 8: Changes of imports in percent

	Scenario 1			Scenario 2		Scenario 3
	Sc 1a	Sc 1b	Sc 1c	Sc 2a	Sc 2b	
EU	0,1	0,1	0,2	-0,0	-0,0	0,3
USA	-0,1	0,1	0,0	-0,0	-0,1	0,6
rOECD	-0,3	0,1	-0,2	-0,0	-0,1	1,5
TRANS	0,0	0,1	-0,0	-0,0	-0,0	3,2
DRIT	-0,2	-0,0	-0,2	-0,0	-1,1	1,4
T	-4,3	-0,1	-4,1	-0,4	-0,9	-2,4
C	-0,1	-6,4	-4,8	-1,6	-3,2	-3,0
TuC	-3,2	-3,9	-3,0	-1,2	-2,5	-2,0

Source: Own calculations

4.1 Scenario 1

The worst-case scenario 1 shows the costs of humanitarian trade sanctions for violating countries and their additional import protection for industrialized countries.

The tariff increase of 50% in scenario 1 decreases violating country exports by only 3-5% on average (table 7). However, it has to be kept in mind that tariffs in industrial countries are already very low for many products so that even a tariff increase of 50% does not change their prices relative to domestic goods significantly.[63] Welfare in violating countries is reduced by 0.5-1% on average (table 5). On the basis of experiences with the social clause in the US-GSP we can conclude that even a much smaller effect yields significant improvements in of core labour standard enforcement. The mere threat of removal of GSP-trade preferences on exports

amounting to 0.5-0.6% of GDP were sufficient to achieve satisfactory improvements in almost half of the countries under review.[64] Since a removal of US-GSP-trade preferences would not completely eliminate exports to the US and also because resources formerly needed to produce exports for the US market would be reallocated, one can safely assume that the resulting welfare loss of cutting GSP-trade preferences would be much smaller than the loss of global humanitarian trade sanctions as calculated in this paper.[65]

Welfare of non-violating developing and industrialized countries rises slightly in all three versions of scenario 1. Reasons include reduced competition in export markets and tariff rates moving closer to optimum tariff levels in some sectors.

Due to increased tariffs, imports of OECD member countries from violating countries decrease by almost 4% (scenarios 1a and 1c, table 9) and 2% (scenario 1b). However, this amounts to only 0.5% and 0.1% of total imports in OECD countries. In addition, significant trade diversion is occurring as increased imports from non-violating developing and developed countries compensate for this import reduction. As a consequence, imports in OECD countries from all non-OECD countries decrease by only 1.5% (scenarios 1a and 1c) and 0.1% (scenario 1b). As a share of total OECD import this amounts to only 0.4% (scenario 1a und 1c) and less than 0.1% (scenario 1b). Furthermore, total imports in all OECD countries even increase in scenarios 1b and 1c due to additional trade diversion and remain nearly constant in scenario 1a.

Table 9: Change of imports in percent

	Scenario 1a		Scenario 1b		Scenario 1c	
	%	As a share of total OECD imports	%	As a share of total OECD imports	%	As a share of total OECD imports
OECD imports from violating countries	-3,9	-0,5	-2,0	-0,1	-3,8	-0,5
OECD imports from non-OECD countries	-1,4	-0,4	-0,1	-0,0	-1,5	-0,4
Total OECD imports		-0,0		0,1		0,1

Source: Own calculations

Since imports in OECD countries even in this worst-case scenario remain practically unchanged, a WTO social clause could on aggregate not serve as a useful tool of import protection. Therefore, the refusal of developing countries to integrate core labour standards into the

[63] See table 10 for average tariff rates in the USA as a representative example.
[64] See Schneuwly (forthcoming), p. 15.

WTO, which is based mainly on this fear, is largely unfounded. Even if one assumes that protectionism is the main motive for industrialized countries' demands for connecting labour standards and trade, those motives should not play any role in deciding the labour standards debate since they are based on a wrong understanding of the economic effects of a social clause. Hence, industrial countries generally have no incentives to levy humanitarian trade sanctions wrongfully on countries with a satisfactory labour standard record to increase protection for their domestic industries. Such a protectionist misuse of a social clause would not lead to import reduction for OECD countries since reduced imports from the sanctioned country would be compensated by increased trade with other trading partners.

It has to be kept in mind that all changes of OECD imports mentioned so far are based on the sum of changes in all sectors. But sectoral OECD imports also change only marginally (table 10). In scenario 1c, even imports in the two sectors with the highest tariffs, IHCI and AGR, are reduced by only 1.3% and 0.9%, respectively.[66] However, averaging of tariffs in the GTAP-aggregation cuts off peak tariffs.[67] Especially in agriculture, textiles and apparel, significant trade barriers still exist which are far above average. Therefore, most of the effects of humanitarian trade sanctions are concentrated on a few goods with peak tariffs, for which an import protection effect of such sanctions could potentially exist, although they would not show up in our results.

Table 10: Sectoral change of OECD imports in percent

Sector	Tariffs in the USA (in %)	Scenario 1a	Scenario 1b	Scenario 1c
AGR	10,1	-0,7	-0,1	-0,9
MIN	0,3	-0,3	-0,0	-0,3
IHLI	2,2	0,1	0,2	0,2
IMLI	4,4	-0,4	0,0	-0,4
IHCI	13,7	-1,1	-0,5	-1,3
IMCI	2,3	0,1	0,2	0,2
SLI	0,0	0,5	0,3	0,7

Source: Own calculations

The increase of total imports in OECD countries in scenarios 1b and 1c despite an increase in tariffs for some trading partners seems to be counter intuitive. The overcompensation of trade reduction by tariff diversion can largely be explained due to changes in factor allocation. A tariff increase by 50% rises import prices of goods with high initial tariffs relative to products

[65] Welfare in GTAP's initial equilibrium is equal to income. Compared to GDP only depreciation is not included, see e.g. Lips (2002), p. 98.
[66] In table 10 average sectoral tariffs in the USA are given. Tariffs in other OECD regions differ somewhat, but the ranking of sectoral tariff rates is identical.

with low initial tariffs. This change of relative import prices induces a shift of resources in developing countries out of sectors with high initial tariffs (IHLI, IMCI and SLI), while a reverse trend can be observed in violating countries. (table 11).[68] In addition, reduced incomes in violating countries also lead to a decrease in factor prices. Hence, imports in developed countries rise in low-tariff sectors (table 10), while OECD imports in other sectors decline due to the tariff increases for violating countries. Since total trade flows only change marginally, the factor reallocation effect is able to overcompensate the trade reducing effect of tariff increases in these two scenarios.

Table 11: Sectoral changes of production in scenarios 1c in percent

Sector	EU	USA	rOECD	TRANS	DRIT	T	C	TuC
AGR	0,4	0,4	0,8	0,3	0,2	-0,6	-0,5	-0,7
MIN	-0,5	-0,3	-0,5	-0,3	-0,2	0,7	1,1	0,4
IHLI	0,1	-0,1	-0,1	0,3	0,1	0,4	0,6	1,3
IMLI	0,2	0,2	0,1	0,3	-0,0	-0,3	0,1	-0,4
IHCI	0,8	0,3	0,6	0,4	0,3	-1,2	-1,1	-3,4
IMCI	-0,1	-0,2	-0,2	0,0	-0,1	0,8	0,3	1,5
SLI	-0,1	-0,0	-0,0	-0,1	-0,1	0,1	0,0	0,3
SCI	0,0	0,0	0,0	0,0	0,1	-0,6	-0,3	-0,5

Source: Own calculations

4.2 Scenario 2

Scenario 2 as a best-case version of humanitarian trade sanctions allows to check the robustness of the results of scenario 1 concerning the assumptions about country government behaviour. In addition, scenario 2 estimates the empirical relevance of global child labour on trade flows and their distributional consequences.

The effects of reducing child labour on global trade flows are infinitesimal. Even in the unrealistic case of total abolishment of child labour (scenario 2b), exports of developing countries are reduced by only 0.6-1.3% on average (table 7). With a 50% reduction of child labour (scenario 2a) total exports of DRIT, T, C and TuC decrease by only 0.3-0.7%. Accordingly, total imports in OECD countries fall only marginally. In both scenarios total imports decline by less than 0.1%. Even imports in OECD countries originating in all regions affected by child labour decrease only by 0.1% and 0.3% (table 12).

[67] This is aggravated by the fact that high tariff reduce corresponding imports so that peak tariffs are underrepresented when average tariff rates are used, see Rodrik and Rodriguez (2000).
[68] See for tables 18-23 in the appendix for changes of value of production for each of the scenarios.

Table 12: Changes of imports in percent

	Scenario 2a	Scenario 2b
Imports in OECD countries from developing countries (without TRANS)	-0,1	-0,3
Total OECD imports	-0,0	-0,0

Source: Own calculations

Such slight effects are not surprising in light of the low shares of child labour of total labour supply (table 4) and in light of the low share developing country exports contribute to total world trade (table 2).

Furthermore, it can be expected that these marginal trade effects only have a miniscule effect on income distribution in industrialized countries. Even a complete enforcement of child labour would not help in correcting unwanted distributional consequences since relative prices of unskilled labour compared to skilled labour or capital change less than 0.1% (table 13).[69] An integration of core labour standards because of unfair trade outcomes cannot be recommended with respect to child labour on the basis of these findings. In addition, these changes are so small that even a significant underestimation of children's economic contribution in developing countries would not change these conclusions.

Table 13: Changes of factor prices in scenario 2b in percent

	EU	USA	rOECD
Land	-0,8	-1,0	-0,7
Unskilled labour	-0,0	0,0	0,0
Skilled labour	0,0	0,0	0,0
Capital	0,0	0,0	0,0

Source: Own calculations

A second implication of the low trade changes in scenario 2 is a confirmation of scenario 1 outcomes. In this worst-case scenario OECD imports hardly changed under the assumption that violating countries do not improve their enforcement of core labour standards despite sanctions being levied on their imports. Now, the best-case assumption of all countries improving their enforcement of the prohibition of child labour also leads to only miniscule trade effects in developed countries. Regarding child labour it can therefore be confirmed that a WTO social clause is of hardly any use as a protectionist instrument for northern economies.

In contrast, welfare effects of a reduction of child labour are significant. Complete elimination of child labour leads to a loss of welfare of 1.0-3.2% (table 5). To compensate for this loss

[69] In contrast, factor prices in developing countries change significantly, see table 17 in the appendix.

approximately 80 billion USD would need to be transferred to developing countries (table 6).[70] Still 40 billlion USD were needed if child labour is reduced by 50%.

The reduction of welfare in scenario 2a and 2b consists of two effects. The main effect is the decrease in production through a reduced supply of labour since some or all of the children are no longer working. Additionally, differences in factor supply between countries with and without child labour are reduced. This reduces efficiency gains from international trade. However, the loss of welfare due to labour supply reduction has to be compared with the utility increase of children not working any more, which is not included in our calculations. This utility gain compensates for the decrease in production at least partly. But if one accepts the universal consensus on the non-acceptance of child labour, this utility gain would more than compensate the production loss in utility terms. Only the reduced welfare from international trade between countries with more similar factor supplies would count as the true costs of abolishing child labour. These costs can be expected to account only for a marginal share of the total welfare loss in the scenarios 2a and 2b. The equivalent variation for these scenarios nevertheless gives a rough impression of the size of the monetary transfer necessary in developing countries to compensate child labourers for their loss of income if the prohibition of child labour should be fully enforced without aggravating poverty.

4.3 Scenario 3

Scenario 3 serves to evaluate demands to integrate core labour standards to further promote market access for developing countries. The welfare effects of a simultaneous reduction of global tariffs by 20% and introduction of trade sanctions for violating countries are positive globally (table 6). Therefore, a relatively small additional liberalization compared to the level of trade sanctions suffices to more than compensate the welfare loss of a humanitarian social clause even in a worst-case scenario. This ratio could become even better if liberalization is focussed on critical sectors with high trade barriers in industrialized countries.

As can be expected, these welfare effects in scenario 3 are distributed very unevenly across regions. Violating countries suffer from a welfare loss of 13.6 bill. US$ due to the 20% tariff increase. Compared to the corresponding scenario 1c, in which trade sanctions are raised on the basis of initial tariffs this is only half as much. Similarly, welfare gains for non-violating developing and transformation countries are higher than in scenario 1c due to globally reduced market entry barriers. These potential welfare gains could support violating countries

[70] In prices of 1997.

trying to improve in financing better enforcement and adjustment measures such as more and better schools and income compensation schemes for child labourers.[71]

Reduced trade barriers for non-violating countries also improve their trade flows compared to the reference scenario 1c. Exports of non-violating developing and transformation countries rise on average by 1.4% (table 14). In contrast, violating countries' exports are reduced by 1.8% on average due to the 20% tariff rise. Their imports also fall since income has been lowered. Therefore, scenario 3 combines negative incentives for violating countries with positive incentive for non-violating countries or violating countries willing to improve their labour standard record.

Table 14: Change of trade flows in scenario 3 in percent

Region	Exports	Imports
OECD countries	0,6	0,6
Non-violating developing or transformation countries	1,4	1,9
Violating countries	-1,8	-2,4

Source: Own calculations

5 Conclusions

Quantification of the effects of a possible humanitarian social clause shows in a worst-case as well as in a best-case scenario that integration of core labour standards into the WTO will not shield industrialized countries off rising import pressure from developing countries. Such a social clause would reduce imports from violating countries due to trade sanctions or due to decreases in labour supply, but this will be compensated by additional imports from non-violating developing or industrialized countries. Against this background, voicefully raised concerns about protectionist effects of a social clause appear unfounded in their general claim.

Also, quests for integrating core social standards into the world trade system in order to correct unfair trade flows and their distributional consequences cannot be justified on the basis of our analysis. Changes of trade flows after child labour has been eliminated or reduced by 50% are so marginal that effects on relative wages are too small to be observable.

According to our calculations, tariff increase of 50% would yield sufficient incentives for a significant number of violating countries to substantially improve enforcement of core labour standards. The decision of whether these improvements are worth the welfare loss for non-

[71] See Brown (2001b) for an overview of such schemes.

improving violating countries is a value judgement for which an international consensus is needed. It has to be kept in mind, however, that integrating a social clause could potentially enhance trade liberalization, thus increasing welfare for non-violating or enforcement-improving countries and limiting the costs for non-improving countries.

In light of these possible trade liberalization effects and a limited danger of protectionist mis-use a multilateral humanitarian social clause could be an effective instrument for furthering the century-long global quest for better worker rights.

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Appendix

Table 15: Classification of violating countries

No.	Region	Country	Popula-tion (in Mill.)	Violation of core trade union rights	Child labour (in %)	Average child labour (in %)	Aggre-gation
1	Australia	Australia	18,7		0	0	rOECD
2	New Zealand	New Zealand	3,8		0	0	rOECD
3	China	China	1.255,7	A, S, K	10	10	T
4	Hong Kong	Hong Kong	7,0		0	0	rOECD
5	Japan	Japan	126,4		0	0	rOECD
6	Korea	Korea, Republic of	46,4		0	0	rOECD
7	Taiwan	Taiwan	n.a.		0	0	rOECD
8	Indonesia	Indonesia	202,9	S, D	9	9	T
9	Malaysia	Malaysia	22,1		3	3	DRIT
10	Philippines	Philippines	75,1		7	7	DRIT
11	Singapore	Singapore	3,9		0	0	DRIT
12	Thailand	Thailand	61,2	A, S	15	15	TuC
13	Vietnam	Vietnam	77,6	A	8	8	T
14	Bangladesh	Bangladesh	124,8	A, D	29	29	TuC
15	India	India	970,9		13	13	DRIT
16	Sri Lanka	Sri Lanka	18,8		2	2	DRIT
17	Rest of South Asia	Bhutan	2,0	n.a	n.a.	21	TuC
		Maldives	0,3	A, K	n.a.		
		Nepal	21,8		44		
		Pakistan	131,5	A, D	17		
18	Canada	Canada	30,2		0	0	rOECD
19	United States of America	American Samoa	0,1	n.a.	n.a.	0	USA
		Guam	0,1	n.a.	n.a.		
		Northern Mariana Islands	0,1	n.a.	n.a.		
		United States of America	270,6		0		
20	Mexico	Mexico	95,8		6	6	DRIT

A) Violation of freedom of association
S) Violation of the right to strike
D) Insufficient protection of union members for discrimination
K) Violation of the right for collective bargaining

No.	Region	Country	Population (in Mill.)	Violation of core trade union rights	Child labour (in %)	Average child labour (in %)	Aggregation
21	Centr. America and Caribbean	Anguila	0,0	n.a.	n.a.	11	T
		Antigua & Barbuda	0,1		n.a.		
		Aruba	0,1	n.a.	n.a.		
		Bahamas	0,3		n.a.		
		Barbados	0,3		n.a.		
		Belize	0,2	n.a.	n.a.		
		Cayman Islands	0	n.a.	n.a.		
		Costa Rica	3,3	n.a.	5		
		Cuba	11,1	A,S,K	0		
		Dominica	0,1		n.a.		
		Dominican Republic	8,1		15		
		El Salvador	6,0	n.a.	15		
		Grenada	0,1		n.a.		
		Guatemala	10,8	D	15		
		Haiti	7,6	A, D, K	24		
		Honduras	6,2		8		
		Jamaica	2,5		0		
		Netherlands Antilles	0,2	n.a.	n.a.		
		Nicaragua	4,8	A, K	13		
		Panama	2,8		3		
		Saint Kitts and Nevis	0,0		n.a.		
		Saint Lucia	0,1		n.a.		
		Saint Vincent and Grenadines	0,1	A, K	n.a.		
		Trinidad and Tobago	1,3		0		
		Virgin Islands, British	0,1	n.a.	n.a.		
22	Colombia	Colombia	36,7	D	6	6	T
23	Peru	Peru	24,8		2	2	DRIT
24	Venezuela	Venezuela	23,2		1	1	DRIT
25	Rest of Andean Pact	Bolivia	7,9		13	8	DRIT
		Ecuador	12,2		5		
26	Argentina	Argentina	36,1		4	4	DRIT
27	Brazil	Brazil	161,8		15	15	C
28	Chile	Chile	14,8		0	0	DRIT
29	Uruguay	Uruguay	3,3		2	2	DRIT

No.	Region	Country	Population (in Mill.)	Violation of core trade union rights	Child labour (in %)	Average child labour (in %)	Aggregation
30	Rest of South America	Guyana	0,8	n.a.	n.a.	7	T
		Paraguay	5,2	D	7		
		Suriname	0,4		n.a.		
31	Austria	Austria	8,1		0	0	EU
32	Belgium	Belgium	10,2		0	0	EU
33	Denmark	Denmark	5,3		0	0	EU
34	Finland	Finland	5,1		0	0	EU
35	France	France	58,8		0	0	EU
		French Guiana	0,2	n.a.	n.a.		
		Martinique	0,4	n.a.	n.a.		
		Reunion	n.a.	n.a.	n.a.		
36	Germany	Germany	82		0	0	EU
37	United Kingdom	United Kingdom	58,6		0	0	EU
38	Greece	Greece	10,5		0	0	EU
39	Ireland	Ireland	3,7		0	0	EU
40	Italy	Italy	57,4		0	0	EU
41	Luxembourg	Luxembourg	0,4		0	0	EU
42	Netherlands	Netherlands	15,7		0	0	EU
43	Portugal	Portugal	10,0		2	2	EU
44	Spain	Spain	39,4		0	0	EU
45	Sweden	Sweden	8,8		0	0	EU
46	Switzerland	Switzerland	7,1		0	0	rOECD
47	Rest of EFTA	Iceland	0,3		0	0	rOECD
		Liechtenstein	0,0		0		
		Norway	4,4		0		
48	Hungary	Hungary	10,1		0	0	Trans
49	Poland	Poland	38,7		0	0	Trans
50	Rest of Central European Ass.	Bulgaria	8,3		0	0	Trans
		Czech Republic	10,3		0		
		Romania	22,5		0		
		Slovakia	5,4		0		
		Slovenia	2,0		0		

No.	Region	Country	Population (in Mill.)	Violation of core trade union rights	Child labour (in %)	Average child labour (in %)	Aggregation
51	Former Soviet Union	Armenia	3,5	n.a.	0	0	Trans
		Azerbaijan	7,7	n.a.	0		
		Belarus	10,2	A,K	0		
		Estonia	1,4	n.a.	0		
		Georgia	5,1	n.a.	0		
		Kazakhstan	15,1		0		
		Kyrgyzstan	4,8		0		
		Latvia	2,4		0		
		Lithuania	3,7		0		
		Moldova, Republic of	3,6	n.a.	0		
		Russian Federation	146,5		0		
		Tajikistan	6,0	n.a.	0		
		Turkmenistan	4,9	n.a.	0		
		Ukraine	50,5		0		
		Uzbekistan	24,0	n.a.	0		
52	Turkey	Turkey	63,4		22	22	C
53	Rest of Middle East	Bahrain	0,6	A, S, D, K	n.a.	5	T
		Iran, Islamic Republic of	61,6	A, S	4		
		Iraq	21,8	A, S, D, K	3		
		Israel	6,0		0		
		Jordan	6,3		0		
		Kuwait	2,0	S	0		
		Lebanon	3,2	n.a.	0		
		Oman	2,1	A, S, K	0		
		Qatar	0,6	A, K	n.a.		
		Saudi Arabia	20,2	A, S, K	0		
		Syrian Arab Republic	15,6	A, S, K	4		
		United Arab Emirates	2,7	A, S, K	0		
		Yemen	17,1		20		
54	Morocco	Morocco	27,8	S, D	4	4	T
55	Rest of North Africa	Algeria	29,8	n.a.	1	6	T
		Egypt	66,0	A, S, K	10		
		Libyan Arab Jamahiriya	5,3	A, S	0		
		Tunisia	9,3		0		
56	Botswana	Botswana	1,6		16	16	C

No.	Region	Country	Popula-tion (in Mill.)	Violation of core trade union rights	Child labour (in %)	Average child labour (in %)	Aggre-gation
57	Rest of S. African Cust. Union	Lesotho	2,1	S,D	22	2	DRIT
		Namibia	1,7		20		
		South Africa	42,1		0		
		Swaziland	1,0		n.a.		
58	Malawi	Malawi	10,3		34	34	C
59	Mozambique	Mozambique	16,9		33	33	C
60	Tanzania	Tanzania, United Republic of	32,1		38	38	C
61	Zambia	Zambia	8,8		16	16	C
62	Zimbabwe	Zimbabwe	12,7		28	28	C
63	Other Southern Africa	Angola	12,1		27	25	C
		Mauritius	1,1		3		
64	Uganda	Uganda	21,0	S, D	45	45	TuC

No.	Region	Country	Population (in Mill.)	Violation of core trade union rights	Child labour (in %)	Average child labour (in %)	Aggregation
65	Rest of Sub-Saharan Africa	Benin	6,0		27	32	TuC
		Burkina Faso	10,7		48		
		Burundi	6,3	n.a.	49		
		Cameroon	14,3	A	24		
		Cape Verde	0,4	n.a.	n.a.		
		Central African Republic	3,5		30		
		Chad	7,3		38		
		Comoros	0,7	n.a.	38		
		Congo	2,8	n.a.	26		
		Cote d'Ivoire	14,3	n.a.	20		
		Djibouti	0,6	A,D	n.a.		
		Equatorial Guinea	0,4	A,K	n.a.		
		Eritrea	3,6	n.a.	39		
		Ethiopia	59,9		42		
		Gabon	1,2		17		
		Gambia	1,2	n.a.	36		
		Ghana	19,1	S, D	13		
		Guinea	7,3		33		
		Guinea-Bissau	1,2	n.a.	38		
		Kenya	29,0	A, D	40		
		Liberia	2,7	A, K	n.a.		
		Madagascar	15,1	n.a.	35		
		Mali	10,7		53		
		Mauritania	2,5	n.a.	23		
		Mayotte	n.a.	n.a.	n.a.		
		Niger	10,1		45		
		Nigeria	106,4	A, D	25		
		Rwanda	6,6	n.a.	42		
		Sao Tome and Principe	0,1	n.a.	n.a.		
		Senegal	9,0		30		
		Seychelles	0,1	n.a.	n.a.		
		Sierra Leone	4,6	n.a.	15		
		Somalia	9,2	n.a.	n.a.		
		Sudan	28,2	A, K	29		
		Togo	4,4	n.a	28		
		Zaire	49,1	D	29		

No.	Region	Country	Population (in Mill.)	Violation of core trade union rights	Child labour (in %)	Average child labour (in %)	Aggregation
66	Rest of World	Afghanistan	21,3	n.a.	n.a.	13	T
		Albania	3,8	n.a.	1		
		Andorra	0,1	n.a.	n.a.		
		Bermuda	0,1	n.a.	n.a.		
		Bosnia and Herzegovina	4,2		0		
		Brunei	0,3	A	n.a.		
		Cambodia	10,7	n.a.	24		
		Croatia	4,6		0		
		Cyprus	0,7	n.a.	n.a.		
		Faroe Islands	0,0	n.a.	n.a.		
		Fiji	0,8		n.a.		
		French Polynesia	0,2	n.a.	n.a.		
		Gibraltar	0,0	n.a.	n.a.		
		Greenland	0,1	n.a.	n.a.		
		Guadeloupe	0,4	n.a.	n.a.		
		Kiribati	0,1	n.a.	n.a.		
		Lao People's Dem. Republic	5,2	A, S, K	26		
		Macau	n.a.	n.a.	n.a.		
		TFYR of Macedonia	2,0	n.a.	0		
		Malta	0,4		n.a.		
		Marshall Islands	0,1	n.a.	n.a.		
		Micronesia, Federated States of	0,1	n.a.	n.a.		
		Monaco	0,0	n.a.	n.a.		
		Mongolia	2,4	n.a.	2		
		Myanmar	44,0	A	24		
		Nauru	0,0	n.a.	n.a.		
		New Caledonia	0,2	n.a.	n.a.		
		Korea, Dem. People's Rep. of	23,3	A	0		
		Papua New Guinea	4,6		18		
		San Marino	0,0	n.a.	n.a.		
		Solomon Islands	0,4		n.a.		
		Tonga	0,1	n.a.	n.a.		
		Tuvalu	0,0	n.a.	n.a.		
		Vanuatu	0,2	n.a.	n.a.		
		Western Samoa	0,2	n.a.	n.a.		
		Yugoslavia	10,6	n.a.	0		

Sources: OECD (1996, 2000), World Bank (2000), United Nations (2001b), ICFTU (several years), ICFTU (2002), Elliott (2000), Schneuwly (forthcoming)

Table 16: Aggregation of sectors

Sector	Abbr.	Sector	Abbr.
Agriculture	AGR	Paddy rice	PDR
		Wheat	WHT
		Cereal grains nec	GRO
		Vegetables, fruit, nuts	V_F
		Oil seeds	OSD
		Sugar cane, sugar beet	C_B
		Plant-based fibers	PFB
		Crops nec	OCR
		Bovine cattle, sheep and goats, horses	CTL
		Animal products nec	OAP
		Raw milk	RMK
		Wool, silk-worm cocoons	WOL
		Forestry	FOR
		Fishing	FSH
Mining	MIN	Coal	COL
		Oil	OIL
		Gas	GAS
		Minerals nec	OMN
Industries with high labour intensity	IHLI	Wearing apparel	WAP
		Ferrous metals	I_S
		Motor vehicles and parts	MVH
		Transport equipment nec	OTN
		Electronic	ELE
		Machinery and equipment nec	OME
Industries with medium labour intensity	IMLI	Textiles	TEX
		Leather products	LEA
		Wood products exept furniture	LUM
		Paper products, publishing	PPP
		Petroleum, coal products	P_C
		Mineral products nec	NMM
		Metals nec	NFM
		Metal products	FMP
Industries with high capital intensity (very low labour intensity)	IHCI	Bovine cattle, sheep and goat, horse meat products	CMT
		Meat products nec	OMT
		Vegetable oils and fats	VOL
		Dairy products	MIL
		Processed rice	PCR
		Sugar	SGR
		Food products nec	OFD
Industries with medium capital intensity (low labour intensity)	IMCI	Beverages and tobacco products	B_T
		Chemical, rubber, plastic products	CRP
		Manufactures nec	OMF

Sector	Abbr.	Sector	Abbr.
Labour intensive Services	SLI	Electricity	ELY
		Gas manufacture, distribution	GDT
		Water	WTR
		Construction	CNS
		Trade	TRD
		Transport nec	OTP
		Water transport	WTP
		Air transport	ATP
		Communication	CMN
		Financial services nec	OFI
		Insurance	ISR
		Business services nec	OBS
		Recreational and other services	ROS
		Public administration and defence, education, health	OSG
Capital intensive Services	SCI	Dwellings	DWE

Table 17: Changes of factor prices in scenario 2b in percent

	DRIT	T	C	TuC
Land	-3,0	-3,1	-5,1	-9,8
Unskilled labour	1,6	1,0	1,8	6,7
Skilled labour	1,3	0,8	1,4	5,1
Capital	-0,7	-0,6	-2,2	-1,7

Source: Own calculations

Table 18: Changes of production in Szenario 1a in percent

	EU	USA	rOECD	TRANS	DRIT	T	C	TuC	Total
AGR	0,7	0,9	1,6	0,7	0,6	-3,9	0,5	-3,8	-0,5
MIN	-0,9	-0,5	-0,9	-0,5	-0,1	-0,4	-0,7	-0,9	-0,5
IHLI	0,3	0,2	0,1	0,5	0,3	-1,5	0,3	-0,3	0,1
IMLI	0,3	0,4	0,3	0,4	0,2	-2,3	0,4	-2,2	-0,1
IHCI	0,8	0,7	1,3	0,7	0,5	-3,8	0,4	-5,8	0,1
IMCI	0,1	0,2	0,1	0,3	0,2	-1,3	0,3	-0,3	-0,0
SLI	0,2	0,3	0,2	0,2	0,1	-2,2	0,3	-1,6	0,1
SCI	0,3	0,3	0,3	0,2	0,2	-3,1	0,3	-2,6	0,1
Total	0,3	0,3	0,3	0,3	0,2	-2,2	0,3	-2,2	0,0

Source: Own calculations

Table 19: Changes of production in Szenario 1b in percent

	EU	USA	rOECD	TRANS	DRIT	T	C	TuC	Total
AGR	0,4	0,5	0,7	0,4	0,3	0,5	-4,6	-4,6	-0,2
MIN	-0,1	-0,1	-0,1	-0,0	0,0	-0,1	0,9	-0,1	-0,0
IHLI	0,1	0,1	0,1	0,2	0,2	0,2	-1,7	-0,4	0,1
IMLI	0,2	0,2	0,2	0,2	0,2	0,2	-2,5	-2,7	0,0
IHCI	0,7	0,4	0,7	0,5	0,4	0,7	-5,2	-6,8	0,0
IMCI	0,1	0,1	0,1	0,2	0,2	0,2	-2,5	-0,8	0,0
SLI	0,1	0,2	0,2	0,1	0,1	0,1	-3,2	-2,0	0,0
SCI	0,2	0,2	0,2	0,2	0,1	0,2	-3,9	-3,3	0,0
Total	0,2	0,2	0,2	0,2	0,2	0,2	-3,1	-2,7	0,1

Source: Own calculations

Table 20: Changes of production in Szenario 1c in percent

	EU	USA	rOECD	TRANS	DRIT	T	C	TuC	Total
AGR	0,9	1,2	2,0	0,9	0,7	-3,7	-3,3	-3,6	-0,6
MIN	-0,9	-0,5	-0,9	-0,5	-0,2	-0,4	-0,1	-0,9	-0,5
IHLI	0,4	0,3	0,2	0,6	0,4	-1,3	-1,4	-0,2	0,1
IMLI	0,4	0,5	0,4	0,6	0,3	-2,1	-2,0	-2,0	-0,1
IHCI	1,2	0,8	1,5	1,0	0,7	-3,7	-3,6	-5,6	0,0
IMCI	0,2	0,2	0,2	0,4	0,3	-1,1	-1,8	-0,2	-0,0
SLI	0,3	0,4	0,3	0,2	0,2	-2,0	-2,4	-1,5	0,1
SCI	0,4	0,4	0,4	0,3	0,3	-2,9	-2,9	-2,4	0,1
Total	0,4	0,4	0,4	0,4	0,3	-2,1	-2,3	-2,0	0,1

Source: Own calculations

Table 21: Changes of production in Szenario 2a in percent

	EU	USA	rOECD	TRANS	DRIT	T	C	TuC	Total
AGR	-0,1	-0,2	-0,1	-0,1	-0,5	-0,5	-1,0	-1,1	-0,4
MIN	-0,5	-0,4	-0,5	-0,3	-0,7	-0,6	-0,7	-0,9	-0,6
IHLI	-0,0	-0,0	-0,0	0,0	-0,6	-0,4	-1,1	-0,6	-0,1
IMLI	-0,1	-0,0	-0,1	-0,0	-0,6	-0,4	-1,2	-1,4	-0,2
IHCI	-0,1	-0,0	-0,0	-0,0	-0,3	-0,3	-0,8	-0,8	-0,2
IMCI	-0,0	-0,0	-0,0	-0,0	-0,5	-0,4	-1,2	-1,3	-0,2
SLI	0,0	0,0	0,0	0,0	-0,6	-0,4	-1,4	-1,3	-0,1
SCI	0,0	0,0	0,0	-0,0	-0,7	-0,6	-1,9	-1,7	-0,1
Total	-0,0	-0,0	-0,0	-0,0	-0,6	-0,4	-1,3	-1,1	-0,1

Source: Own calculations

Table 22: Changes of production in Szenario 2b in percent

	EU	USA	rOECD	TRANS	DRIT	T	C	TuC	Total
AGR	-0,2	-0,3	-0,2	-0,2	-1,0	-1,0	-1,9	-2,1	-0,8
MIN	-0,9	-0,8	-1,1	-0,7	-1,4	-1,2	-1,5	-1,9	-1,1
IHLI	-0,0	-0,0	-0,1	0,1	-1,2	-0,9	-2,1	-1,2	-0,3
IMLI	-0,1	-0,1	-0,1	-0,1	-1,2	-0,9	-2,4	-2,8	-0,5
IHCI	-0,1	-0,1	-0,1	-0,1	-0,7	-0,7	-1,7	-1,7	-0,4
IMCI	-0,1	-0,1	-0,1	-0,1	-1,1	-0,8	-2,5	-2,6	-0,4
SLI	0,0	0,0	0,0	0,0	-1,1	-0,9	-2,9	-2,6	-0,2
SCI	0,0	0,0	0,0	-0,0	-1,4	-1,2	-3,8	-3,5	-0,2
Total	-0,0	-0,0	-0,0	-0,0	-1,1	-0,9	-2,5	-2,3	-0,2

Source: Own calculations

Table 23: Changes of production in Szenario 3 in percent

	EU	USA	rOECD	TRANS	DRIT	T	C	TuC	Total
AGR	-0,1	1,7	-1,0	-0,1	0,5	-2,4	-2,1	-2,5	-0,7
MIN	-0,4	-0,3	-0,5	-0,3	-0,2	-0,1	0,1	-0,3	-0,2
IHLI	-0,0	-0,1	0,2	0,3	0,4	-0,7	-0,8	-0,2	-0,0
IMLI	0,2	0,1	0,1	0,0	0,1	-1,1	-1,1	-1,0	-0,1
IHCI	-0,0	0,6	-0,5	0,3	0,5	-2,5	-2,3	-3,9	-0,5
IMCI	0,2	0,1	-0,0	-0,2	-0,2	-0,8	-1,1	-0,3	-0,1
SLI	0,1	0,1	0,3	0,7	0,3	-1,2	-1,5	-1,0	0,0
SCI	0,1	0,1	0,4	1,0	0,5	-1,7	-1,8	-1,6	0,1
Total	0,1	0,1	0,2	0,4	0,3	-1,2	-1,4	-1,4	-0,0

Source: Own calculations