Regional Trade Agreements with Labor Clauses: Effects on labor standards and trade

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Abstract

An increasing number of regional trade agreements (RTAs) include "labor clauses" that require or urge the signatory countries to commit to maintaining a certain level of labor standards. This paper, starting by classifying more than 200 currently effective RTAs depending on the nature and extent of labor provisions, empirically analyzes the effect of a RTA with labor clauses on domestic labor conditions in the signatory countries as well as the effect on trade growth between the countries, using data for up to 220 countries for the period 1995-2012. The study finds that (i) intensive trade with the partner(s) of a labor-clause-inclusive RTA may have a positive impact on labor earnings that concentrate on middle-income countries; but also that (ii) labor clauses may reduce the trade-promoting effect of the RTA for the middle-income countries, especially when the RTA partner is a high-income country. These results offer a policy implication that the inclusion of labor clauses in a trade agreement should involve non-negligible costs for possible benefits that may not be expected for every country.

Keywords: International trade, Regional trade agreements, Labor standards, Labor clauses
JEL classification: F13, F14, F16, F66, J81, J83

1. Introduction

Global economic integration or "globalization" often raises concerns among the public about its negative impacts on the economies and societies of individual countries. One of those concerns that are perhaps the most widely argued is the impacts on conditions of workers. The concern about international trade and labor conditions or labor standards is not new,[1] indeed. However, as observed in the anti-sweatshop movement or fears of a 'race to the bottom,' the debate about the issue of trade/globalization and labor conditions has been intense for the last two decades or so, perhaps due to the expansion of firms' multinational business activities and the rapid increase of exports from the emerging economies. Some of these arguments against globalization are driven by altruistic or humanitarian concerns for people in poor working conditions, but others are motivated by the self-interest of labor groups in the sectors (typically in developed countries) that face an intensified import competition from low-labor-cost countries.

These views of the adverse effects of trade or globalization on labor conditions are linked to the idea of "labor clauses" (or "social clauses"[2]) in a trade agreement, that is, provisions that allow a signatory country to use trade sanctions against its trading partner for the country's low labor standards or non-compliance of the standards. Again, the idea of labor clauses is not new: the 1948 (Havana) Charter of the International Trade Organization (ITO), which failed to be established more than a half century ago, had a provision addressing the issues of "unfair labor conditions" for export.[3] Also under the GATT/WTO system, some developed countries—especially the United States (U.S.) and European Union (EU)—have repeatedly proposed to add labor provisions to

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[1] See the following paragraph.
[2] "Social clauses" usually mean provision that address not only labor issues but also a broader range of issues such as environment.
[3] Article 7 of Chapter II of the Charter says: "The members recognize that unfair labor conditions, particularly in the production for export, create difficulties in international trade, and accordingly, each member shall take whatever action may be appropriate and feasible to eliminate such conditions within its territory."

the multilateral trade agreement since an early time. The proposal of including labor provisions in the GATT/WTO rules, however, has not been successful due to a large disagreement between these pro-labor-clause countries and a group of developing countries that are seriously concerned about possible protectionist (ab)uses of trade sanctions against their labor-intensive export.[4]

Recently, perhaps (at least partially) because the new multilateral negotiation round under the WTO system has been deadlocked (but not primarily due to the disagreement about labor clauses), some countries that are seeking to have labor provisions in international trade rules have turned to bilateral or plurilateral trade agreements (or regional trade agreements: RTAs)[5] as an opportunity. For instance, the North American Free Trade Agreement (NAFTA) among Canada, Mexico, and the U.S. is accompanied by a labor side agreement among the three countries. The U.S. also amended then-negotiated free-trade agreements (FTAs) with Peru, Colombia, Panama, and South Korea to follow the *New Trade Policy for America* that was introduced by the Congress in 2007 and require the Administration to include labor provisions in US FTAs with other countries (Bolle, 2008). The EU has also systematically included labor provisions in its RTAs with other non-EU countries (Häberli, Jansen, & Monteiro, 2012).

The primary goal of including labor provisions in a RTA with other country should be for a government to maintain its domestic labor conditions (i.e., prevent from deteriorating) or to even improve them.[6] On the other hand, including labor provisions

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[4] The WTO Ministerial Declaration made at the 1996 Conference in Singapore may highlight this large disagreement among the members: "We renew our commitment to the observance of internationally recognized core labour standards. …… We reject the use of labour standards for protectionist purposes, and agree that the comparative advantage of countries, particularly low-wage developing countries, must in no way be put into question."

[5] Below in this paper, RTAs mean to include broader-ranged economic partnership agreements (EPAs) or similar agreements that involve trade liberalization between or among the signatory countries.

[6] An altruistic government might also be interested in maintaining labor conditions in the foreign RTA partner(s), but a 'rational' government should be interested in the maintenance or improvement in foreign labor standards as long as it could lead to the maintenance of its own domestic labor conditions.

in a RTA might bring some policy costs to the government. For instance, only limited RTA partners might be willing to include labor provisions; negotiation for a RTA with labor provisions might take longer time; or the partners might be able to agree only with a limited degree of trade liberalization if negotiating labor provisions together.[7] In any possibility, the government might lose potential benefits from earlier or deeper trade liberalization that it could gain if they negotiated the RTA without labor clauses. Therefore, the relevant policy questions should be: Is including labor clauses in a RTA really effective to maintain or improve domestic labor conditions in the signatory or member countries? Is a RTA with labor clauses equally trade-promoting to a RTA *without* labor clauses (in other words, does including labor clauses in a RTA not reduce the trade-enhancing effect of the RTA compared to the case in which the partners do not include labor clauses in the RTA)? These are the questions that the current paper addresses.

More specifically, this paper empirically analyze (i) the effect of a RTA with labor clauses (compared to a RTA without labor clauses) on domestic labor conditions in the RTA member country and (ii) the effect of a RTA with labor clauses (compared to a RTA without labor clauses) on a growth in trade with other member of the RTA. The study starts by reviewing more than 200 RTAs that are currently in force and classifying them into six categories depending on the existence, nature, and extent of labor clauses included in those RTAs. Then, dividing the RTAs into two broader categories—the ones with effective labor clauses and those without, the paper conducts two empirical analyses for (i) and (ii), respectively, using (unbalanced) panel data for up to 220 countries for the period of years 1995 through 2012. For the first (i) analysis, labor conditions are measured by three "outcome" measures (earnings, work hours, and occupational injury rate) and one "standard" measure/proxy (the number of the ILO's

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[7]   See Limão (2005) for the possibility that the degree of trade liberalization would be limited if countries were to jointly negotiate two policy issues (trade policy and non-trade social policy) for an agreement.

core conventions ratified). For the second (ii) analysis, trade growth is measured by an increase in bilateral trade volumes. Through these analyses, the paper finds that (i) intensive trade with the partner(s) of a labor-clause inclusive RTA may have a positive impact on labor earnings (but not on other labor-condition measure), but the effect should be concentrated on middle-income countries; but at the same time that (ii) a RTA with labor clauses may reduce a trade-growth effect of the RTA for the middle-income countries, especially when the RTA partner is a high-income country. In other words, the study indicates that for middle-income countries there may be both benefit and cost expected from including labor provisions in a RTA, but there should be no significant expected impacts for other countries, while the high-income countries might have to incur the cost of a reduction in trade growth for no significant benefits from the inclusion of labor clauses in a RTA.

This paper makes unique contributions to academic and policy research. Firstly, to the best of my knowledge, this paper is the first that empirically investigates the effects and effectiveness of labor clauses in a trade agreement. As presented in the next section, although there is a large volume of literature on the relationship between trade and labor standards, research is still thin on the issue of the effect(iveness) of labor clauses in a trade agreement. Especially, in the empirical research on this topic the current paper has been the only piece to date. Secondly, this paper proposes a unique classification on labor provisions of the entire population of the currently effective RTAs in the world. Such an extensive catalog has never been provided,[8] and the list in the current paper should offer handy information for future research in various ways. Thirdly, by analyzing the effects of RTA labor clauses on both labor conditions and trade, this study sheds light on the economic benefit and cost of the inclusion of labor provisions in a RTA. Although the current study does not (or cannot) quantify whether

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[8] Siroën (2013) provides a table (Annex 3) that lists the major variables in RTA labor clauses together with the examples of RTAs. However, it does not cover the entire population of RTAs or categorize/group those RTAs.

the benefit exceeds the cost or vice versa, this paper provides policy practitioners with an implication that the policy of including labor clauses in a trade agreement should involve empirically evident cost (lower trade growth) for possible benefit (higher labor earnings) that may not be expected for every country.

The rest of the paper is organized as follows. The next section reviews the existing literature on the issues of the relationship and policy linkage between trade and labor standards/conditions. Section 3 describes the classification of labor clauses in the currently effective RTAs and provides a catalog of the RTAs in terms of labor provisions and their features. Section 4 describes the data and empirical approaches, which is followed by the section for the results of the analyses. Section 6 concludes the study with a discussion on what to be further investigated.

2. Trade and Labor Standards: What Has Research Found?

As the relationship between international trade (or more generally, economic globalization) and labor standards is not a very new issue, there exists a large volume of literature on this topic. In this section, I present an overview of findings in some frequently cited studies on selected topics that should be closely related to the current paper. There are indeed a number of studies including Brown, Deardorff, & Stern (2011) and Samy & Dehejia (2007) that provide an extensive survey of the literature,[9] and I leave more comprehensive reviews of the literature on the general topic of trade and labor standards to these studies.

2.1. Preliminary: What Are "Labor Standards"?

The concept of "labor standards" includes those for various kinds of labor conditions. Before proceeding to the literature review, I briefly describe what are

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[9] Siroën (2013) also shows on tables (Annexes 1 and 2) summaries of findings in various theoretical and empirical studies on this topic.

considered as "labor standards" in academic research as well as public debate.

The most frequently referred to are those so called "internationally recognized core labor standards" (or often more simply "core labor standards"). The International Labour Organization (ILO) declares that the core labor standards are (i) freedom of association and collective bargaining (FACB), (ii) elimination of forced labor, (iii) elimination of child labor, and (iv) elimination of discrimination in respect of employment and occupation.[10] Sometimes, however, labor standards that are understood to be basic go beyond these "core labor standards." For instance, the US 1984 Generalized System of Preferences Renewal Act defines acceptable working conditions on wages, hours of work, and occupational safety and health as a category of the basic labor standards in addition to the above-mentioned four "core" categories.[11] Labor standards that are primarily considered in debates about a 'race to the bottom' may be this 'beyond-the-core' category, especially for workers in developed countries.

Many pieces of literature primarily consider the "core labor standards," while some extends the scope to other labor conditions than the "core" categories, such as wages and hours.[12]

2.2. Theoretical Research

Gains from (Low) Labor Standards?

One of the criticisms that are often raised in the context of public concerns about globalization and labor standards is that some countries (implicitly the

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[10] The OECD (1996) identifies the "core labor standards" basically in the same manner, while it categorizes the standards into five items separating FACB into freedom of association and that of collective bargaining.

[11] More specifically, the 1984 act defines "internationally recognized worker rights" as "… freedom of association, the right to organize and bargain collectively, freedom from forced labor, minimum age for the employment of children, and acceptable conditions of work with respect to wages, hours of work, and occupational safety and health."

[12] The current paper also looks at the 'beyond-the-core' labor conditions measured as labor earnings, work hours, and fatal occupational injury rate as a proxy of occupational safety. To address the "core" categories, this paper uses a conventionally-used proxy of the ratification of the ILO's fundamental conventions.

developing) keep their labor standards low to gain or maintain a competitive advantage in international trade. What does research say about this? Does the economic theory predict that countries will or can gain from low or weak labor standards?

Brown, Deardorff, & Stern (1996) analyze the effects of labor standards on a country's economic welfare using a competitive general-equilibrium framework. They consider 'resource-using' labor standards such that the standards will decrease resources available for industrial production, and conclude that stricter labor standards will raise the relative price of the standard-imposed industry, so that a country's terms of trade will improve if the country applies *higher* labor standards to its exporting sector. They also find that, unlike the conventional wisdom, *raising* 'labor-using' standards will *benefit* the exporter of labor-intensive product, [13] which should be typical for developing countries, through improvement in its terms of trade.

Maskus (1997) and Martin & Maskus (2001) analyze, applying a competitive-economy framework, the impacts of weak standards in the area of the "core" labor standards. They conclude that in many cases weak labor standards are market-distorting and thus the weak standards will have *negative* impacts on a country's productivity, export performance, and economic welfare, which is also different from the conventional wisdom. [14]

International Harmonization of Labor Standards?

Some of those who are concerned about the international difference in labor standards are emphasizing the importance of international harmonization of labor standards. Putting aside the humanitarian perspective the importance of the "core" labor standards, a question that research should address should be what economic impacts

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[13] They say that most labor standards including the internationally recognized core labor standards are labor-using. They, however, also consider that some standards such as occupational safety require other resource (e.g., capital).

[14] They, however, also point out that there are possible cases in which weak standards will increase a country's exports. One possible case is when child labor is an intensive input in the country's exporting sector. The other possible case is when labor unions in competitive labor markets aim and act to raise wages (in this case weak FACB rights will bring the wage back to the efficient level).

international labor-standard harmonization will have, or more specifically, will it improve a country's and/or the world welfare?

First, as repeatedly pointed out in the literature,[15] research has consistently found that labor standards vary across countries depending on their economic and social conditions, and that labor standards in a country becomes higher as the country's income grows. Then, if it is the case that countries with different economic/social conditions are optimally choosing and applying different labor standards, international harmonization of standards would be lower the economic welfare of at least some countries and worldwide. This view is consistent with Brown et al. (1996) who apply a variety of partial- and general-equilibrium framework to analyze the effects of international labor-standard harmonization. Their general conclusions are that international harmonization of labor standards is difficult to justify from the worldwide economic welfare perspective since the effects of such harmonization depend on the situation of an individual country (such as whether the country is an exporter or importer in the standard-imposed or standard-applied industry), and that countries should be allowed to apply different labor standards as long as the countries aim to correct market failure in their domestic economies and/or to improve their economic welfare.

Linking Trade Policy with Labor Standards?

Some of those who are concerned about low labor standards or poor labor-standard compliance in other countries argue that trade sanctions (i.e., limiting market access) against such low-standard countries should be effective to 'correct' their standards. This type of argument may support the policy of including labor provisions in a bilateral or multilateral trade agreement. What has research found about the effectiveness of the linkage of trade policy and labor standards?

Maskus (1997), Martin & Maskus (2001), and Srinivasan (1998) emphasize

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[15] See, for instance, Maskus (1997) and Srinivasan (1998).

that even in the case where a policy reaction to low or weak labor standards in other country is justifiable, trade sanctions such as tariff raising are not only trade-distorting but also too indirect to address the main policy issues in the foreign labor market. They, as well as Brown et al. (1996), also demonstrate that in many cases trade sanctions will have no impacts on workers in foreign countries with weak labor standards or can even worsen the conditions of those foreign workers. They conclude that 'labor clauses' in a trade agreement that allows a country for trade sanctions against other country with weak labor standards would not be effective,[16] and that other policy options that more directly target the main issues, including financial assistance to poverty alleviation or educational access in low-standard (or developing) countries, should be desired.[17]

There are also some (though not many) studies from the policy-design perspective that analyze the effectiveness of the linkage of trade policy and domestic social policy in an international agreement.[18] Bagwell & Staiger (2001) consider the case in which trade policy and domestic social policy are policy substitute (such that, for instance, a country can limit its import from its trading partner by either raising a tariff or weakening its *domestic* labor standards). They show that in this case, an international agreement only on trade policy (such as the current GATT/WTO system) may offer motivation for a country to change its domestic social policy (e.g., lowering labor standards) to offset wider market access that is granted to the foreign country through the trade agreement, which might lead the countries to a 'race to the bottom.' However, they demonstrate that the rules for "non-violation complaints" under the current WTO system (provided by the GATT Article 23) can prevent the country from making such import-restrictive change in its domestic non-trade policy, without

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[16] Srinivasan (1997) shows that even if imposing some international minimum labor standards is Pareto optimal, such a policy optimum is feasible under free trade.
[17] Srinivasan (1997) uses the phrase of "*international assistance* and *domestic compliance*."
[18] These studies are not exclusively about labor standards or labor-related issues, but are more general and applicable to a variety of social issues. The authors, however, consider labor standards as an example of those social issues.

introducing 'social clauses.'[19] Limao (2005) considers the case in which non-trade social policy has a (negative) cross-border external impact and thus international harmonization is required for the social-policy issue,[20, 21] and analyzes whether and under what conditions linking trade policy and the non-trade social policy can sustain international cooperation. He demonstrates that the policy linkage will be sustainable when the two policy issues are not independent but "strategic complement." He shows that the two policy issues become strategic complement only if the external cost of non-trade issue is sufficiently valued by the governments *and* import-competing lobbies are not powerful, but these conditions should be satisfied only in very limited situation in the reality of the current international society. Spagnolo (2001) also analyzes the sustainability of international cooperation through the linkage of multiple policy issues by considering a repeated Prisoner's Dilemma game between countries.[22, 23] He finds that policy-issue linkage in an international agreement *can be* sustainable if countries are symmetric and the net cost of deviating in one policy issue exceeds the net benefit from deviating in another issue, but that it will be more difficult to find a room for sustainable issue linkage if countries are asymmetric in the sense that countries have

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[19] They also emphasize that the conventional wisdom that a 'race to the bottom' is caused by greater import competition from low-standard countries is misleading (notice that they show that a potential race is led by a country's motivation to protect its market), and that the current argument for social clauses, in which countries would first set common minimum labor standards and then be allowed to use trade sanctions against foreign countries that fail to meet the standards, is improper.

[20] This is in contrast to the study by Bagwell & Staiger (2001) in which they assume that a non-trade social issue has (indirect) cross-border impacts only through a change in terms of trade but no other non-pecuniary impacts, so that a country has no direct interests in other country's domestic social policy.

[21] It is controversial whether or not a country's labor standards have a direct cross-border externality (one possible case is when people have a other-caring utility function so that they feel uncomfortable if workers in other countries are in poor working conditions). Hence, Limao's study may be more applicable to, for instance, the issue of trade and environment.

[22] More specifically, Spagnolo considers the situation in which there are two policy issues and for each issue countries face a Prisoner's Dilemma game where in each stage deviating is the dominant strategy for both countries. Countries are assumed to play the game repeatedly in a way that deviation in one period will be retaliated by the deviation of the other country in all the following periods. If two issues are linked in an agreement, one-period deviation in one issue is retaliated by deviation in *both* issues in all the future periods.

[23] Srinivasan (1998), however, points out that characterizing a 'race to the bottom' as a Prisoner's Dilemma should be misleading.

different policy objective functions.[24]

2.3. Empirical Research

Effects of Labor Standards/Conditions on Trade (or Export)

Two of the arguments frequently raised from those who are concerned about the relationship between globalization and labor standards are that (i) some countries use their low or weak labor standards as a source of their competitive advantage in international trade, and that (ii) a keener competitive pressure in a more globalized economy is pushing down labor standards worldwide. Although both arguments are linked to a concern about a 'race to the bottom,' we may consider two separate questions for empirical research on these conventional wisdoms: i.e., whether weak labor standards (positively) affect a better export performance (for (i)), and whether globalization (negatively) affect labor standards (for (ii)). Indeed, many studies address the first question by having a measure of a country's export performance (typically the share of exports in GDP) as the dependent variable and some measure of labor standards as an explanatory variable, while there are fewer but some studies addressing the second question. In this sub-subsection I present a brief summary of selected studies on the first question. Studies on the second question will be reviewed in the next sub-subsection.

Aggarwal (1995) and the OECD (1996) should be of the first that empirically examine the effects of labor standards on a country's export performance using a cross-country data.[25] Aggarwal uses data for 10 developing countries on exports to the United States and on various labor standards (the 'core' standards as well as

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[24] Zhao (2009) also proposes a unique theoretical analysis of the effect of an importer's trade policy on an exporter's labor standards, based on an international oligopoly framework in which labor standards increase the utility of labor. He, however, considers tariffs as a leverage to push up the exporter's labor standards, unlike the conventional understanding that tariffs could work as sanctions against low/weak labor standards.

[25] Their studies do not apply a formal econometric method but a more qualitative approach. OECD (1996) shows the relationship (or no relationship) using data plots. Aggarwal (1995) presents a qualitative discussion for the 'core' standards, while she takes a more formal econometric approach for wages and employment.

employment and wages), and finds no evidence for the conventional wisdom.[26] The OECD (1996) focuses on the effects of FACB rights and uses data for 44 countries, and finds no evidence for the conventional wisdom.[27]

Mah (1997) uses data for 45 developing countries to examine the effect of the ratification of the ILO core conventions on a country's export performance.[28] He actually finds a consistent pattern to the conventional wisdom: countries with a fewer core conventions ratified tend to have a higher export-to-GDP ratio, but as a number of researchers including himself point out, the ratification of the core ILO conventions may not be a good measure of labor standards.[29, 30]

More recent studies use a variety of measures of various aspects of labor standards. Some use qualitative indexes (zero-one dummies or scale numbers),[31] some use quantitative variables,[32] and others use both. Those studies typically include one of these labor-standard measures in one regression to see the impact of each different labor standard or condition separately. Rodrik (1996) and Dehejia & Sammy (2004) examine the effects of labor standards on a country's export per GDP using a variety of labor-condition measures for a large number of countries.[33] They also include measures

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[26] She rather finds somewhat the opposite tendency: i.e., wages and employment tend to be *higher* in the more export-oriented sector than in the less export-oriented or non-traded sectors.
[27] It also finds *no* patterns such that countries worsen labor standards after trade liberalization. This may be taken as evidence against the second argument (that globalization worsens labor standards).
[28] He uses a dummy indicating if the country has ratified each core convention or not, as well as the total number of the core conventions that the country has ratified.
[29] For instance, Srinivasan (1998) mentions that many countries have signed and ratified a set of the core conventions. On the other hand, some developed countries that are understood to maintain high labor standards (such as the United States) have indeed ratified a *fewer* core conventions than typical developing countries.
[30] Despite this, many studies use the information on the ratification of the ILO core conventions as an index of labor standards. Those studies, however, also employ other labor-standard measures and/or include a set of other explanatory variables (Mah's benchmark regression has the convention ratification variable as the only regressor, and his other model include only one other control variable (real interest rate)).
[31] For instance, the indexes of civil freedom and political rights by the Freedom House.
[32] For instance, the percentage of children who are not working as a measure of the strictness of child labor prevention.
[33] Dehejia & Samy employ the following labor-condition measures: normal weekly work hours, the number of paid leave days per year, union membership as the percent of non-agricultural labor force, and occupational injuries per 1,000 employees. They use a cross-country dataset including 72 countries, while the data year varies across countries and variables depending on

of a country's labor and human-capital endowments as other potential determinants of the country's comparative advantage.[34] They find that a country's export performance is well explained by its factor endowments, but not by the level of its labor standards. Busse (2002) takes a similar approach, but examines the effects of labor standards on a country's *unskilled-labor intensive manufacturing* exports (as the share in the country's total exports). He uses both quantitative and qualitative proxies of various labor standards and a cross-country data for 83 countries,[35] and actually finds significant negative relationships between labor-intensive exports and his proxies of child labor and forced labor. However, unlike Mah (1997), Busse finds no significant relationship between labor-intensive exports and the ratification of the ILO core conventions.

Some studies employ a gravity-equation approach and see the relationship between bilateral export flows and a country's labor standards. van Beers (1998) use a score of labor-standard stringency and includes the scores of both exporter and importer countries into his gravity equation.[36] He finds no significant effects of the labor-standard stringency on either aggregate or labor-intensive exports between a pair of countries,[37] but it should be noted that his sample includes 18 OECD countries only but no non-OECD developing countries. Kucera & Sarna (2006) have a wider variety of countries in their sample (135 countries) for their gravity estimation. They focus on the effects of FACB rights and employ a number of qualitative FACB rights indexes.[38]

their sources and availability.

[34] Dehejia & Samy use the polulation-to-land ratio as a measure of labor endowment and an educational attainment index to measure a country's human-capital endowment.

[35] Busse employs the following labor-standard proxies: female labor force activity rate, the percent of children who are not working, a scale index of forced labor (by the ILO), a scale index of union freedom and rights (by the OECD), and the number of the ILO core conventions ratified. He also includes a similar set of factor-endowment measures to those employed by Dehejia & Samy (2004) as the explanatory variables.

[36] The score is computed as the sum of a scale indicator, ranging between 0 and 2, for each of the following five labor regulations sourced from the 1994 *OECD Employment Outlook*: working time, fixed-term contract, employment protection, minimum wages, and employees' representation rights.

[37] He also finds that stricter labor standards tend to reduce *skill-intensive* exports, not unskilled-labor intensive exports that should be expected from the conventional wisdom.

[38] Unlike van Beers (1998), they include in their gravity equation the FACB rights index of the exporter country only.

They find that although FACE rights are not significant in the effects on total manufacturing exports between countries, *weaker* FACE rights in a country actually tend to promote labor-intensive exports of that country.

Effects of Globalization on Labor Standards/Conditions

There exists, thought not very thick, empirical literature on the effects of economic globalization on a country's domestic labor standards (i.e., on the second question mentioned earlier). The research typically uses a measure (or episode) of trade liberalization or openness and examines the impacts on domestic labor standards.

Huberman & Lewchuk (2003) have conducted a unique study employing a cross-country data for the pre-War period of years 1853 through 1913, which is the time of the 'first wave of globalization.' They compose their Labor Compact Index (LCI) based on the indexes of the eleven items of labor regulations and conditions, and regress the LCI on the conventional trade openness index (the sum of exports and imports divided by GDP) and average tariff rate as well as other economic variables. They find that, though the effect of tariff rate is not significant, the positive effect of trade openness on the LCI is significant; implying that being integrated in the global economy tends to improve labor conditions.

Some studies focus on a particular issue(s) of labor standards and examine the impacts of globalization on that standard. Edmonds & Pavcnik (2005) examine the case of liberalization of Vietnamese rice export for its impact on the country's child labor. The study is extended by themselves (Edmonds & Pavcnik, 2006) and Neumayer & de Soya (2005a) using cross-country data on trade openness and use of child labor. Neumayer & de Soya (2005b, 2007) also extend their study to analyze the effects on gender discrimination, forced labor, and FACB rights.[39] The overall findings in these studies are that trade openness has no impacts on these 'core' labor standards, or rather

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[39] These studies by Neumayer & de Soya also examine the impacts of FDI openness on labor standards.

is associated with a *decrease* in child labor.

Effects of Labor Standards/Conditions on FDI

Another claim from a fair of a 'race to the bottom' due to international competitive pressure is that multinational enterprises are attracted by low labor costs in weak-standard countries for their business activities. There are empirical studies concerning this argument and examine whether and how a country's labor standards/conditions affect FDI inflows to that country.

The studies by Aggarwal (1995) and Rodrik (1996), which have been introduced in an earlier sub-subsection for the effects of labor standards on trade, also analyze the effects on FDI. Aggarwal finds no evidence for the fear of a 'race,' and Rodrik rather finds a positive relationship between *stricter* standards and FDI inflows. Kucera (2002) employs data for 127 countries for the mid 1990s and analyzes the effects of FACB rights, measured as a variety of qualitative indexes, in a country on FDI inflows to the country, and finds that FDI appears to flow into countries with more protected FACB rights. His study is extended by Teitlebaum (2010) using data on more finely categorized workers' rights for a larger number of countries. He finds no significant relationship between labor rights and FDI inflows, so that (conservatively) confirms Kucera's finding.

In sum, it should be fair to say that literature has consistently found that there is no empirical evidence for the conventional wisdom about a 'race to the bottom' due to global competition.

Effects (or Effectiveness) of Labor Clauses in Trade Agreements?

Although, as introduced in the previous subsection, there is theoretical literature on the effects or effectiveness of labor provisions in a trade agreement, to the

best of my knowledge there has been no empirical research on this issue.[40] Indeed, this is exactly the reason why the current paper aims to contribute to the literature on this particular topic.

If departing from the specific topic of labor provisions in trade agreements, one can perhaps consider the Generalized System of Preferences (GSP) that is granted by some developed countries to developing economies as an example of the policy linkage of market access and labor standards. Brown et al. (2011) discuss the cases of the GSP of the United States to illustrate whether the process of petitioning against the violation or noncompliance of labor standards in the GSP-granted countries has been effective to improve labor conditions in those countries. They conclude that, although the trade sanction or its threat under the GSP was successful in some cases such as against Chile and Guatemala in the mid 1980 to cease violent repression against union leaders under military regimes, the effectiveness of trade sanctions under the GSP is questionable since the petitioning process can be highly influenced by political concerns and business interests.[41]

3. Labor Clauses in RTAs Currently in Force

In this section I present my classification of currently enacted RTAs in the world in terms of the nature of labor clauses included (or not included) in them. There are 259 bilateral and plurilateral RTAs[42] that are in force and have been notified to the WTO as of the end of July 2013. Of these 259 I examine 223 RTAs for which I can find

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[40] Haberli et al. (2012) are interested in the topic of labor provisions in regional trade agreements (RTAs). However, their empirical analysis investigates the effects of RTA-induced trade on labor standards in trading countries, but does not examine the impacts of labor provisions in those RTAs. As described in the following sections, this paper analyzes the effects of labor clauses in trade agreements.

[41] It should be noted that the GSP is fundamentally different from reciprocal RTAs, and the petitioning process under the GSP and labor clauses in RTAs should be different in nature as trade sanctions against low/weak labor standards. The current paper thus excludes the GSP from its scope.

[42] The RTAs in the WTO's list include free trade areas (FTAs), customs unions (CUs), and "partially scoped agreements" (PSAs). The GSP are *not* included in these RTAs, however.

(at least a part of) the text of the agreement. By reading the texts of these RTAs, I examine whether each of these RTAs includes labor clauses or any provision on labor issues; and if yes, the scope, depth, and strength of the labor-related provisions (in other words, how details and strict the labor clauses are) in each RTA. My primary source of the information on labor provisions in each RTA is the ILO's website (the page titled "Free Trade Agreements and Labour Rights")[43] where the texts of labor-right and social provisions in selected RTAs are available. For the RTAs that are not listed in the ILO's website, I search the texts of the agreements in other sources including the official websites of the governments of those RTA members. I primarily search English texts, but when English texts are not available, I also consult Spanish and Chinese texts.[44]

After examining the labor clauses or labor-related provisions in those 223 RTAs, I classified them into six groups based on the contents of their labor clauses. This classification is performed primarily as preparation for my empirical analysis that is described in the following section, but this classification should also have a self-standing value as a catalog of labor clauses in RTAs for future research. The key features of labor clauses in each RTA group are as follows:

Group 1: The RTA members are required to make their domestic labor laws consistent with the ILO's guidelines. The RTA text also discusses how domestic labor laws should be promoted and enforced in the member countries. The existence of labor consultations process or location of the labor provisions (in the main text, side agreement, or preamble) varies.

Group 2: The RTA members should strive to have their domestic laws consistent with the ILO guidelines, but do not have to commit to do so ultimately. The RTA

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[43] URL: http://www.ilo.org/global/standards/information-resources-and-publications/free-trade-agreements-and-labour-rights/lang--en/index.htm.

[44] I am extremely thankful to my research assistant Miriam Palmer for helping me in identifying the RTA texts and reading the texts in Spanish or Chinese.

text also discusses how domestic labor laws should be promoted and enforced in the member countries. The existence of labor consultations process or location of the labor provisions (in the main text, side agreement, or preamble) varies.

Group 3: The RTA mentions the members' commitments to the ILO standards but are not required or suggested to follow the ILO's guidelines. The location of the labor provisions (in the main text, side agreement, or preamble) varies.

Group 4: The RTA mentions labor rights, such as in the way to "improve working conditions," but does not refer to the ILO standards. The location of the labor provisions (in the main text, side agreement, or preamble) varies.

Group 5: The RTA mentions social issues such as human rights, but does not mention labor rights or standards exclusively.

Group 6: The RTA does not mention labor or social matters.

Table 1 provides the catalog of the RTAs in each group.

4. Empirical Approaches and Data

In this section, I present my empirical approaches to (i) the issue of effectiveness of labor clauses in a RTA to maintain or improve the domestic labor conditions in each of the RTA member countries, and to (ii) the issue of the impact of the RTA with labor clauses on trade between the RTA member economies. I also describe the data used in the empirical analyses.

4.1. Effects on Labor Conditions

The primary research question is whether labor clauses in a RTA are effective to improve the domestic labor conditions in the RTA member countries or to prevent them from the "race to the bottom" (assuming they are the case). I employ the following

econometric specification, inspired by Häberli et al. (2012) and also distinguishing RTAs with labor clauses from those without labor clauses:

$$L_{it} = \alpha + \beta_1 TP^{LC}{}_{i,\,t\text{-}1} + \beta_2 TP^{NL}{}_{i,\,t\text{-}1} + \mathbf{X}_{it}\gamma + u_i + T_t\delta + \varepsilon_{it} \qquad (1)$$

where L_{it} is a measure of labor conditions in country i at year t; $TP^{LC}{}_{it}$ and $TP^{NL}{}_{it}$ are country i's trade intensities with other members of RTAs with labor clauses and those without labor clauses, respectively; and $\mathbf{X}_{it}$ is a set of variables for economic controls. These variables are further described below. u_i represents time-invariant country-specific factors that affect the country's labor conditions but are unobservable for researchers,[45] T_t represents time (year) dummies; and ε_{it} represents the idiosyncratic error term.

For the labor condition variable L_{it}, the following four measures are employed: (i) the mean monthly earnings of employees in manufacturing industries (earnings); (ii) mean weekly hours actually worked per employee in manufacturing (hours); (iii) the rate of fatal occupational injury in manufacturing (fatal injury rate); and (iv) the number of ILO's core conventions ratified (conventions). The data for the first three measures (earnings, hours, and fatal injury rate) are obtained from *LABORSTA*,[46] an on-line database provided by the ILO. For earnings, the original data from *LABORSTA*, which are reported in the nominal local currency unit (LCU), are converted to the real earnings measured in constant 2005 US dollars, using data for current market exchange rates (annual average) and the US GDP deflator sourced from the World Bank's *World Development Indicators* on-line database (WDI).[47] The variable is also expressed as the

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[45] This specification differs from the one employed in Häberli et al. (2012) that includes dummies indicating the region and income group of each country. The current research includes individual country dummies considering the nature of the data for the labor condition variables L_{it} sourced from the ILO statistics. Data from the ILO statistics are not always internationally comparable due to difference in data sources across countries. The author therefore considers that within-country comparisons using an individual country fixed-effect approach is suitable to the estimation in the current research. On the other hand, Häberli et al. (2012) uses their labor condition measures from a more internationally comparable database.

[46] http://laborsta.ilo.org/

[47] http://data.worldbank.org/data-catalog/world-development-indicators

natural logarithm. The variable *convention* is measured by the author by counting how many of the ILO's core conventions each country had ratified as of the end of data period (year) using the convention ratification information from the ILO's information system *NORMLEX*.[48] The ILO's core conventions include the following eight fundamental conventions regarding its core labor standards.[49]

The economic controls in $\mathbf{X}_{it}$ include the following five variables: the natural log of real GDP per capita (in the linear and squared terms), employment in the industry sector as the percentage of the total employment, manufacturing value added as the percentage of GDP, and two Freedom House's indexes indicating political rights and civil liberties. Data for the first three economic variables are taken from the WDI.[50] The index of political rights and the index of civil liberties are the ones reported in the *Freedom in the World*, an annual survey report by Freedom House. Each index is scaled from 1 through 7, with a smaller number indicating a higher degree of freedom. The data for various countries and years used in the current paper are obtained from an on-line database provided by the International Institute for Democracy and Electoral Assistance (International IDEA).[51]

TP^{LC}_{it} and TP^{NL}_{it} in equation (1) are the key variables in this empirical specification. These variables, inspired by Häberli et al. (2012), are defined as follows:

$$TP^{LC}_{it} = \sum_{j}^{N}(RTA^{LC}_{ijt} \times TradeShare_{ijt}) \quad \text{for } i \neq j$$

$$TP^{NL}_{it} = \sum_{j}^{N}(RTA^{NL}_{ijt} \times TradeShare_{ijt}) \quad \text{for } i \neq j$$

where RTA^{LC}_{ijt} is a dummy variable taking the value one if in year t countries i and j are

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[48] http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:1:0
[49] These eight conventions are: Forced Labour Convention of 1930 (No. 29), Freedom of Association and Protection of the Right to Organise Convention of 1948 (No. 87), Right to Organise and Collective Bargaining Convention of 1949 (No. 98), Equal Remuneration Convention of 1951 (No. 100), Abolition of Forced Labour Convention of 1957 (No. 105), Discrimination (Employment and Occupation) Convention of 1958 (No. 111), Minimum Age Convention of 1973 (No. 138), and Worst Forms of Child Labour Convention of 1999 (No. 182).
[50] The real GDP per capita is measured in constant 2005 US dollars.
[51] http://www.idea.int/

both members of a RTA with labor clauses; and RTA^{NL}_{ijt} is a similar dummy variable but for a RTA *without* labor clauses. *TradeShare$_{ijt}$* is the total value of trade between the country pair in year *t* as the share in country *i*'s total value of trade with the rest of the world. In other words, TP^{LC}_{it} indicates country *i*'s trade intensity with the partners in common RTAs with labor clauses while TP^{NL}_{it} indicates the country's trade intensity with the partners in RTAs without labor clauses.[52] I define RTAs with labor clauses as the RTAs categorized in the Groups 1 through 3 that are presented in the previous section, and RTAs without labor clauses as those in Groups 4 through 6. I compute two versions of these RTA trade-intensity variables (TP^{LC}_{it} *and* TP^{NL}_{it}), for one applying the trade share in the current year (*TradeShare$_{ijt}$*) and for another applying the fixed trade share as of the year 2011 (*TradeShare$_{ij,2011}$*). The latter version is prepared to alleviate the issue of potential endogeneity between a RTA status and trade flows between/among the RTA members. The trade share for each country pair in each year (*TradeShare$_{ijt}$*) is computed using data on the bilateral trade flows sourced from the *UNCTADstat*, an on-line database provided by the UNCTAD.[53] Finally, notice that the RTA trade-intensity variables (*TP*s) in the econometric specification are one-period lagged so that I am measuring the impacts of RTAs with and without labor clauses on the domestic labor conditions in the following year.

Data for the above-mentioned variables are gathered for 220 countries and for 18 years from 1995 through 2012. Since the data are not available for all the variables for all the countries and years, however, the sample valid for the empirical analysis does not cover all of these countries and years (i.e., the sample is an unbalanced panel), and observations valid for each regression are further limited. Table 2.1 shows the summary statistics of the four labor-condition measures as well as economic control variables (i.e., variables included in **X**$_{it}$) for all the countries and years (with available data), and Table

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[52] Häberli et al. (2012) include in their empirical specification the trade intensity with RTA partners, but without separating RTAs with labor clauses from those without labor clauses.
[53] http://unctadstat.unctad.org/

2.2 shows the summary statistics of these variables only for the sample valid for the regressions. Table 3 lists countries included in the sample, indicating that only 103 countries out of 220 are covered in the sample.[54]

4.2. Effects on Trade

Another question that this paper tries to address is whether a RTA with labor clauses promotes international trade between its member countries equally to the case in which the RTA does not include labor clauses. For this purpose, I employ the following econometric specification:[55]

$$\Delta\ln(Trade_{ijt}) = a + b_1\Delta\ln(GDP_{it}) + b_2\Delta\ln(GDP_{jt})$$

$$+ c_1RTA^{LC}_{ij,t-1} + c_2RTA^{NL}_{ij,t-1} + T_tf + \eta_{ijt} \qquad (2)$$

where $Trade_{ijt}$ represents the total bilateral trade flows between countries i and j in year t; and GDP_{it} and GDP_{jt} represent GDP of country i and j in year t, respectively. The trade flows and GDP are both in the real value (measured in constant 2005 US dollars). These variables are measured as the change from the last period (indicated by the symbol Δ). Data on the real GDP are from the *World Development Indicators*. The values of bilateral trade flows are computed using the data for the real GDP that are sourced from the WDI, merchandise exports and imports as the share in the country's GDP sourced also from the WDI, and the share of trade with each partner in the country's total trade with the rest of the world that are computed from the bilateral trade data sourced from the *UNCTADstat*.

RTA^{LC}_{ijt} is a dummy taking the value one if at year t countries i and j are both members of a common RTA with labor clauses, while RTA^{NL}_{ijt} is a dummy taking the value one if at year t the two countries are both members of a RTA *without* labor clauses.

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[54] Table 3 also separates the sample countries into three income groups based on the World Bank's classification. These income groups are described more in the following Section 5.
[55] Notice that this is basically the first-differentiated version of a log-linearlized gravity equation, with RTA dummies:

The definitions of RTAs with and without labor clauses are as described in the previous subsection 4.1. Also notice that in this empirical specification these RTA dummies are lagged by one period to examine whether an increase (or decrease) of bilateral trade follows the effectuation of those RTAs.

T_t in equation (2) represents time dummies that are included to control for year-specific factors that impacted the growth of international trade commonly for all countries. η_{ijt} represents the idiosyncratic error term.

As for the first empirical approach described in subsection 4.1., the data for this second analysis are gathered for 220 countries (24,090 country pairs) and for 18 years from 1995 to 2012 (17 time points for the differential (Δ) variables). Since there are a significant number of cases in which some data are missing,[56] the number of observations valid for the regression is 143,551, which is 35.1% of the potential number of observations.[57]

5. Results of Empirical Analyses

5.1. Effects on Labor Conditions

I first estimate equation (1) without separating the trade-intensity variable (*TP*) in terms of whether or not RTAs include labor clauses, in order to examine the overall impacts of trade intensity with RTA partners on a country's domestic labor conditions. Table 4.1 reports the results of the fixed-effect estimations of the reduced version of equation (1) (with only one *TP* variable) for the four measures of labor conditions: earnings, hours, fatal injury rate, and conventions. The table reports the clustered standard error of each coefficient estimate in parentheses. In fact, for all the labor-condition measures the coefficient estimate for the RTA trade intensity is not significant, and I find no clear evidence for the possibility of a "race to the bottom" due

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[56] That is, when one or more of the three 'growth' variables ($\Delta\ln(Trade_{ijt})$, $\Delta\ln(GDP_{it})$, and $\Delta\ln(GDP_{jt})$) in equation (2) are missing. The values of these variables become missing when the data for the previous or current year are unavailable.
[57] 24,090 country pairs $\times$ 17 periods = 409,530.

to the intensive trade with RTA members overall. Table 4.2 reports the results of the same set of estimation, but when using the RTA trade-intensity variable based on the fixed trade share as of the year 2011. The results do not differ.

I now estimate the full version of equation (1) including the two separated trade-intensity variables: one for RTAs with labor clauses (TP^{LC}) and another for RTAs without labor clauses (TP^{NL}). The results are reported in Table 5.1. Although the RTA trade intensity does not indicate a significant impact on three of the four labor-condition measures (hours, fatal injury rate, and conventions) regardless of whether the RTA includes labor clauses or not, it is indeed indicated that a country that intensively trades with labor-clause inclusive RTA partners tends to have higher labor earnings (the coefficient estimate is positive and significant at the 1% level). Also notice that a country's GDP per capita is significantly correlated with labor earnings and the number of ratified conventions in the country, but the estimated coefficients on the linear and squared terms imply that earnings tend to be *lower* as the country's income level is higher.[58] On the other hand, the result for conventions indicates that a country with a higher income level tends to have more of the ILO core conventions ratified. Table 5.2 reports the results of the same set of estimation using the RTA trade-intensity variables based on the fixed trade shares, and the implied message is basically the same.[59]

Do labor clauses in a RTA impact domestic labor conditions equally for any country, or are the impacts different for countries in different income groups? To examine this question, I now estimate an extended version of equation (1) in which the RTA trade-intensity variables (TP^{LC} and TP^{NL}) are interacted with dummies indicating

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[58]   As shown in Table 2.2, the log of GDP per capita of the sample countries ranges from 5.1 to 11.3, and within this range of GDP per capita the estimated coefficients on the linear term (-20) and the square term (1.3) indicate that labor earnings will decrease as a country's GDP per capita increases.

[59]   One thing to note about the estimation with the current-share based RTA intensity variables (reported in Tables 4.1 and 5.1) is that in the regression for fatal injury, the estimated coefficients on the income terms change significantly when the RTA intensity measure is separated for labor-clause inclusive and non-inclusive RTAs, compared to when the RTA intensity variable is not separated. This result may pose a question about the quality of the data for fatal injury rate.

whether the country is a high-income, middle-income, or low-income country. I separate the sample countries into these three groups according to the World Bank's country income classification for the year 2013,[60] as shown in Table 3. The results of the estimation of this extended version are presented in 6.1. These imply that the positive correlation between labor earnings and the country's trade intensity with labor-clause inclusive RTA partners, which has been found in the previous regression (Table 5.1) is due to the significant positive correlation observed for the middle-income countries. Indeed, the coefficient is not significant for the countries in other income groups. Also note that for the middle-income countries, fatal injury rate exhibits significant association with whether or not a RTA includes labor clauses, in the way that for the middle-income countries more intensive trade with labor-clause inclusive RTA partners tends to lower its fatal injury rate although more intensive trade with labor-clause *non*-inclusive RTA partners tends to raise it. This could be interpreted that labor clauses in a RTA would help a country decrease the domestic fatal occupational injuries.[61] Table 6.2 reports the results of the same set of estimation but using the RTA trade-intensity variables based on the fixed trade shares. The results do not differ overall, except that the above-mentioned significant difference between labor-clause inclusive and non-inclusive RTAs in the impacts of the RTA trade intensity on fatal injury rate is not evident here.[62]

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[60] The World Bank's most updated country income classification was released on July 1, 2013, in which countries are income-grouped by their GNI per capita as of the year 2012. The classification is as follows: the country is low-income if its GNI per capita was $1,035 or less, middle-income if between $1,036 and $12,615, or high-income if $12,616 or above. See the World Bank's website http://data.worldbank.org/news/new-country-classifications for more details.

[61] However, we might have to be cautious in interpreting the result for fatal injury rate, especially due to the potential issue in the quality of the data on fatal injury rate, as mentioned in footnote 59.

[62] Similarly to what is mentioned in footnote 59, in the regression for fatal injury rate, when using the RTA trade intensities based on the current trade share (reported in Table 6.1), the coefficient estimates on the GDP per capita terms change from those reported in Table 5.1. Moreover, Table 6.2 reports that the coefficient estimate on the labor-clause inclusive RTA intensity takes a strange value in the regression for fatal injury rate using the RTA trade intensities based on fixed trade shares. These might also imply that one should be cautious about the quality of the data on fatal injury rate.

The results of these first set of empirical analyses that have been presented above should imply that (i) intensive trade with RTA partners by itself may not have significant impacts on domestic labor conditions in the trading countries, but that (ii) when the RTA includes labor clauses, intensive trade with other member(s) of that RTA could improve labor earnings, especially in middle-income countries.

5.2. Effects on Trade

I now examine the result of the estimation of equation (2) that tests the impacts of RTAs with and without labor clauses on trade flows between trading countries. The equation is estimated through a linear regression. The result is reported in Table 7, where the number in square brackets indicates the P-value of each coefficient estimate computed based on the robust standard error. Note that the estimated coefficients on changes in the log of GDPs of two trading countries are both significant and near one, which is consistent with the standard gravity estimation.

Let us look at the estimated coefficients on the two RTA dummies. Since the dependent variable in equation (2) is a *change* in the log of bilateral trade flows, a positive coefficient should be interpreted as meaning that having a common RTA would lead a pair of countries to a larger *increase* (or faster *growth*) in trade between them in the following year compared to the case where the countries do not have a common RTA. On the other hand, a negative coefficient should mean that having a common RTA would result in a smaller increase (or slower growth) in bilateral trade in the following year compared to the case of no common RTA membership. Table 7 shows that the estimated coefficient on the dummy for a RTA without labor clauses is insignificant and almost zero, which implies that overall a RTA may not have a significant impact on growth in trade between countries.[63] On the other hand, the estimated coefficient on the

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[63] The insignificant coefficient estimate on a RTA dummy is indeed consistent with findings in a number of existence studies on a standard log-linear gravity estimation.

dummy for a RTA *with* labor clauses is negative-valued with the P-value of 0.14. Although this estimate is not highly significant, it indicates some negative correlation between a common RTA with labor clauses and a weaker growth in bilateral trade in the following year compared to the case with no RTA relationship, implying that a RTA with labor clauses could lessen a growth in trade between the signatory countries.

Finally, as performed for the labor conditions in the previous subsection, I examine whether the impact of a labor-clause inclusive (as well as non-inclusive) RTA on a trade growth differs for countries with different income levels. For this purpose, I estimate an extended version of equation (2) in which the RTA dummies are interacted with dummies indicating the income levels of each country pair. As in the labor-condition analysis, the sample countries are classified into three income groups according to the World Bank's income classification (high-, middle-, and low-income), but since observations for this analysis are for pairs of countries, they are grouped into the following six income pairs: high-income and high-income (H-H), high and middle (H-M), high and low (H-L), middle and middle (M-M), middle and low (M-L), and low and low (L-L). Since there are two RTA dummies—with and without labor clauses—for each income pair, the extended version of equation (2) includes 12 interacted dummies.[64]

The result of the estimation is reported in Table 8. The estimated coefficients on the two countries' GDP growths are the same as those in the previous estimation. The coefficient estimates on the two RTA dummies are both insignificant for most of the country income pairs, except, as highlighted in Table 8, for the cases in which one of the pairs of countries is a middle-income country. First, for the H-M country pairs, the coefficient estimate on the dummy for a RTA with labor clauses is negative and the estimate on the dummy for a RTA without labor clauses is positive, both of which are

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[64] Indeed, in the sample there are no cases for L-L country pairs having a common RTA with labor clauses. Therefore, only 11 interacted dummies are valid in the regression, as reported in Table 8.

significant at around the 10% level. This implies that for trade between a high-income country and middle-income country, overall a RTA tends to enhance a growth in trade, but it tends to reduce the trade growth if the RTA includes labor clauses. Next, for the M-L country pairs, a relatively large negative number (-0.115) is estimated for the coefficient on the dummy for a labor-clause inclusive RTA, while it is not statistically significant (the P-value is 0.40). This could be interpreted as some (but not very strong) evidence that a RTA might have a negative impact on a growth in trade between a middle-income country and low-income country if the RTA includes labor clauses.

In sum, the result in the second empirical analysis presented in this subsection implies that including labor clauses in a RTA may weaken the trade-enhancing effect of the RTA, especially for middle-income countries; and this negative impact on trade growth could be a potential cost of the inclusion of labor clauses in a RTA.

6. Conclusion, Discussion, and Potential Future Work

This paper has attempted to address the following two questions: Are labor clauses in bilateral or plurilateral trade agreements (or RTAs) effective to prevent domestic labor conditions in the RTA member economies from being deteriorated or to even improve them? Doesn't the inclusion of labor clauses in RTAs weaken the trade-promoting effects of those RTAs compared to the case when the RTAs have no labor clauses? Two empirical approaches have been taken to examine these questions. One is designed to test whether intensive trade with the partners of common RTAs will result in better or worse domestic labor conditions in a trading country, separating the RTAs into two types: those with labor clauses and those without. The other empirical analysis is to test whether a common RTA with or without labor clauses will result in a larger or smaller increase in trade between the RTA members. The results of these analyses indicate that (i) there is no evidence for a 'race to the bottom' due to intensive trade with RTA partners; (ii) intensive trade with the partners of labor-clause inclusive

RTAs would be followed by higher labor earnings, but the effects on other labor conditions such as work hours, fatal occupational injury rate, and the number of the ILO core conventions ratified are not evident; and (iii) having a common RTA including labor clauses would reduce the growth of trade between the RTA partners. The analyses also show that these positive impact on labor earnings and negative impact on trade growth of RTAs with labor clauses concentrate in middle-income countries. This paper also presents a classification index of the nature and extent of labor or labor-related provisions in trade agreements, prepared through an extensive review of the texts of over 200 RTAs that have been notified to the WTO and are currently in effect.

Although the current paper has attempted to provide empirical evidence for the effects of labor clauses in RTAs using data that are currently available and comparable for a wide variety of countries, there are some issues for which further investigation may be desired. Here are two of such issues to which I plan to extend the current study. One is about the measures of labor conditions. In the first analysis of this paper, I employ four labor-condition measures: earnings, hours, fatal injury rate, and the number of the ILO core conventions ratified, since they are available or measurable from a single international data source (i.e., the ILO statistics). However, all of them (except for conventions) are measures of labor *outcome*, and the current study does not employ any measure of labor *standards* such as legal minimum wages or legal maximum work hours. The current study should be extended to further examine the effects of labor provisions in trade agreements on labor standards if the author find and obtain any data for those standards.[65] The other issue is possible variations in the effects of RTA labor clauses. The current analysis has shown that the impacts of RTA labor clauses should be different for countries in different income groups. However, the effects might also be different based on the income category of a trading partner (e.g., high-income partner vs.

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[65] It should be also noted that, as mentioned in previous footnotes (see footnotes 45, 59, 61, and 22), we should be cautious about the quality of some data in the ILO statistics. Hence, to extend the current empirical study, the author may have to also investigate other data source(s) than the ILO statistics for more information on labor conditions.

low-income partner), and/or based on the trading sector or industry (e.g., labor-intensive industry vs. capital-intensive industry). To investigate in more detail the difference in the effects of RTA labor clauses, the author needs to measure the RTA trade intensities based on more disaggregated trade shares for different trading partners and/or different trading sectors.

The results of the empirical analyses in this paper have a policy implication that there should be both potential benefit (i.e., better labor conditions, especially earnings) and cost (i.e., slower growth in trade) in the inclusion of labor provisions in a bilateral or regional trade agreement. However, I should also point out limitations of the current paper for a possible benefit-cost consideration of policy makers for labor clauses in trade agreements. One of the limitations is that the current study separately evidences the potential benefit and cost of the inclusion of labor clauses in a RTA, but does not quantify the benefit and cost in a comparable measure or value, and thus cannot be showing whether the benefit would exceed the cost or the reverse. This limitation is primarily due to the lack of adequate data or information for such benefit-cost quantification, but the study could convey a stronger message to policy practitioners if it offered a more fully quantified benefit-cost analysis. Other limitation is that this study—at least in the current version—has not yet examined other potential costs of the inclusion of labor clauses in RTAs. For instance, to negotiate a trade agreement with labor provisions, the negotiating parties may need to spend longer time to reach an agreement (or in the worst case, may fail to sign the agreement after a long time for negotiations) compared to the case where the parties do not have to negotiate for labor provisions. If this became the case, the negotiating parties might lose a part of potential benefit from enhanced trade that the parties could enjoy if they faster concluded negotiations for the RTA without labor clauses. I would like to leave the investigation of this potential cost of RTA labor clauses to my future work, hoping to obtain complete information on negotiation periods for various RTAs.

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Table 1.   Classification of RTAs in terms of Natures/Features of Labor Clauses or Labor-related Provisions

Group 1: RTAs requiring for domestic labor laws to be consistent with the ILO guidelines; discussing mechanism of promotion and enforcement of labor laws (7 RTAs):

> USA-Panama; USA-South Korea; USA-Colombia;
> Canada-Peru; Canada-Jordan; Canada-Colombia;
> NAFTA[*]

Group 2: RTAs urging members to have domestic labor laws consistent with the ILO without ultimate requirement; discussing mechanism of promotion and enforcement of labor laws (16 RTAs):

> USA-Oman; USA-Peru; USA-Morocco; USA-Bahrain; USA-Australia;
> USA-Chile; USA-Singapore; USA-Jordan;
> CAFTA-Dominican Republic;
> Canada-Costa Rica; Japan-Philippines; New Zealand-Malaysia;
> Turkey-Chile; Nicaragua-Taiwan; Chile-Colombia; EU-South Korea

Group 3: RTAs mentioning members' commitment to the ILO standards without requiring to have domestic labor laws to the ILO guidelines (15 RTAs):

> EFTA-Albania; EFTA-Canada; EFTA-Colombia; EFTA-Hong Kong;
> EFTA-Montenegro; EFTA-Peru; EFTA-Serbia; EFTA-Ukraine;
> Carribean Community and Common Market (CARICOM);
> Trans-Pacific Strategic Economic Partnership (TPSEP or P4)[**];
> EU-CARIFORUM States; EU-Cameroon; EU-Chile;
> Chile-China; China-New Zealand

Group 4: RTAs mentioning labor rights but not in the context of the ILO standards; mentioning to aim to improve working conditions (3 RTAs):

> Canada-Chile; Panama-Chile;
> European Free Trade Association (EFTA)

[*]   NAFTA does not require the member countries to follow the ILO guidelines, but has very detailed provisions of enforcement mechanism. I therefore categorize it into Group 1.

[**]   The agreement among Brunei, Chile, New Zealand, and Singapore, which is now being negotiated for the expanded Trans-Pacific Partnership (TPP) with other 8 countries.

Table 1, *continued***:**

: RTAs mentioning social matters such as human rights, but not labor issues exclusively (59 RTAs):

> Andean Community; Australia-New Zealand; Brunei-Japan;
> China-Hong Kong; Colombia-Mexico;
> Colombia-El Salvador & Guatemala & Honduras;
> Common Economic Zone (CEZ);
> Common Market for Eastern & Southern Africa (COMESA);
> Eastern African Community (EAC);
> Economic Community of West African States (ECOWAS);
> European Economic Area (EEA); Gulf Cooperation Council (GCC);
> Latin American Integration Association (LAIA);
> Melanesian Spearhead Group (MSG);
> Southern African Development Community (SADC);
> MERCOSUR; MERCOSUR-India;
> West African Economic and Monetary Union (WAEMU);
> Hong Kong-New Zealand; India-Japan; India-Singapore;
> Japan-Indonesia; Japan-Malaysia; Japan-Singapore; Japan-Thailand;
> Japan-Viet Nam; Pakistan-Malaysia; Peru-South Korea;
> Singapore-Australia; Thailand-New Zealand; Turkey-Jordan;
> Turkey-Palestine;
> EFTA-Chile; EFTA-Egypt; EFTA-Macedonia; EFTA-Jordan;
> EFTA-South Korea; EFTA-Lebanon; EFTA-Mexico;
> EFTA-Morocco; EFTA-Palestinian Authority; EFTA-Singapore;
> EFTA-Tunisia; EFTA-SACU
> EU-Albania; EU-Algeria; EU-Côte d'Ivoire; EU-Egypt;
> EU-Israel; EU-Jordan; EU-Lebanon; EU-Mexico; EU-Montenegro;
> EU-Morocco; EU-PNG/Fiji; EU-San Marino; EU-Serbia;
> EU-Syria; EU-Tunisia

Group 6: RTAs not mentioning any labor or social matters (123 RTAs)

> (all other RTAs notified to the WTO as of July 2013; list omitted)

**Table 2.1.   Summary Statistics for Variables in Regressions for Labor-Condition Effect;
for all data-available observations**

	Obs	Mean	Std. Dev.	Min	Max
earnings	1043	5.44	2.78	- 4.93	16.37
hours	892	57.84	45.79	6.84	259
fatal injury rate	707	7.50	29.24	0	720
conventions	3780	5.75	2.74	0	8
ln(GDP/cap)	3355	8.02	1.60	3.91	11.38
industry employment (%)	1633	23.21	7.07	2.2	58.4
manufacturing v.a. (%)	2856	13.82	7.57	0	81.90
political rights	745	2.92	1.98	1	7
civil liberties	745	3.00	1.64	1	7

**Table 2.2.   Summary Statistics for Variables in Regressions for Labor-Condition Effect;
for observations valid for the regressions**

	Obs	Mean	Std. Dev.	Min	Max
earnings	208	5.21	2.75	- 2.67	14.64
Hours	183	54.66	39.77	6.98	256
fatal injury rate	145	4.82	4.82	0	27.6
conventions	340	6.69	1.74	0	8
ln(GDP/cap)	340	8.71	1.38	5.08	11.30
industry employment (%)	340	23.57	6.73	4.2	42.1
manufacturing v.a. (%)	340	17.41	6.04	2.09	35.63
political rights	340	2.38	1.70	1	7
civil liberties	340	2.57	1.45	1	7

Table 3.   **Countries in the Sample for Labor-condition Regressions**

High-income Countries (41 countries)	Middle-income Countries (56 countries)	
Antigua & Barbuda	Albania	Romania
Australia	Argentina	Senegal
Austria	Armenia	Slovakia
Belgium	Azerbaijan	Serbia
Bahamas	Bulgaria	Suriname
Barbados	Bosnia & Herzegovina	Thailand
Canada	Belize	Tunisia
Chile	Bolivia	Turkey
Cyprus	Brazil	Ukraine
Czech Republic	Colombia	Uzbekistan
Germany	Costa Rica	St. Vincent & the Grenadines
Denmark	Cuba	Venezuela
Spain	Dominican Republic	Vietnam
Estonia	Ecuador	Samoa
Finland	Egypt	South Africa
France	Georgia	
United Kingdom	Guatemala	
Croatia	Guyana	**Low-income Countries** (6 countries)
Ireland	Honduras	
Iceland	Hungary	Benin
Italy	Indonesia	Bangladesh
Japan	Iran	Ethiopia
South Korea	Jordan	Kyrgyzstan
Kuwait	Kazakhstan	Cambodia
Lithuania	Saint Lucia	Nepal
Luxemburg	Sri Lanka	
Latvia	Morocco	
Malta	Moldova	
Netherlands	Mexico	
Norway	Macedonia	
New Zealand	Montenegro	
Poland	Mongolia	
Portugal	Mauritius	
Russian Federation	Malaysia	
Singapore	Namibia	
Slovakia	Nicaragua	
Slovenia	Pakistan	
Sweden	Panama	
Trinidad & Tobago	Peru	
Uruguay	Philippines	
United States	Paraguay	

Notes:

– The sample is not a balanced panel, so the number of data years is different across countries, ranging from 1 to 7 of the 17 time points (between years 1995 and 2012, with lagged variables).

– Income groups are based on the World Bank's income classification as of July 2013. The income groups are defined based on a country's gross national income (GNI) per capita in 2012, as follows:

    High income: $12,616 or more
    Middle income: $1,036 to $12,615
    Low income: $1,035 or less

Table 4.1. Overall Impacts of RTA intensity on Labor Conditions:
RTA intensity based on the current trade shares

	Dependent variable: Labor Condition Measure			
	Mean Monthly Earnings (log)	Mean Weakly Hours actually worked	Fatal Occupational Injury Rate (%)	No. of ILO Core Conventions ratified
RTA intensity $_{t-1}$	.303	-9.58	2.13	-.188
	(.729)	(11.5)	(1.83)	(0.382)
ln(GDP per capita)	-15.7	230.6	-4.80	11.3***
	(9.95)	(149.7)	(17.4)	(3.60)
ln(GDP per capita)^2	1.04*	-14.8	.179	-.575***
	(.547)	(11.0)	(1.08)	(.198)
Industry employment (% in total emp.)	.0160	-2.85*	.0090	-.0226
	(.0742)	(1.44)	(.180)	(.0332)
Manufacturing VA (% of GDP)	-.0455	-.977	-.0598	-.0254
	(.0583)	(1.24)	(.137)	(.0277)
Political rights index	-.0544	9.35**	1.52	-.173
	(.357)	(4.54)	(1.01)	(.120)
Civil liberty index	-.627	-3.77	-.650	.0272
	(.391)	(5.19)	(0.888)	(.170)
N	193	173	134	324
Adjusted R^2	.765	.674	.658	.820

Fixed-effect regressions for countries. Time dummies are also included. Clustered standard errors are reported in parentheses. *, **, and *** indicate the significance at the 10%, 5%, and 1%, respectively.

Table 4.2.   Overall Impacts of RTA intensity on Labor Conditions:
             RTA intensity based on the *fixed* trade shares (as of Year 2011)

	Dependent variable: Labor Condition Measure			
	Mean Monthly Earnings (log)	Mean Weakly Hours actually worked	Fatal Occupational Injury Rate (%)	No. of ILO Core Conventions ratified
RTA intensity $_{t-1}$	.510	-10.6	1.82	-.229
	(.793)	(13.7)	(2.07)	(0.407)
ln(GDP per capita)	-15.1	231.6	-5.60	11.2***
	(9.88)	(151.4)	(17.2)	(3.67)
ln(GDP per capita)^2	.996*	-14.8	.248	-.570***
	(.540)	(11.1)	(1.08)	(.202)
Industry employment	.0131	-2.84*	.0137	-.0225
(% in total emp.)	(.0743)	(1.43)	(.184)	(.0328)
Manufacturing VA	-.0469	-.977	-.0570	-.0253
(% of GDP)	(.0593)	(1.23)	(.138)	(.0277)
Political rights index	-.0633	9.38**	1.52	-.169
	(.357)	(4.55)	(1.01)	(.118)
Civil liberty index	-.602	-3.86	-.731	.0213
	(.391)	(5.05)	(0.904)	(.171)
N	193	173	134	324
Adjusted R^2	.765	.674	.656	.820

Fixed-effect regressions for countries. Time dummies are also included. Clustered standard errors are reported in parentheses. *, **, and *** indicate the significance at the 10%, 5%, and 1%, respectively.

Table 5.1. **Impacts of Labor-clause Inclusive vs. Non-inclusive RTA on Labor Conditions:
RTA intensities based on the current trade shares**

	Dependent variable: Labor Condition Measure			
	Mean Monthly Earnings (log)	Mean Weakly Hours actually worked	Fatal Occupational Injury Rate (%)	No. of ILO Core Conventions ratified
RTA intensity $_{t-1}$ with Labor Clauses	5.19*** (1.60)	-6.79 (37.3)	-14.9 (24.0)	-.204 (.690)
RTA intensity $_{t-1}$ w/o Labor Clauses	-.553 (.579)	-9.91 (13.5)	2.50 (2.12)	-.185 (.418)
ln(GDP per capita)	-20.1** (9.89)	226.6 (139.1)	-1.78 (19.0)	11.3*** (3.63)
ln(GDP per capita)^2	1.31** (.541)	-14.5 (10.2)	-.0194 (1.17)	-.576*** (.199)
Industry employment (% in total emp.)	.0705 (.0622)	-2.80 (1.90)	.0206 (.188)	-.0227 (.0342)
Manufacturing VA (% of GDP)	-.0383 (.0500)	-.966 (1.24)	-.0666 (.139)	-.0255 (.0281)
Political rights index	.136 (.310)	9.43** (4.41)	1.61 (1.00)	-.173 (.121)
Civil liberty index	-.696* (0.401)	-3.79 (5.15)	-.764 (.918)	.0275 (0.169)
N	193	173	134	324
Adjusted R^2	.778	.670	.654	.819

Fixed-effect regressions for countries. Time dummies are also included. Clustered standard
errors are reported in parentheses. *, **, and *** indicate the significance at the 10%, 5%, and
1%, respectively.

Table 5.2. Impacts of Labor-clause Inclusive vs. Non-inclusive RTA on Labor Conditions: RTA intensities based on the *fixed* trade shares (as of Year 2011)

	Dependent variable: Labor Condition Measure			
	Mean Monthly Earnings (log)	Mean Weakly Hours actually worked	Fatal Occupational Injury Rate (%)	No. of ILO Core Conventions ratified
RTA intensity $_{t-1}$ with Labor Clauses	6.34***	3.17	-75.0	-.320
	(1.43)	(34.2)	(147.0)	(.723)
RTA intensity $_{t-1}$ w/o Labor Clauses	-.198	-11.6	1.69	-.212
	(.631)	(14.8)	(1.97)	(.439)
ln(GDP per capita)	-18.3*	216.2	-5.50	11.3***
	(9.74)	(142.4)	(17.5)	(3.71)
ln(GDP per capita)^2	1.20**	-14.0	.227	-.573***
	(.534)	(10.5)	(1.11)	(.204)
Industry employment (% in total emp.)	.0681	-2.63	-.0032	-.0230
	(.0624)	(1.82)	(.192)	(.0339)
Manufacturing VA (% of GDP)	-.0440	-.949	-.0566	-.0255
	(.0521)	(1.23)	(.140)	(.0280)
Political rights index	.117	9.77**	1.57	-.170
	(.313)	(4.24)	(1.02)	(.118)
Civil liberty index	-.631	-4.00	-.764	.0229
	(0.405)	(4.94)	(.916)	(0.171)
N	193	173	134	324
Adjusted R^2	.781	.670	.652	.819

Fixed-effect regressions for countries. Time dummies are also included. Clustered standard errors are reported in parentheses. *, **, and *** indicate the significance at the 10%, 5%, and 1%, respectively.

Table 6.1. Impacts of Labor-clause Inclusive vs. Non-inclusive RTA on Labor Conditions for Countries in Different Income Levels:
RTA intensities based on the current trade shares

	Dependent variable: Labor Condition Measure			
	Mean Monthly Earnings (log)	Mean Weakly Hours actually worked	Fatal Occupational Injury Rate (%)	No. of ILO Core Conventions ratified
RTA intensity $_{t-1}$ with LC, Hi income	-3.87	156.9	-3.82	2.31
	(2.87)	(235.2)	(24.8)	(1.99)
RTA intensity $_{t-1}$ w/o LC, Hi income	-.482	-2.08	.760	.204
	(.630)	(14.1)	(1.60)	(.492)
RTA intensity $_{t-1}$ with LC, Md income	6.14***	-16.9	-764.9***	-.410
	(1.28)	(36.4)	(267.7)	(.644)
RTA intensity $_{t-1}$ w/o LC, Md income	-.423	-36.8	8.83***	-.688
	(.863)	(22.1)	(2.78)	(.516)
RTA intensity $_{t-1}$ with LC, Lo income	N.A.	N.A.	N.A.	N.A.
	(--)	(--)	(--)	(--)
RTA intensity $_{t-1}$ w/o LC, Lo income	23.0	368.3	47.4	-17.1***
	(14.5)	(342.4)	(35.6)	(4.10)
ln(GDP per capita)	-18.9*	238.1	-13.3	9.81***
	(10.2)	(145.1)	(18.6)	(3.37)
ln(GDP per capita)^2	1.24**	-14.9	-.829	-.498***
	(.564)	(10.6)	(1.10)	(.174)
Industry employment (% in total emp.)	.0581	-3.15	-.0500	-.0177
	(.0604)	(2.10)	(.232)	(.0329)
Manufacturing VA (% of GDP)	-.0394	-.195	-.101	-.0288
	(.0560)	(1.28)	(.125)	(.0280)
Political rights index	.150	9.45**	1.67	-.184
	(.313)	(4.57)	(1.02)	(.126)
Civil liberty index	-.711*	-1.62	-.753	.0711
	(0.402)	(5.47)	(.873)	(0.163)
N	193	173	134	324
Adjusted R^2	.779	.669	.680	.827

Fixed-effect regressions for countries. Time dummies are also included. Clustered standard errors are reported in parentheses. *, **, and *** indicate the significance at the 10%, 5%, and 1%, respectively.

Table 6.2. Impacts of Labor-clause Inclusive vs. Non-inclusive RTA on Labor Conditions for Countries in Different Income Levels:
RTA intensities based on the *fixed* trade shares (as of Year 2011)

	Dependent variable: Labor Condition Measure			
	Mean Monthly Earnings (log)	Mean Weakly Hours actually worked	Fatal Occupational Injury Rate (%)	No. of ILO Core Conventions ratified
RTA intensity $_{t-1}$ with LC, Hi income	-5.85 (3.55)	-12.0 (1731.7)	-50.5 (137.4)	4.25** (1.87)
RTA intensity $_{t-1}$ w/o LC, Hi income	-.340 (.657)	1.79 (12.6)	.935 (1.60)	.187 (.544)
RTA intensity $_{t-1}$ with LC, Md income	6.73*** (1.32)	7.42 (33.6)	-29731 (41654)	-.562 (.701)
RTA intensity $_{t-1}$ w/o LC, Md income	.117 (.895)	-43.6* (23.0)	15.5 (11.2)	-.905** (.448)
RTA intensity $_{t-1}$ with LC, Lo income	N.A. (--)	N.A. (--)	N.A. (--)	N.A. (--)
RTA intensity $_{t-1}$ w/o LC, Lo income	N.A. (--)	N.A. (--)	N.A. (--)	N.A. (--)
ln(GDP per capita)	-18.3* (10.1)	244.7* (140.7)	-9.05 (17.6)	12.2*** (3.76)
ln(GDP per capita)^2	1.20** (.554)	-15.8 (10.5)	.480 (1.10)	-.631*** (.206)
Industry employment (% in total emp.)	.0643 (.0624)	-2.29 (1.76)	.0368 (.185)	-.0247 (.0322)
Manufacturing VA (% of GDP)	-.0525 (.0566)	-.500 (1.09)	-.0723 (.133)	-.0184 (.0281)
Political rights index	.0711 (.317)	9.91** (4.18)	1.36 (1.02)	-.165 (.118)
Civil liberty index	-.640 (0.408)	-3.62 (4.68)	-.451 (.871)	.0338 (0.171)
N	193	173	134	324
Adjusted R^2	.780	.674	.655	.821

Fixed-effect regressions for countries. Time dummies are also included. Clustered standard errors are reported in parentheses. *, **, and *** indicate the significance at the 10%, 5%, and 1%, respectively.

**Table 7.   Impacts of Labor-clause Inclusive vs. Non-Inclusive RTA
             on Increase in Bilateral Trade**

	Dependent Variable: Δ(log of Real Bilateral Trade Value b/w Country Pair)
Δ(log of Real GDP of Country 1)	.725 [0.000]
Δ(log of Real GDP of Country 2)	.934 [0.000]
RTA dummy with Labor Clauses, lagged	-.0328 [0.137]
RTA dummy w/o Labor Clauses, lagged	.0020 [0.820]
N	143,551
R^2	.002

Year dummies are included. The P-value of rejecting the null hypothesis for each coefficient estimate based on the robust standard error is reported in square brackets.

Table 8.   Impacts of Labor-clause Inclusive vs. Non-Inclusive RTA on Increase in Bilateral Trade for Country Pairs in Different Income Groups

	Dependent Variable: Δ(log of Real Bilateral Trade Value b/w Country Pair)
Δ(log of Real GDP of Country 1)	.726 [0.000]
Δ(log of Real GDP of Country 2)	.935 [0.000]
High-High income pairs RTA dummy with Labor Clauses, lagged	-.0369 [0.446]
High-High income pairs RTA dummy w/o Labor Clauses, lagged	-.0051 [0.436]
High-Middle income pairs RTA dummy with Labor Clauses, lagged	-.0493 [0.105]
High-Middle income pairs RTA dummy w/o Labor Clauses, lagged	.0185 [0.095]
High-Low income pairs RTA dummy with Labor Clauses, lagged	-.0342 [0.744]
High-Low income pairs RTA dummy w/o Labor Clauses, lagged	-.0677 [0.601]
Middle-Middle income pairs RTA dummy with Labor Clauses, lagged	.0317 [0.443]
Middle-Middle income pairs RTA dummy w/o Labor Clauses, lagged	-.0058 [0.726]
Middle-Low income pairs RTA dummy with Labor Clauses, lagged	-.115 [0.396]
Middle-Low income pairs RTA dummy w/o Labor Clauses, lagged	-.0022 [0.945]
Low-Low income pairs RTA dummy with Labor Clauses, lagged	N.A. [--]
Low-Low income pairs RTA dummy w/o Labor Clauses, lagged	-.0031 [0.943]
N	143,551
R^2	.002

Year dummies are included. The P-value of rejecting the null hypothesis for each coefficient estimate based on the robust standard error is reported in square brackets.