

Deep Integration in Trade Agreements

Labor Clauses, Tariffs, and Trade Flows

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Abstract

Deepening preferential trade agreements extend coverage to social issues, including labor clauses. While there is a long history of debate over the intent of labor clauses, less is known about the impact of labor clauses. Recent studies show that labor clauses improve working conditions, but the impact on trade flows is still debated. Existing studies do not include a full set of fixed effects (to control for endogeneity and unobserved confounding factors), other dimensions of deep agreements that could be correlated with labor clauses (tariffs and other “deep” clauses), and pseudo-Poisson maximum likelihood estimation. This

paper combines all three with additional robustness checks. While the estimated effect of trade agreements is positive overall, the estimated marginal relationship between labor clauses and trade volume is generally negative but varies with the type of clauses. Freedom of Association, Forced and Child Labor, and International Labor Standards are consistently associated with higher trade flows. Clauses that are more likely to eliminate illicit trade, including clauses related to discrimination, protection of working conditions, and third-party monitoring exhibit a negative marginal relationship with trade flows.

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Introduction

As preferential trade agreements proliferate, they have become increasingly “deep”, meaning that they have expanded in length and scope. The depth of trade agreements motivates a growing literature that provides a detailed empirical analysis of the various clauses found in these expanded agreements (Mattoo, Rocha, and Ruta 2020). Whether or not these clauses promote or restrict trade is at the center of the current debate.¹ While trade agreements generally, and preferential trade agreements (PTAs) specifically, increase trade (Baier and Bergstrand 2004, 2007, 2009; Baier et al. 2014; and Head and Mayer 2015)² some have argued that either the intent or impact of increasing depth is to manage or possibly even reduce trade flows (Rodrik 2018).

Labor clauses are an excellent case in point. Among the 17 policy domains that Kohl et al. (2016) identify that are addressed by modern trade agreements, arguably few have been debated as much as labor clauses (ILO 2016 provides an excellent literature summary). As labor clauses become increasingly common, generating estimates of the relationship between labor clauses and trade flows is increasingly important. While there is a robust academic and political debate about whether or not labor clauses are appropriate subject matter for trade agreements,³ there is little consensus on whether labor clauses are associated with more or less trade.

Part of the lack of consensus may arise because there is little distinction between different types of labor clauses. Economic theory suggests that different kinds of labor clauses would impact trade volume in different ways. For example, the 1930 Tariff Act (specifically, section 307) prohibits imports produced with forced or child labor. If there had been imports produced with forced or child labor and the law was effective, then trade after this law went into effect should be lower, holding all else constant, because the illicitly-produced trade would be reduced or eliminated. In other words, the success of Section 307 clause would be based at least in part on the amount that trade fell, holding all other factors constant. Subsequent trade laws

¹ The PTA-trade volume relationship has been studied extensively. Contributions include Krugman 1993, Rose 2004, and Estevadeordal et al. 2008 and Robertson and Estevadeordal 2009.

² Head and Mayer (2015) point out that Cipollina and Salvatici (2010) find similar results for RTAs. Region-specific examples include Ekanayake, Mukherjee and Veeramacheneni (2010) and Kumar and Ahmed (2015).

³ Cavanagh et al. 1988, Brown et al. 1996, Elliott and Freeman 2003, Rodrik 1996, Ebert and Posthuma 2009, Addo 2015.

extended the prohibition on indentured service that theoretically would had the same effect. In October 2020, the Economist⁴ offered several specific examples of how modern trade regulations seek to reduce or eliminate trade produced with forced labor. To the extent that labor clauses either impose conditionality on trade flows or increase costs, they should be associated with lower marginal trade flows (Bhagwati 1995, Bhagwati and Hudec 1996).

At the same time, labor clauses can promote trade by facilitating cooperation, improving factory performance, creating a "haven" for reputation-conscious buyers, and harmonizing standards (Maskus 1997). Uncertainty and cross-country heterogeneity in norms, rules, and regulations increase trade costs. Labor clauses within trade agreements may establish common standards that reduce uncertainty and heterogeneity across markets and, as a result, lower business costs.

One of the most successful examples of a positive relationship between labor clauses and trade volumes was in Cambodia, when the Better Factories Program grew out of the January 20, 1999 U.S.-Cambodia Bilateral Textile Agreement that tied trade levels to improvements in compliance with Cambodian labor law and international labor standards (Beresford 2009, Robertson 2020, Robertson et al. 2021). Polaski (2004) also argues that labor clauses can reduce reputation risk for companies, which would also promote trade. Recent firm-level evidence suggests that international buyers reward factories that improve conditions with larger orders (Oka 2012, Distelhorst and Locke 2018), but these improvements were not linked to trade agreements.

Several recent papers seek to estimate the relationship between labor clauses and trade volumes. These papers identify several challenges in estimating this relationship. First, classifying labor clauses is not necessarily intuitive. As a result, few studies carefully code labor clauses. As noted above, different labor clauses could have different impacts on trade flows and grouping them hides underlying heterogeneity. Second, few studies have merged the systematic labor clause classification systems into the empirical (gravity) datasets. Third, few papers apply recent advances in approaches to estimating gravity models. Finally, labor clauses could be correlated with other factors that affect trade, such as tariffs or other “deep” clauses, leading to omitted variable bias.

⁴ In October 2020, the Economist magazine noted the increasing relationship between labor standards and trade. See <https://www.economist.com/finance-and-economics/2020/10/10/how-trade-is-being-used-to-enforce-labour-standards>.

Several recent papers make significant progress in addressing these issues. In terms of classification, most papers had simply used an indicator variable measuring the presence of labor clauses, regardless of the content of the clauses. Using such an indicator, Kamata (2014) finds no statistically significant effects of RTAs with or without labor clauses. Using the “Labor Provisions in Trade Agreements” (LABPTA) dataset created by Raess and Sari (2018), Carrere et al. (2017) extend this work by differentiating labor clauses as those with and without enforcement and labor clauses designed to foster deep cooperation. Using a sample covering the 1995-2004 period, restricted to countries with positive trade flows, and by differentiating trade flows from low-income to high-income countries, they find that enforcement has no effect on trade flows, but clauses with “deep” cooperation are associated with more trade.

Extending the analysis to include a legal-based classification of labor clauses, including different forms of enforcement, LeClercq et al. (2020) find that labor provisions, defined in their paper as a combination of standards and enforcement clauses, are associated with lower trade flows but they are accompanied by clauses that promote trade, so that the overall effect of labor clauses on trade is positive.

This paper offers three extensions to the current literature. The main question asked by this paper is whether the application of new techniques and incorporating other key characteristics of trade agreements affects the estimate of the relationship between labor clauses and trade flows. The first contribution is to apply the Pseudo-Poisson Maximum Likelihood (PPML) estimation with country-pair and importer and exporter time effects to estimate the relationship between trade flows and labor clauses. This approach is widely accepted in the gravity model literature, but has not been applied in most papers assessing the labor clause-trade flow relationship.

The second contribution is to use the depth of the Handbook of Deep Trade Agreements (HDTA) (Mattoo et al. 2020) to estimate the correlation between labor clauses and other clauses, including tariff preference margins. The effects of trade agreements on trade volumes could be due to a wide range of factors that, if not included, could bias the estimation of labor clauses on trade. For example, if agreements with larger tariff preference margins (often associated with larger tariff reductions) are more likely to include labor clauses, then estimating the effect of labor clauses without the tariff preference margins could generate positive results that are, in fact, driven by omitted variable bias. Similarly, tariffs or other “deep” clauses could

complement or offset the true effect of labor clauses. Raess, Dür, Sari. (2018) show that labor clauses in trade agreements are correlated with national characteristics, such as labor union presence and strength. If domestic labor unions help explain the presence of labor clauses, they might also explain other clauses that would therefore be correlated with labor clauses. To explore the possibility of omitted variable bias, this paper considers both the correlation between tariff preference margins, other key clauses, and labor clauses and the robustness of estimated labor clauses coefficients to the inclusions of tariff preference margins and other key dimensions of trade agreements as control variables.

The third contribution is to apply the labor clause classification system used in the HDTA. This system classifies labor clauses into five main and 18 more specific categories and contrasts with classifications that have been used in other papers. These individual clauses are described in detail in the next section.

Labor Provisions in The Handbook of Deep Trade Agreements

Labor clauses have become increasingly frequent over time. Figure 1 shows the growth of both trade agreements included in the HDTA and the labor clauses contained therein. Note the discrete increase in 2008 and 2014. This growth involves significant heterogeneity in the types of labor clauses included in trade agreements. Table 1 contains the classification system used in the HDTA.

The four main groups, represented in bold in Table 1, are: Aspirational labor goals and objectives, Substance-related labor clauses, Substance-related labor clauses related to investment, Cooperation over labor clauses, and Institutions overseeing labor commitments. The first category has two sub-categories that focus on whether or not the agreement specifies objectives of promoting labor standards or creating employment. The second category contains eleven sub-categories that focus on some of the key issues in the international labor standards debate (ILO declarations, freedom of association, child labor, and forced labor) as well as some other dimensions, such as corporate social responsibility. The third and fourth category each have only one sub-category (which is the same as having no sub-categories). The final category has three sub-categories that capture monitoring and implementation. These last three categories are the closest to enforcement but it is important to note that they are not technically comparable to the enforcement clauses identified by DeClercq et al. (2020). In fact, none of the indicators

explicitly capture whether the clauses would be subject to consequences if not implemented (effective enforcement).

Raess and Sari (2020) provide a rich and detailed background of the development of the classification system and some of the statistics that follow from it. They show that labor clauses have become more binding over time, and the growth in investment-related clauses was especially notable. At the same time, however, the rate of enforceability remains low, because most clauses are either not binding or, even if they are binding, lack access to the dispute resolution systems. As such, it is possible that the labor clauses might be bundled (or even belonging to a common template) and increasingly leveraged against other clauses in trade agreements.

To explore bundling or template effects, Table 2 shows the weighted unconditional correlation of the main categories across country pairs with agreements. The asterisk indicates whether the correlation coefficient is statistically significant at the five per cent level. The main result from Table 2 is that the aspirational section (Category 1) is not highly correlated with other clauses, but the other four categories are often found together. The highest correlation is between Categories 2 and 3 (nearly 96 per cent). Since both categories are focused on substance-related clauses, this correlation is possibly not surprising. Institutions (Category 5) are highly correlated with Categories 2 and 4 as well, with correlation coefficients greater than sixty per cent.

While not shown, the correlation between several of the subcategories is also high. In particular, the Substance Provisions 2b, 2c, and 2d are perfectly correlated. In other words, these clauses always occur in the same agreements, and do not appear in any agreements without the others. The perfect correlation is evidence of the “template” effect. The template effect has several implications. One implication is that there may not be additional empirical value from distinguishing between these subcategories (and two of the three are dropped in the empirical analysis that follows). Another is that these clauses may be complementary or address common root causes of poor working conditions.

An important dimension of labor clause heterogeneity is the difference in income between trading partners. Trade agreements between countries with similar income (whether “South-South” or “North-North”) may have different clauses than countries with different income levels (“North-South”). Figure 2 shows the relationship between the absolute difference

in log GDP per capita and the presence of each of the sub-categories. Note that some categories are more likely to be present in agreements between countries with larger differences in GDP per capita (e.g. high and low wage countries). In particular, 2a (ILO 1998 Declaration), 2b (Freedom of Association), and 2f (Protection of Working Conditions) are more likely to appear when the difference between GDP per capita is large. 2c (Forced Labor) and 2d (Child Labor) are shown as zeros in Figure 2 because they are perfectly correlated with 2b (Freedom of Association), and therefore are also more likely to appear when the difference between GDP per capita is large. On the other hand, reference to international labor standards (2h) and the clauses in Category 5 are more likely to appear in agreements between similar countries. Motivated by these patterns, the gravity model estimation explores the robustness of the results to the cases in which lower-income countries export to higher-income countries.

The Gravity Model

The most common approach to estimating the relationship between trade agreements and international trade flows is the gravity model. In the early 1960s, Tinbergen (1962) suggested that international trade explains trade flows between two countries are mostly explained by the size of each country (measured as GDP), the distance between the countries, and trade costs. To illustrate the move from the gravity model to the estimation equation, a formal presentation of the gravity model is useful.

Denoting exports from region i to region j as x_{ij} , gross domestic product in regions i and j as y_i and y_j , world nominal income as y^w , the cost in j of importing a good from i as ϖ_{ij} , a substitution elasticity between all goods from different countries as σ , and aggregate price levels (consumer price indices) for each country as P_i and P_j , we present Anderson and van Wincoop's (2003) specification of the basic gravity model as

$$x_{ij} = \frac{y_i y_j}{y^w} \left(\frac{\varpi_{ij}}{P_i P_j} \right)^{1-\sigma} \quad (1)$$

The key insight of Anderson and van Wincoop (2003), (emphasized by Anderson (2011) and Anderson and Yotov (2016)) is that “multilateral resistance” measures that are important to incorporate into gravity model estimations. These measures are represented by the P_i and P_j in (1).

The trade costs ϖ_{ij} are assumed to be, and modeled as, a function of geographic distance, information costs, and trade barriers. Information costs can include a number of variables, such as sharing a common border and common currency (Cheng and Wall 2005, Head et al. 2010, Larch et al. 2019). Trade barriers include policies, such as the presence, structure, and composition of trade agreements (including both GATT/WTO membership and participation in a regional trade agreement (RTA)). Much of the gravity literature focuses on changes along the intensive margin, meaning that countries that are engaged in trade may trade more or less due to differences in gravity-model variables.

Estimation issues

The specification in (1) lends itself to several estimation approaches. The conditional expectation of the dependent variable, bilateral imports, can be derived from the exponential conditional expectations (ECE) model such as that most clearly related to (1). In this case, the usual practice is to take the natural logarithm of (1) and adding a stochastic error term and a subscript t to represent time:

$$\log x_{ijt} = \log y^w + \beta_1 \log y_{it} + \beta_2 \log y_{jt} + \beta_3 \log \varpi_{ij} + \beta_4 \log P_i + \beta_5 \log P_j + e_{ijt} \quad (2)$$

In (2), the beta terms are the coefficients to be estimated. The first term on the right-hand side, $\log y^w$, is a constant term.

One of the main problems faced in gravity model estimation is that many country pairs do not trade every year. As a result, there is an abundance of zero values in the pair-wise data. Some studies, such as Carrere et al. (2017) avoid this problem by limiting the sample to country pairs with positive trade. Other approaches, described in Head and Meyer (2015), try to deal with the problems of zeros in the estimation directly. Heteroskedasticity is another common problem. Using Monte Carlo simulations, Santos Silva and Tenreyro (2006) compare the performance of the pseudo-Poisson maximum likelihood estimator (PPML) and OLS in the Anderson and van Wincoop (2003) gravity equation and find that heteroskedasticity induces bias in Ordinary Least Squares estimates.⁵ Although the Monte Carlo approach they use has been subsequently questioned (Martin and Pham 2020), their seminal results established their

⁵ Cheng and Wall (2005) find that unless heteroskedasticity is accounted for correctly, gravity models will typically overestimate the effects of integration with regards to trade.

proposed PPML approach in the gravity model literature. Subsequent papers build upon the PPML approach and establish its appropriateness for gravity model estimation (Santos Silva and Tenreyro 2010, 2011, 2015).

In this paper, we apply a panel-data PPML estimator that includes the multilateral resistance terms, pair-specific fixed effects, and time-varying country effects. As a result, many of the traditional gravity variables drop out of the estimation. Standard errors are clustered on trading pairs.

Construction of the Main Data Set

The dataset used in the estimation combines two separate datasets. The first dataset is the Handbook of Deep Trade Agreements (HDTA) database. The HDTA database includes a list of 279 agreements along with the year of entry and the agreement type (e.g. Free Trade Agreement, Customs Union, Economic Integration Agreement and PSA). Each chapter of the HDTA includes the relevant data tied to the name of the agreement. The HDTA also includes many, but not all, of the relevant country pairs. To complete the data, I identified the year of entry and countries included in the agreement and merged them into the HDTA database so that they could be included in the subsequent merges.

The second dataset is the 2020 version of the CEPII gravity model database (Head and Mayer 2010).⁶ These data include common language, same country, common religion, distance between countries, and contiguity. These data include several measures of trade flows that come from either the International Monetary Fund (IMF), the United Nations COMTRADE database, and the BACI (Base pour L'Analyse du Commerce International) revisions to the COMTRADE data for both total and manufacturing trade (Gaulier and Zignago 2010). The advantage of the BACI data over the raw COMTRADE data is that the applied revisions reconcile the discrepancies found between the exporter-reported and importer-reported trade volumes and adjust for data reliability. The data also include information about whether missing values are the result of no trade ("true zeros") and unreported positive flows. The empirical work that follows employs the first of two possible adjustment for the zero/missing data. The CEPII data also include Gross Domestic Product (GDP), distance (measured as the population-weighted

⁶ Data are available at http://www.cepii.fr/cepii/en/bdd_modele/bdd.asp.

kilometer distance between country pairs) and other common gravity measures. The final dataset has just over one million observations in which about half are considered to be true zeros.

Tariffs

One of the main problems with including labor clauses is that they may be correlated with the tariff changes that are part of the trade agreement. One solution is to incorporate the tariff data included in the HDTA (Mattoo et al. 2020). The HDTA includes three tariff measures at the six-digit Harmonized System (HS) level: the Most-Favored Nation (MFN) tariff level, the preferential tariff, and the tariff preference margin (the difference between the MFN tariff and the preferential tariff). The tariff preference margin (TPM) is a measure of the degree to which the preferential agreement reduces tariffs.

One of the concerns is that tariff levels, or TPMs, are correlated with labor clauses. Some industries might be more sensitive than others. For example, it seems likely that the more labor-intensive products (apparel, electronics, appliances, automobiles) might be more likely to be paired with more restrictive labor clauses. To get a heuristic sense of these relationships, Table 3 includes the unweighted and unconditional pairwise correlations between the Category-level labor clauses measures and the unweighted arithmetic average of all HS6 TPMs for sixteen industry groups (as well as the mean across all HS6 groups). The TPMs are all positive, so larger values indicate lower tariff levels (relative to the MFN tariff levels).

Positive correlations in Table 3 indicate that labor clauses would be more likely to appear when tariffs were lower and negative correlations would imply that labor clauses would appear when tariffs were higher. While it would be helpful to interpret these correlations as representing relationships that are either substitutes or complements, unfortunately it is not that straightforward. Lower tariffs might appear with labor clauses meant to reinforce and encourage trade. At the same time, lower tariffs might appear with labor clauses meant to offset the trade-creating effects of tariffs.

The second goal of Table 3 is to present some evidence about the econometric implications of omitting tariffs when estimating the relationship between labor clauses and trade flows. Thus, in addition to the sign of the correlations, the absolute magnitude can provide information about the potential omitted variable bias.

The correlation coefficients in Table 3 are calculated over all country pairs that have a trade agreement. Therefore, the coefficients are weighted by frequency and coverage. Table 3 shows that five of the eighty-five estimated correlation coefficients are positive. Given the sample size, it may not be surprising that only eight of the eighty-five are not statistically significant at the five per cent level. The negative relationship suggests that labor clauses are more likely to appear when the TPMs are smaller, or when tariffs are reduced less relative to MFN levels. This would be consistent with the idea shown in Figure 2 that some labor clauses are more likely to occur between countries with larger differences in GDP per capita.

The second main result is that the absolute values of the correlation coefficients are generally small (e.g. none above 0.20). This suggests that the potential bias from omitting tariff levels may not be too severe. Interestingly, the largest (in absolute value) coefficients are in Machinery/Electrical and in Metals.

Other Deep Provisions

Raess et al. (2018) show that domestic labor interests are correlated with the presence of labor clauses in trade agreements. With the rise of “deep” agreements, however, domestic interests have a large menu of policy levers that can serve as complements or substitutes for labor clauses.

The HDTA contains hundreds of dimensions of modern trade agreements. To identify which ones might have the most important effects on trade, Breinlich et al. (2020) apply a machine-learning lasso approach to identify which clauses might be most important in affecting trade flows. Their preliminary analysis identifies seven key clauses. These clauses are shown in Table 4. Four are Technical Barriers to Trade (TBT). Three involve the use or creation of regional and international standards and another focused on a conformity assessment. The other three are related to subsidies, antidumping, and competition policy. Table 4 provides a brief description of each.

It is both interesting and important to note that some of these focus on harmonizing standards, which has the potential for, and presumption of, increasing trade. It is well known that uncertainty can increase trade costs. By harmonizing standards, these clauses can reduce uncertainty and increase trade. It is not clear that any of these are necessarily related to labor standards, but Table 5 shows that unconditional correlation between the aggregate tariff

preference margin, each of the clauses identified by Breinlich et al. (2020), and the Category-level measures of labor clauses.

The harmonizing TBT measures are strongly correlated with the anti-dumping provision and with each other. The anti-dumping provision is also highly correlated with the labor clauses that are associated with cooperation and institutions. In general, the correlation with tariff preference margins is near zero. Of all the labor clauses, the one most strongly correlated with the other clauses is institutions. The correlation is generally positive, suggesting that these clauses come with harmonizing standards.

Overall, these correlations do not provide overwhelming support for the hypothesis that labor clauses are correlated with other clauses in ways that might obviously bias the labor clauses estimates, with the possible exception of institutions. The positive correlation, however, would suggest that a positive estimate of the institutions coefficients in earlier tables could have been picking up the trade-enhancing effect of TBT clauses.

Empirical Analysis

The empirical strategy is to start with estimates of the presence of a trade agreement and then gradually add in labor clauses, tariffs, and other trade agreement clauses. In this section, we discuss each of these results in turn.

Baseline Results

Our first step is to present the baseline gravity model results, which are shown in Table 6. As a baseline that serves to support the validity of the dataset, column (1) shows the gravity model estimates that include the “usual” variables (GDP, distance, and other country characteristics) estimated as a random effects panel model. Binary variables indicate the presence of a regional trade agreement and any labor clauses. The results are quite similar to those found in the large gravity literature: the GDP coefficients are close to one, distance has a large and negative effect on trade volume, and other coefficients on other variables (membership in the General Agreement of Tariffs and Trade (GATT) common language, and common colonial history) are positive and statically significant.

Column 1 of Table 6 suggests that regional trade agreements increase trade by about 43% ($\exp(0.356) - 1 = 0.427$) and that the presence of a labor clause in the RTA is negative and statistically significant. Column 2, estimated as a fixed-effect (using country pairs as panel variables) estimation using ordinary least squares (OLS). Including the fixed effects reduces the estimated effect of the regional trade agreement by more than half, bringing it into the 0.10 to 0.20 range commonly found in the literature. Note that the estimated coefficient on the labor clause indicator is nearly identical to the estimate in column (1).

Since the dependent variable in columns (1) and (2) is the natural logarithm of the trade value, all zero and missing values are dropped. PPML, however, can handle zero values. Column (3), estimated with PPML by applying Stata's `ppmlhdfc` command (Correia et al. 2019a, 2019b), shows that the number of observations approximately doubles to 1,088,662. Like Column (2), Column (3) includes pair-wise fixed effects but adds country-time fixed effects for both importer and exporter. The resulting estimate of the regional trade agreement falls to nearly 0.10. When the labor clauses are added in, as shown in Column (4), the PPML estimation produces results that are nearly identical to the OLS fixed effects in Column (2). As a result, the remaining tables rely on PPML with country pair fixed effects and both importer and exporter time period interaction terms.

Confounding Factors in Deep Trade Agreements: Tariffs and Other Clauses

When tariff margins and the clauses that might have the most important effects on trade are included in the gravity model, it is reasonable to expect that a dummy variable indicating the presence of a regional trade agreement would lose explanatory power. The first column of Table 7a shows that when the tariff preference margins and the seven clauses identified by Breinlich et al. (2020) are included, the estimated coefficient for the regional trade agreement variable falls to nearly zero. The tariff preference margin estimate is positive and statistically significant, suggesting that larger tariff margins are associated with larger trade flows. Interestingly, the estimated coefficients on the seven other “deep” clauses include both statistically significant positive and negative estimates. This combination seems consistent with Rodrik’s (2018) argument that “deep” clauses do not necessary lead to more trade.

When including an indicator for the presence of any labor clause in the trade agreement (as shown in column (2) of Table 7a), the estimated coefficient is negative and statistically significant. Note that the negative and statistically significant coefficient is about 20% smaller in absolute value than those shown in Table 6, but overall the negative result seems robust to including both tariffs and other “deep” clauses.

The relationship between labor clauses and trade flows should depend on the relationship between labor clauses and trade or production costs. Different labor clauses might have different effects on trade or production costs. The last column of Table 7a presents the estimates of the main categories of labor clauses coded in the HDTA. The signs and magnitudes are mixed. Substance-related clauses have a negative and relatively large estimate, while cooperation, investment, and institutions clauses have smaller positive estimates. None of the estimates are statistically significant in column (3) of Table 7a, possibly suggesting underlying heterogeneity.

To explore the underlying heterogeneity of labor clauses, Table 7b presents three columns of estimates. Column (1) disaggregates the substance-related clauses (category 2) while including the other main category variables. Column (2) disaggregates the Institutions clauses (Category 5). Categories 3 and 4 only have one sub-category so no information is added by disaggregating those. Column (3) includes all of the sub-category variables and none of the main category variables (except, technically, categories 3 and 4 in which the subcategory is the same as the main category variable). Estimation represented by each of the three columns also includes the tariff preference margin, the RTA variable, and the seven “deep” clauses discussed above, but these estimates are not shown because overall they are very similar to those in Table 7a.

In column 1, the results reveal significant underlying heterogeneity. Clauses related to freedom of association and international labor standards have large and statistically significant positive coefficients, suggesting that these clauses are associated with more trade. These results are consistent with the idea that freedom of association and collective bargaining (FACB) protections do not raise costs. It is also important to note that the freedom of association indicator is perfectly correlated with the forced labor and child labor indicators described in Table 1. Together these results are consistent with Kucera (2002), who finds a strong, positive relationship between FACB rights and investment flows based on the idea that protecting these

rights indicates strong domestic institutions, and Kucera and Sarna (2006), who find a strong positive relationship between protecting FACB rights and trade flows.

On the other hand, clauses related to discrimination, protection of working conditions, and ILO/UN instruments have large and statistically significant negative estimates. If effective, these clauses may be reducing illicit trade, either directly, through a deterrent effect, or by raising the costs of discrimination or producing with poor working conditions. In other words, these are the clauses that seem most likely to raise production costs by, for example, making sure workers are paid correctly and that workers are compensated in compliance with domestic labor laws.

Institutions, especially those that contribute to monitoring and enforcement, may also play a significant role. The results in column (2) of Table 7b suggest that setting up a private committee for monitoring is associated with more trade, but third-party monitoring is associated with less trade. Third-party monitoring (such as the Better Work program described earlier) has been shown to significantly improve compliance with domestic labor law and international labor standards (Beresford 2009, Robertson 2020, Robertson et al. 2021). The role of private committees deserves additional study.⁷

In column (3) of Table 7b, all of the subcategories are included and the results are generally similar to those presented in columns (1) and (2). Notable exceptions are that the cooperation and ILO 1998 declaration terms are both positive and at least weakly statistically significant. As noted by Raess and Sari (2020), the cooperation clauses were just as frequent in U.S. and EU agreements and grew less slowly than other clauses. Where they are more frequent, however, is in South-South agreements. In South-South agreements, enforcement is much less common.

Robustness: Manufacturing Trade

Although the country-pair and country-time interaction terms control for many of the unobserved potentially confounding factors, there are several other dimensions that might affect the results. The results in tables 6 and 7 cover all trade, but it is possible that manufacturing trade exhibits different patterns. Tables 8a and 8b follow the same structure as Tables 7a and 7b, respectively. In Table 8a, similar patterns for both the trade agreement and tariff preference

⁷ Kuruvilla et al. (2020) show that private monitoring generally fails to improve working conditions.

margins emerge, except that as labor clauses are disaggregated from a single measure to measures for the main category, the estimated regional trade agreement coefficient increases and, by column (3), reaches a marginally significant 0.131. The “deep” clause coefficient estimates follow a very similar pattern to those shown in Table 7a.

The results in Table 8b are also very similar to those in Table 7b. The freedom of association and international labor standards are significantly positive and the discrimination, working conditions, and ILO/UN instruments are significantly negative. The coefficients in category 5, Institutions, also follow a similar pattern, with consistently negative third party monitoring coefficient estimates.

Robustness: Excluding the United States as an Importer

During the 1995-2018 period, the United States has included labor clauses in all trade agreements to some degree or another. Although the included importer-year fixed effects should control for most US-related concerns, Table 9a presents the results in which the United States as an importer is excluded from the sample. The main message from Table 9a is that the results are nearly identical to those in Table 7a, with the possible exception that now substance-related provisions are now marginally statistically significant.

Table 9b follows the same format at Table 7b. Again, when the United States is excluded as an importer, the results that emerge are very similar to those in Table 7b. Freedom of Association and Collective Bargaining (again, along with the forced and child labor clauses) and international labor standards variables are positive and statistically significant. The discrimination, working conditions, and ILO/UN instruments are negative and significant. In column (3), third party monitoring is negative and statistically significant. Cooperation is positive and significant in columns (1) and (3). In other words, the main results are not driven by the United States alone.

Robustness: Income Differences

Although all of the estimations include the full set of fixed effects, it is possible that there may be different effects of labor clauses when trade is from countries with lower gross domestic product per capita towards countries with higher GDP per capita than when trade is reversed. As a heuristic first pass towards assessing whether the direction of trade between countries of

different income levels matters, we calculate the difference between the GDP per capita of the importer and the GDP per capita of the exporter and estimate the sample separately for flows going from lower-income countries to higher-income countries. While admittedly heuristic, this approach allows for income differences within “North” and “South” to matter. For example, Mexican workers may be concerned about import competition from China.

The results in Table 10a suggest that the direction of trade between countries with different gross domestic product per capita matters. For example, the anti-dumping indicator is now large, negative, and statistically significant and the tariff preference margin is not significant. Note that the labor clause indicator is negative and now larger in absolute value. Substance-related provisions, shown in column (3), have a larger negative estimated relationship with trade flows.

Table 10b, which disaggregates the labor clauses in the same way as Table 7b, shows a different focus. The negative estimates that emerge in the substance-related category are not in discrimination and ILO/UN instruments. Instead, the non-derogation of domestic labor law is now significant and negative. The cooperation clause estimates are positive and large, but the third-party monitoring estimates are negative and large.

The negative association between trade volume and both third-party monitoring and non-derogation of labor laws for lower-income exporters seems curious to those who know that there have been no successful cases within trade agreements brought to use trade agreements to enforce violations of domestic labor law (see Cimino-Isaacs 2020 for a brief description of U.S. cases brought within free trade agreements). Possible explanations include technical support provided as part of the agreement for domestic inspections (Dewan and Ronconi 2018) or effective deterrence/incentives to enforce domestic laws. Since the results in Table 9b cannot distinguish between these, the estimated negative result suggests an area for continued research.⁸

Conclusion

In recent years, trade agreements have included increasingly long and detailed clauses. Whether or not these clauses increase or decrease trade has been a matter of contentious debate.

⁸ Aissi et al. (2018) explain how to evaluate this hypothesis and Kamata (2016) and Martinez-Zarzoso and Kruse (2019) are examples of the debate over whether trade agreements improve working conditions.

From a theoretical standpoint, the issue is complex; some types of clauses would necessarily be associated with lower trade volumes, such as those that reduce illicit trade. These clauses might limit imports from factories that underpay their workers, take advantage of discriminatory wage practices, or do not comply with domestic and international standards. Other clauses, such as those that lower trade costs by harmonizing standards or by promoting good institutions, would be associated with more trade. These “good institutions” include Freedom of Association, Collective Bargaining, and efforts to end forced and child labor.

This paper seeks to improve on previous work, which has been limited by the lack of relevant coded data. It uses the new Handbook of Deep Trade Agreements and recent advances in gravity model estimation techniques to generate estimates of the relationship between very detailed labor clauses and bilateral trade flows. The results of this paper are robust not only when limited to manufacturing trade and trade excluding the U.S., but also change little when tariff margins and other clauses are factored in. Different results do emerge, however, when trade is limited to lower-income exporters. In this case, enforcement and clauses that are related to non-derogation of domestic labor law are associated with less trade. This relationship is a promising sign of a reduction in illicit trade, as factories that do not comply with international labor standards are excluded. This finding also supports the existing body of work that finds that labor clauses in trade agreements are associated with improvements in working conditions.

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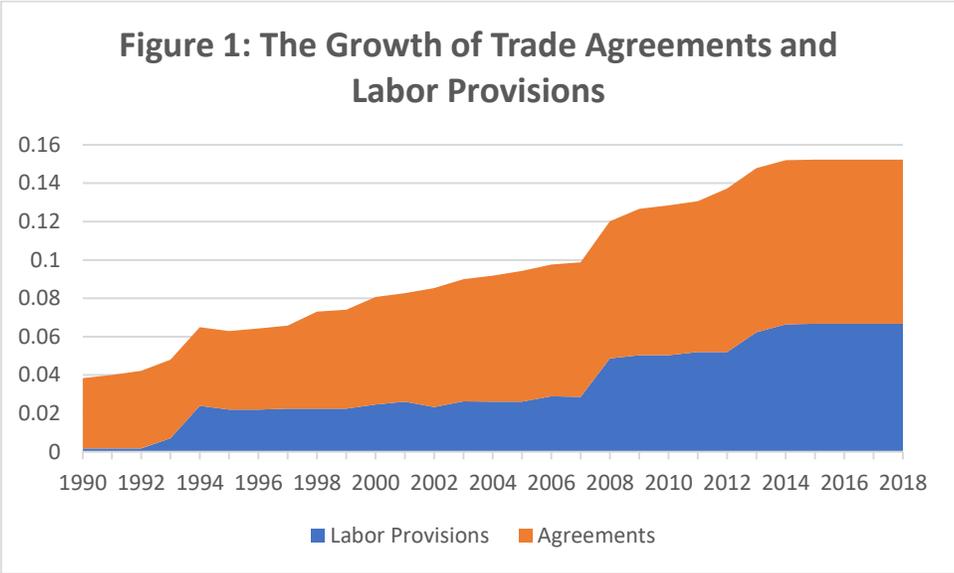
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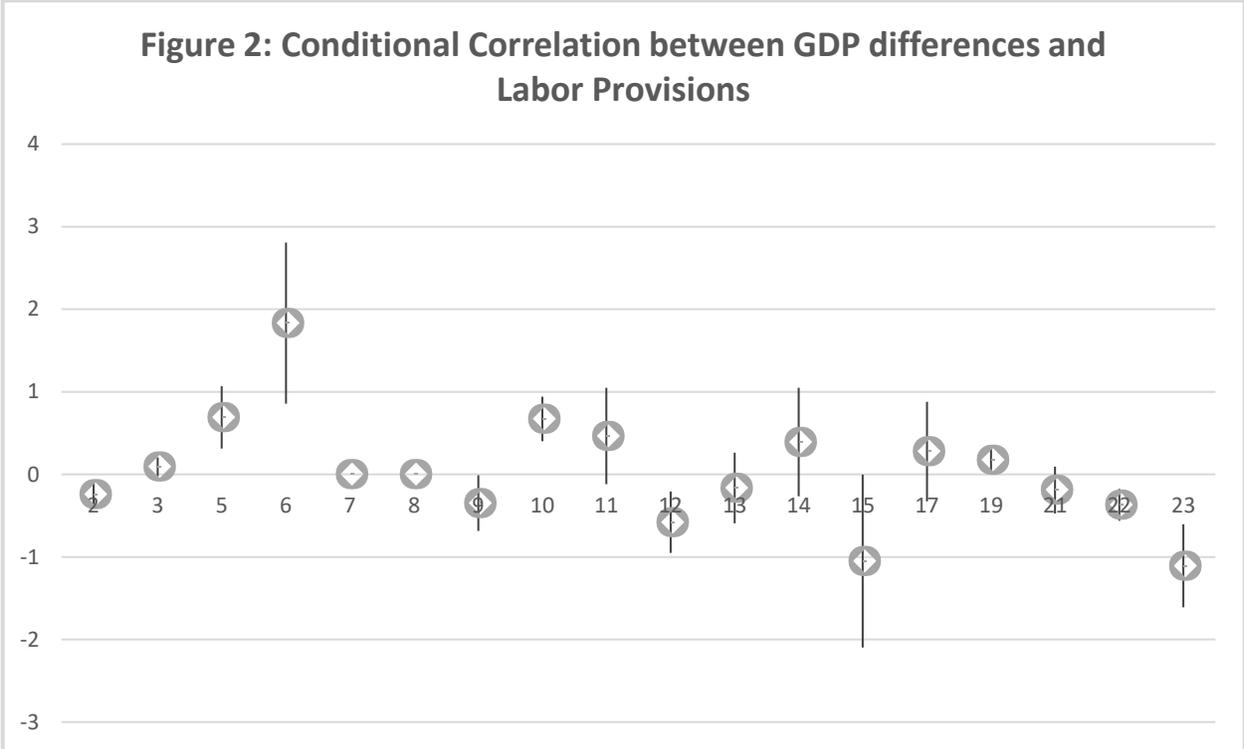
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Notes: Figure shows the coverage of total country pairs that are engaged in a trade agreement in the Handbook of Deep Trade Agreements data that also have data from the CEPII gravity model dataset as shown in Figure 2.



Notes: The dots represent coefficient estimates of a dummy variable equal to one if a given labor provision is present in an agreement between a country pair regressed on the absolute value of difference in the natural logarithm of the per capita gross domestic product (GDP) of each country pair with a trade agreement in 2016. Lines represent the 95% confidence interval. The numbers correlate to the labor clauses listed in Table 1. Estimates for sub-categories 7 and 8 are shown as zero because they are perfectly correlated with sub-category 6.

Table 1: Handbook Categories of Labor Provisions

<u>Question</u>	<u>Reference</u>
1. Aspirational labor goals/objectives	01
1a. Does the agreement specify an objective of protection or promotion of labor standards?	02
1b. Does the agreement specify an objective of creation of employment opportunities?	03
2. Substance-related labor clauses	04
2a. Does the agreement include reference to the ILO 1998 Declaration on Fundamental Principles and Rights at Work (and its Follow-Up)?	05
2b. Does the agreement include reference to protection/promotion of freedom of association, right to strike and/or collective bargaining?	06
2c. Does the agreement include reference to the elimination of all forms of forced or compulsory labor?	07
2d. Does the agreement include reference to the abolition of child labor?	08
2e. Does the agreement include reference to the elimination of discrimination in respect of employment and occupation?	09
2f. Does the agreement include reference to the protection/promotion of working conditions and terms of employment?	10
2g. Does the agreement include reference to other relevant international instruments, such as the ILO 2008 Declaration on Social Justice for a Fair Globalization; the ILO's Decent Work agenda; and the UN ECOSOC 2006 Ministerial Declaration on Generating Full and Productive Employment and Decent Work for All	11
2h. Does the agreement include reference to internationally recognized labor standards?	12
2i. Does the agreement include reference to corporate social responsibility?	13
2j. Does the agreement include reference to the non-derogation from domestic labor laws?	14
2k. Does the agreement include reference to the effective enforcement of domestic labor laws?	15
3. Substance-related labor clauses in relation to investment	16
3a. Does the agreement require investors to act in accordance with the protection or promotion of labor standards?	17
4. Cooperation over labor clauses	18
4a. Does the agreement include reference to cooperation over labor clauses?	19
5. Institution overseeing labor commitments	20
5a. Does the agreement establish a separate specialized committee/contact points for the monitoring and implementation of labor clauses?	21
5b. Does the agreement provide for third party (e.g. social partners, civil society organizations, ILO etc.) inclusion in the monitoring and implementation of labor clauses?	22
5c. Does the agreement require states to prepare a labor impact assessment of the PTA?	23

Notes: See the Handbook for Deep Trade Agreements as described in the text. The category numbers differ from those in the Handbook for purposes of exposition. Note that in categories 3 and 4, data for header categories are identical to the sub category because there is only one subcategory.

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Table 2: Unconditional Correlation Coefficients between Main Labor Provisions Categories

	1. Aspirational labor goals/objectives	2. Substance-related labor clauses	3. Investment	4. Cooperation
2. Substance-related labor clauses	0.0415*			
3. Investment	-0.0748*	0.9572*		
4. Cooperation	-0.2540*	0.5605*	0.5574*	
5. Institutions	0.1118*	0.6311*	0.5513*	0.6773*

Notes: * indicates statistically significant correlation at the 5 per cent level. Correlations are calculated over the country pairs with active trade agreements.

**Table 3: Unconditional Correlations between
Labor Provisions and HS2 Mean Tariff Preference Margins**

<u>HS2</u>	<u>Description</u>	<u>1. Aspirational goals/objectives</u>	<u>2. Substance- related</u>	<u>3. Investment</u>	<u>4. Cooperation</u>	<u>5. Institutions</u>
N.A.	Mean	-0.1250*	-0.0945*	-0.1123*	-0.0227*	-0.0349*
01-05	Animal Products	-0.0124*	-0.0299*	-0.0593*	0.0037	-0.0069*
06-15	Vegetable Products	-0.0861*	-0.0317*	-0.0462*	0.0263*	-0.0116*
16-24	Foodstuffs	-0.0926*	-0.0396*	-0.0548*	-0.0178*	-0.0215*
25-27	Mineral Products	-0.1069*	-0.0843*	-0.0935*	-0.0379*	-0.0638*
28-38	Chemicals	-0.1244*	-0.0846*	-0.0985*	-0.0044	-0.0411*
39-40	Plastics/Rubbers	-0.1464*	-0.0781*	-0.0904*	0.0054	-0.0346*
41-43	Leather et al.	-0.0672*	-0.0818*	-0.0941*	-0.0442*	-0.0062
44-49	Wood Products	-0.1444*	-0.1318*	-0.1323*	-0.0616*	-0.0684*
50-60, 63	Fabrics	-0.0847*	-0.0799*	-0.0996*	0.0017	-0.0006
61-62	Apparel	-0.0516*	-0.0437*	-0.0666*	-0.0273*	0.0189*
64-67	Footwear/Headgear	-0.0861*	-0.0701*	-0.0872*	-0.0202*	-0.0173*
68-71	Stone/Glass	-0.1137*	-0.0936*	-0.1079*	-0.0364*	-0.0431*
72-83	Metals	-0.1557*	-0.1119*	-0.1174*	-0.0003	-0.0616*
84-85	Machinery/Electrical	-0.1758*	-0.1121*	-0.1100*	-0.0061	-0.0736*
86-89	Transportation	-0.1137*	-0.0895*	-0.1011*	-0.0535*	-0.0616*
90-97	Miscellaneous	-0.1497*	-0.1263*	-0.1283*	-0.0125*	-0.0615*

Notes: Column headings correspond to categories shown in bold in Table 1. Animal Products includes animals. Fabrics includes other raw materials. Wood products includes Wood. The unconditional correlation coefficients are calculated across all country pairs with a trade agreement. The * indicates statistical significance at the 5 per cent level.

**Table 4: Breinlich et al. (2020) Identified Non-labor Provisions
affecting Trade Flows**

<u>Main Category</u>	<u>Section</u>	<u>Detail</u>
Subsidies	II. Substantive Disciplines	Does the agreement include any other specific discipline for certain sectors or objectives?
Antidumping	Determination of Injury	Material Injury
Competition Policy	Section I (non-sectoral clauses)	Contains clauses that promote transparency, such that parties should be informed of competition concerns
Technical Barriers to Trade A	A. Standards	Is the use or creation of regional standards promoted?
Technical Barriers to Trade B	A. Standards	Is the use of international standards promoted?
Technical Barriers to Trade C	B. Technical Regulations	Is the use of international standards promoted?
Technical Barriers to Trade D	C. Conformity Assessment	Is mutual recognition in force?

Notes: Provisions identified preliminarily by Breinlich et al. (2020).

Table 5: Unconditional Correlation between Tariffs, Other Key Provisions, and Labor Provisions

	Tariff Preference Margins	Anti-dumping	Competition Policy	Subsidies	TBT A	TBT B	TBT C	TBT D
Antidumping	-0.065*							
Competition Policy	-0.030*	-0.0890*						
Subsidies	0.120*	-0.1174*	0.2321*					
TBT A	0.063*	0.7650*	-0.1080*	0.1316*				
TBT B	-0.054*	0.7383*	-0.0996*	0.1794*	0.6622*			
TBT C	-0.038*	0.7133*	-0.1115*	0.1853*	0.6324*	0.9340*		
TBT D	0.017*	0.0212*	-0.0077*	0.0144*	-0.0178*	-0.0188*	0.0336*	
Aspirations	-0.119*	-0.2236*	0.2521*	0.0806*	-0.2641*	-0.2496*	-0.2672*	-0.0097*
Substance	-0.083*	-0.1168*	-0.0080*	-0.0100*	-0.1340*	-0.1404*	-0.1501*	-0.0166*
Substance: Invest	-0.102*	-0.1027*	-0.0781*	-0.0994*	-0.1180*	-0.1260*	-0.1321*	-0.0064*
Cooperation	-0.022*	0.4464*	-0.1963*	-0.0961*	0.2957*	0.2630*	0.2854*	-0.0302*
Institutions	-0.038*	0.5557*	0.0105*	-0.0294*	0.4042*	0.3725*	0.3705*	-0.0138*

Notes: The * indicates significant at the 5 per cent level. TBT represents Technical Barriers to Trade as described in Table 11.

**Table 6: Baseline Gravity Model Estimation
with Aggregate Labor Clause Indicator**

VARIABLES	(1)	(2)	(3)	(4)
	OLS RE	OLS FE	PPML Full FE	PPML Any Labor Clause
Regional Trade Agreement Indicator	0.356*** (0.0222)	0.165*** (0.0246)	0.0965** (0.0397)	0.164*** (0.0493)
Any Labor Clause Indicator		-0.209*** (0.0301)		-0.193*** (0.0524)
GDP Importer	0.882*** (0.00600)	0.767*** (0.0165)		
GDP Exporter	1.043*** (0.00642)	0.525*** (0.0191)		
1 = Contiguity	1.348*** (0.0927)			
Origin GATT membership	0.563*** (0.0299)			
Destination GATT membership	0.192*** (0.0283)			
1 = Common official or primary language	0.779*** (0.0376)			
1 = Common colonizer post 1945	0.368*** (0.0479)			
Distance (Pop weighted)	-1.269*** (0.0169)			
Constant	-16.81*** (0.226)	-15.13*** (0.454)	16.22*** (0.0205)	16.21*** (0.0215)
Observations	501,256	501,256	1,088,662	1,088,662
Number of Country Pairs	32,554	32,554	32,554	32,554

Notes: Robust standard errors in parentheses (clustered on country pairs). *** p<0.01, ** p<0.05, * p<0.1. In columns (1) and (2), OLS RE (FE) stands for Ordinary Least Squares Random (Fixed) Effects. The dependent variable in columns (1) and (2) is the natural log of the zero-corrected nominal imports from the CEPII-BACI dataset. The data cover 1995-2018. In columns (3) and (4), PPML stands for Pseudo Poisson Maximum Likelihood and both (3) and (4) include country-pair fixed effects and importer and exporter time period interaction terms estimated with Stata's *ppmlhdfe* command (Correia et al. 2019a, 2019b). The gravity variables in columns (1) and (2) are from the CEPII Gravity dataset and the regional trade agreement indicator and labor clause indicator are from the Handbook of Deep Trade Agreements.

Table 7a: Including Deep Trade Agreement Clauses

VARIABLES	(1) Deep Provisions	(2) Any Labor Clause	(3) Main Categories
Trade Agreement	-0.004 (0.066)	0.042 (0.071)	0.068 (0.073)
Tariff Preference Margin	0.030*** (0.010)	0.031*** (0.009)	0.029*** (0.009)
Any Labor Clause		-0.166*** (0.061)	
1. Aspirational goals/objectives			-0.126 (0.157)
2. Substance-related clauses			-0.427 (0.313)
3. Substance-related labor clauses: investment			0.048 (0.103)
4. Cooperation over labor clauses			0.040 (0.125)
5. Institutions overseeing labor commitments			0.065 (0.246)
Anti-Dumping	-0.405 (0.338)	-0.395 (0.337)	-0.418 (0.326)
Competition Policy	-0.023 (0.081)	-0.028 (0.080)	-0.016 (0.082)
Subsidies	-0.290*** (0.087)	-0.187** (0.093)	-0.164* (0.090)
Technical Barriers A	0.669*** (0.205)	0.590*** (0.208)	0.593*** (0.209)
Technical Barriers B	-0.547** (0.229)	-0.468** (0.220)	-0.414* (0.229)
Technical Barriers C	-0.003 (0.123)	0.046 (0.112)	-0.011 (0.127)
Technical Barriers D	-0.122 (0.302)	-0.180 (0.299)	-0.106 (0.296)
Constant	16.271*** (0.034)	16.253*** (0.035)	16.243*** (0.038)
Observations	1,088,662	1,088,662	1,088,662

Notes: Robust standard errors in parentheses (clustered on country pairs).. ***
p<0.01, ** p<0.05, * p<0.1. The data cover 1995-2018. Estimation in all columns

include country-pair fixed effects and importer and exporter time period interaction terms estimated with Stata's *ppmlhdfe* command (Correia et al. 2019a, 2019b).

Table 7b: Disaggregated Labor Clause Categories

VARIABLES	(4) Group 2	(5) Group 5	(6) All SubCategories
1. Aspirational goals/objectives	-0.260** (0.132)	-0.168 (0.144)	
2. Substance-related clauses		-0.750*** (0.198)	
2a. ILO 1998 Declaration	0.157 (0.117)		0.227** (0.112)
2b. Freedom of Association	0.465** (0.194)		0.636*** (0.180)
2e. Discrimination	-0.596*** (0.118)		-0.598*** (0.109)
2f. Protection of Working Conditions	-0.539*** (0.096)		-0.518*** (0.084)
2g. ILO/UN Instruments	-0.723*** (0.169)		-0.581*** (0.150)
2h. International Labor Standards	0.633*** (0.198)		0.460*** (0.166)
2i. Corporate Social Responsibility	0.042 (0.127)		0.012 (0.123)
2j. Domestic Labor Laws: Non-derogation	-0.150 (0.157)		-0.239 (0.148)
2k. Domestic Labor Laws Enforcement	-0.098 (0.152)		-0.108 (0.150)
3. Substance-related labor clauses: investment	0.014 (0.112)	-0.022 (0.096)	-0.042 (0.100)
4. Cooperation over labor clauses	0.143* (0.086)	0.083 (0.140)	0.172* (0.095)
5. Institutions overseeing labor commitments	0.043 (0.196)		
5a. Separate Committee for Monitoring		0.516*** (0.126)	0.104 (0.133)
5b. Third Party Monitoring		-0.278* (0.161)	-0.250* (0.132)
5c. Labor Impact Assessment		0.100 (0.113)	0.067 (0.102)
Constant	16.243*** (0.034)	16.252*** (0.037)	16.234*** (0.034)
Observations	1,088,662	1,088,662	1,088,662

Notes: Robust standard errors in parentheses (clustered on country pairs). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The data cover 1995-2018. Estimation in all columns include country-pair fixed effects and importer and exporter time period interaction terms estimated with Stata's *ppmlhdfe* command (Correia et al. 2019a, 2019b). Estimation in all columns also include controls for the regional trade agreement, tariff preference margins, and the seven "deep" clauses shown in Table 4. Estimation in column 3 also includes the two subcategories for category 1 shown in Table 1.

Table 8a: Manufacturing Only

VARIABLES	(1) Deep Provisions	(2) Any Labor Clause	(3) Main Categories
Trade Agreement	0.043 (0.067)	0.110 (0.069)	0.131* (0.069)
Tariff Preference Margin	0.027*** (0.011)	0.028*** (0.009)	0.027*** (0.009)
Any Labor Clause		-0.217*** (0.060)	
1. Aspirational goals/objectives			-0.116 (0.160)
2. Substance-related clauses			-0.233 (0.315)
3. Substance-related labor clauses: investment			0.069 (0.101)
4. Cooperation over labor clauses			0.012 (0.120)
5. Institutions overseeing labor commitments			-0.166 (0.235)
Anti-Dumping	0.045 (0.341)	0.061 (0.341)	0.022 (0.324)
Competition Policy	0.034 (0.078)	0.029 (0.076)	0.046 (0.077)
Subsidies	-0.398*** (0.088)	-0.264*** (0.092)	-0.240*** (0.090)
Technical Barriers A	0.777*** (0.214)	0.673*** (0.215)	0.688*** (0.216)
Technical Barriers B	-0.773*** (0.226)	-0.670*** (0.212)	-0.637*** (0.219)
Technical Barriers C	-0.072 (0.131)	-0.015 (0.116)	-0.060 (0.128)
Technical Barriers D	-0.231 (0.293)	-0.300 (0.291)	-0.222 (0.281)
Constant	16.217*** (0.034)	16.191*** (0.035)	16.176*** (0.036)
Observations	1,080,596	1,080,596	1,080,596

Notes: Robust standard errors in parentheses (clustered on country pairs).. *** p<0.01, ** p<0.05, * p<0.1. The data cover 1995-2018. Estimation in all columns include country-pair fixed effects and importer and exporter time period interaction terms estimated with Stata's *ppmlhdfe* command (Correia et al. 2019a, 2019b).

**Table 8b: Manufacturing Only
Disaggregated Labor Clauses**

VARIABLES	(4) Group 2	(5) Group 5	(6) All SubCategories
1. Aspirational goals/objectives	-0.258* (0.135)	-0.166 (0.144)	
2. Substance-related clauses		-0.662*** (0.196)	
2a. ILO 1998 Declaration	0.096 (0.110)		0.135 (0.099)
2b. Freedom of Association	0.536*** (0.208)		0.668*** (0.182)
2e. Discrimination	-0.642*** (0.111)		-0.613*** (0.105)
2f. Protection of Working Conditions	-0.573*** (0.095)		-0.524*** (0.083)
2g. ILO/UN Instruments	-0.750*** (0.165)		-0.547*** (0.142)
2h. International Labor Standards	0.715*** (0.178)		0.450*** (0.140)
2i. Corporate Social Responsibility	0.111 (0.133)		0.100 (0.119)
2j. Domestic Labor Laws: Non-derogation	-0.075 (0.179)		-0.151 (0.157)
2k. Domestic Labor Laws Enforcement	-0.058 (0.192)		-0.103 (0.176)
3. Substance-related labor clauses: investment	-0.005 (0.094)	0.009 (0.096)	-0.051 (0.089)
4. Cooperation over labor clauses	0.164** (0.078)	0.073 (0.119)	0.157* (0.085)
5. Institutions overseeing labor commitments	-0.194 (0.175)		
5a. Separate Committee for Monitoring		0.549*** (0.123)	0.155 (0.130)
5b. Third Party Monitoring		-0.400*** (0.139)	-0.332*** (0.110)
5c. Labor Impact Assessment		-0.007 (0.109)	-0.092 (0.095)
Constant	16.177*** (0.032)	16.187*** (0.035)	16.166*** (0.031)
Observations	1,080,596	1,080,596	1,080,596

Notes: Robust standard errors in parentheses (clustered on country pairs). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The data cover 1995-2018. Estimation in all columns include country-pair fixed effects and importer and exporter time period interaction terms estimated with Stata's *ppmlhdfe* command (Correia et al. 2019a, 2019b). Estimation in all columns also include controls for the regional trade agreement, tariff preference margins, and the seven "deep" clauses shown in Table 4. Estimation in column 3 also includes the two subcategories for category 1 shown in Table 1.

Table 9a: Excluding USA as Importer

VARIABLES	(1) Deep Provisions	(2) Any Labor Clause	(3) Main Categories
Trade Agreement	0.017 (0.071)	0.049 (0.075)	0.065 (0.078)
Tariff Preference Margin	0.029*** (0.011)	0.030*** (0.010)	0.030*** (0.009)
Any Labor Clause		-0.151** (0.066)	
1. Aspirational goals/objectives			-0.107 (0.157)
2. Substance-related clauses			-0.557* (0.320)
3. Substance-related labor clauses: investment			0.173 (0.117)
4. Cooperation over labor clauses			0.068 (0.127)
5. Institutions overseeing labor commitments			0.007 (0.263)
Anti-Dumping	-0.453 (0.327)	-0.446 (0.326)	-0.475 (0.313)
Competition Policy	-0.024 (0.083)	-0.027 (0.083)	-0.016 (0.084)
Subsidies	-0.297*** (0.090)	-0.196** (0.098)	-0.160* (0.091)
Technical Barriers A	0.688*** (0.207)	0.613*** (0.209)	0.616*** (0.209)
Technical Barriers B	-0.581** (0.238)	-0.503** (0.229)	-0.427* (0.235)
Technical Barriers C	-0.006 (0.128)	0.042 (0.117)	-0.010 (0.130)
Technical Barriers D	-0.091 (0.294)	-0.143 (0.291)	-0.071 (0.287)
Constant	15.948*** (0.027)	15.934*** (0.028)	15.924*** (0.030)
Observations	1,083,837	1,083,837	1,083,837

Notes: Robust standard errors in parentheses (clustered on country pairs).. *** p<0.01, ** p<0.05, * p<0.1. The data cover 1995-2018. Estimation in all columns include country-pair fixed effects and importer and exporter time period interaction terms estimated with Stata's *ppmlhdfc* command (Correia et al. 2019a, 2019b).

Table 9b: Excluding USA as Importer

VARIABLES	(4) Group 2	(5) Group 5	(6) All SubCategories
1. Aspirational goals/objectives	-0.245* (0.132)	-0.158 (0.141)	
2. Substance-related clauses		-0.915*** (0.207)	
2a. ILO 1998 Declaration	0.154 (0.118)		0.224** (0.114)
2b. Freedom of Association	0.552*** (0.198)		0.706*** (0.180)
2e. Discrimination	-0.705*** (0.127)		-0.711*** (0.107)
2f. Protection of Working Conditions	-0.515*** (0.102)		-0.473*** (0.084)
2g. ILO/UN Instruments	-0.766*** (0.178)		-0.557*** (0.151)
2h. International Labor Standards	0.666*** (0.199)		0.455*** (0.168)
2i. Corporate Social Responsibility	0.043 (0.128)		0.009 (0.129)
2j. Domestic Labor Laws: Non-derogation	-0.148 (0.159)		-0.270* (0.145)
2k. Domestic Labor Laws Enforcement	-0.121 (0.155)		-0.150 (0.147)
3. Substance-related labor clauses: investment	0.081 (0.134)	0.082 (0.112)	0.019 (0.103)
4. Cooperation over labor clauses	0.191** (0.089)	0.074 (0.145)	0.171* (0.097)
5. Institutions overseeing labor commitments	-0.049 (0.202)		
5a. Separate Committee for Monitoring		0.567*** (0.131)	0.149 (0.134)
5b. Third Party Monitoring		-0.260 (0.160)	-0.274** (0.124)
5c. Labor Impact Assessment		0.034 (0.127)	0.013 (0.105)
Constant	15.935*** (0.028)	15.934*** (0.029)	15.928*** (0.028)
Observations	1,083,837	1,083,837	1,083,837

Notes: Robust standard errors in parentheses (clustered on country pairs). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The data cover 1995-2018. Estimation in all columns include country-pair fixed effects and importer and exporter time period interaction terms estimated with Stata's *ppmlhdfe* command (Correia et al. 2019a, 2019b). Estimation in all columns also include controls for the regional trade agreement, tariff preference margins, and the seven "deep" clauses shown in Table 4. Estimation in column 3 also includes the two subcategories for category 1 shown in Table 1.

Table 10a: Lower Income Exporters

VARIABLES	(1) Deep Provisions	(2) Any Labor Clause	(3) Main Categories
Trade Agreement	0.067 (0.129)	0.106 (0.131)	0.134 (0.130)
Tariff Preference Margin	0.020 (0.027)	0.027 (0.025)	0.028 (0.025)
Any Labor Clause		-0.225*** (0.080)	
1. Aspirational goals/objectives			-0.158 (0.199)
2. Substance-related clauses			-0.612** (0.283)
3. Substance-related labor clauses: investment			-0.002 (0.096)
4. Cooperation over labor clauses			0.148 (0.122)
5. Institutions overseeing labor commitments			-0.016 (0.255)
Anti-Dumping	-0.771*** (0.245)	-0.739*** (0.258)	-0.733*** (0.257)
Competition Policy	-0.021 (0.138)	-0.034 (0.136)	-0.016 (0.136)
Subsidies	-0.502*** (0.131)	-0.381*** (0.130)	-0.281** (0.127)
Technical Barriers A	1.342*** (0.327)	1.194*** (0.337)	1.087*** (0.334)
Technical Barriers B	0.345 (0.330)	0.384 (0.331)	0.437 (0.336)
Technical Barriers C	0.313*** (0.109)	0.342*** (0.107)	0.174 (0.135)
Technical Barriers D	-0.196 (0.197)	-0.241 (0.205)	-0.075 (0.218)
Constant	16.355*** (0.042)	16.340*** (0.044)	16.325*** (0.049)
Observations	646,327	646,327	646,327

Notes: Robust standard errors in parentheses (clustered on country pairs).. *** p<0.01, ** p<0.05, * p<0.1. The data cover 1995-2018. Estimation in all columns include country-pair fixed effects and importer and exporter time period interaction terms estimated with Stata's *ppmlhdfc* command (Correia et al. 2019a, 2019b).

**Table 10b: Lower-Income Exporters
Disaggregated Labor Clause Categories**

VARIABLES	(4) Group 2	(5) Group 5	(6) All SubCategories
1. Aspirational goals/objectives	-0.180 (0.206)	-0.174 (0.198)	
2. Substance-related clauses		-0.549** (0.235)	
2a. ILO 1998 Declaration	0.315* (0.164)		0.421** (0.165)
2b. Freedom of Association	0.173 (0.258)		0.297 (0.253)
2e. Discrimination	-0.233 (0.158)		-0.136 (0.131)
2f. Protection of Working Conditions	-0.225* (0.120)		-0.206* (0.115)
2g. ILO/UN Instruments	-0.260 (0.191)		-0.062 (0.189)
2h. International Labor Standards	0.388 (0.258)		0.318 (0.229)
2i. Corporate Social Responsibility	-0.076 (0.132)		-0.375** (0.162)
2j. Domestic Labor Laws: Non-derogation	-0.408** (0.184)		-0.546** (0.218)
2k. Domestic Labor Laws Enforcement	-0.200 (0.156)		-0.130 (0.182)
3. Substance-related labor clauses: investment	-0.005 (0.104)	-0.147 (0.104)	-0.142 (0.110)
4. Cooperation over labor clauses	0.166 (0.120)	0.365*** (0.131)	0.328*** (0.120)
5. Institutions overseeing labor commitments	-0.063 (0.263)		
5a. Separate Committee for Monitoring		0.142 (0.156)	0.010 (0.198)
5b. Third Party Monitoring		-0.452*** (0.123)	-0.501*** (0.121)
5c. Labor Impact Assessment		0.273** (0.139)	0.367** (0.161)
Constant	16.326*** (0.048)	16.338*** (0.048)	16.321*** (0.046)
Observations	646,327	646,327	646,327

Notes: Robust standard errors in parentheses (clustered on country pairs). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The data cover 1995-2018. Estimation in all columns include country-pair fixed effects and importer and exporter time period interaction terms estimated with Stata's *ppmlhdfe* command (Correia et al. 2019a, 2019b). Estimation in all columns also include controls for the regional trade agreement, tariff preference margins, and the seven "deep" clauses shown in Table 4. Estimation in column 3 also includes the two subcategories for category 1 shown in Table 1.