WORKING PAPERS

UNIVERSITAT JAUME I

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2026 / 01

Castellón (Spain)

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Abstract

This paper examines how labor provisions in trade agreements affect labor rights in developing countries. Using panel data for 105 developing countries from 1995 to 2021 and an instrumental variables strategy to address endogeneity, we estimate the effects on both *de jure* and *de facto* labor rights. We construct novel measures capturing not only the category but also the depth of labor provisions, drawing on the ILO's Labor Provisions in Trade Agreements Hub, which covers 79 thematic areas. We find that binding provisions improve *de jure* labor rights but do not affect *de facto* outcomes, thereby widening the gap between law and practice. Non-binding provisions show no significant effects, highlighting both the importance and limitations of enforceability and depth in labor provisions.

Keywords: labor provisions, trade agreements, labor rights, enforceability, provision depth, developing countries.

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The authors acknowledge the public funding from the Valencian regional government (Generalitat Valenciana-Prometeo CIPROM/2022/50 project). They also thank the participants in the 26th Conference on International Economics (Castellon), the 27th INFER Annual Conference (Rome), the Workshop on Ibero-American Development (Goettingen) and the 10th IEI Workshop on International Economics (Alicante) for their comments and suggestions. I. Martínez-Zarzoso is also grateful for the financial support received from the University Jaume I (Project UJI-2023-30) and the Spanish Ministry of Science and Innovation and FEDER-EU (PID2023-147397NB-I00). All remaining errors are ours.

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1 Introduction

Over the past decades, "new generation" trade agreements have become more prevalent, with agreements signed in the 2010s covering nearly twice as many policy areas as those from the 1990s (Hofmann et al., 2017). In contrast to traditional trade agreements, the newer ones aim for deeper integration between the signatories, going beyond promoting trade and also covering social standards, investment and patent rules, environmental regulations, and other policy areas. Among the social topics are labor provisions, which are included to harmonize labor standards between countries to level the playing field and prevent the abuse of workers. However, the effectiveness of labor provisions remains unclear. Although more than 60% of trade agreements signed since 2010 cover labor issues, practices such as child labor, human trafficking, and forced labor still exist in global supply chains (International Labour Organization, 2019). Moreover, evidence suggests that global labor rights compliance decreased between 2015 and 2023 even as global trade continued to grow considerably (United Nations, 2025). This raises the question of whether labor provisions included in trade agreements are effective.

There is a growing body of literature that explores this question, but there are two critical issues that existing studies have not addressed: (1) whether the depth of labor provisions matter and (2) the lack of evidence covering new generation agreements. Most studies treat agreements with labor provisions as dummy variables and do not capture the variation in their content and enforceability. Only Sari et al. (2016) and Bazillier and Rana (2025) take into account the heterogeneity concerning the type of provisions, but do not consider their depth. This is a key dimension to consider given that recent agreements tend to include more detailed and expansive provisions than older ones. Additionally, about a third of current trade agreements with labor provisions have been signed since 2015, a period not covered by the existing literature.

This paper addresses these gaps in three main ways. First, we develop novel measures that capture both the category and depth of labor provisions in trade agreements, allowing us to assess whether provisions intensity matters beyond their mere presence. Second, we are the first, to our knowledge, to exploit the ILO's Labor Provisions in Trade Agreements Hub – the most comprehensive dataset on labor provisions available– which classifies provisions into three main categories and 79 detailed thematic areas. This level of granularity enables a precise quantification of provision depth. Third, we extend the empirical analysis through 2021, thereby incorporating the most recent agreements. Using a panel of 105 developing countries over the period from 1995 to 2021 and an instrumental variables strategy to address endogeneity, we estimate the effects of binding and non-binding labor provisions on both *de jure* and *de facto* labor rights.

We find that binding labor provisions in trade agreements lead to significant improvements in *de*

jure labor rights, but have no discernible effects on *de facto* outcomes. In contrast, non-binding provisions do not differ from agreements without labor clauses. Beyond the type of provisions, our results show that depth is an important determinant of effectiveness: deeper agreements are associated with stronger improvements in labor rights than shallower ones. At the same time, binding provisions widen the gap between rights in law and rights in practice, reflecting the fact that legislative reforms are not translated into meaningful changes on the ground. Overall, our results highlight that both the enforceability and scope of provisions are key dimensions in the design of trade agreements, while also highlighting the limitations of labor provisions as instruments for ensuring compliance with labor laws.

The rest of the paper is organized as follows. Section 2 revises the closely related empirical literature, Section 3 describes the data sources and outlines the construction of variables, Sections 4 and 5 present the empirical strategy and the main results and Section 6 concludes with a discussion of the findings and policy recommendations.

2 Literature Review

Several empirical studies have analyzed the influence of free trade agreements on labor and human rights conditions. The early literature focuses on the effect of preferential trade agreements on overall human rights, without explicitly addressing labor conditions. Hafner-Burton (2005), for instance, examines whether the effectiveness of human rights provisions embedded in trade agreements varies with their degree of strictness. It distinguishes between "persuasive" and "coercive" human rights clauses, reflecting different mechanisms through which such provisions seek to influence national governments' commitment to human rights promotion. Using data for 177 countries from 1973 to 2002, her findings suggest that agreements with coercive clauses that link economic incentives to compliance with the mandate tend to decrease the repression of human rights, whereas those agreements with persuasive clauses that are not tied to economic benefits show weaker effectiveness.

Haeberli et al. (2012) shift the focus to labor conditions, studying the effect of regional trade agreements (RTAs) on three metrics of labor standards: notice period, severance pay, and gross replacement ratio. They weighted the impact of each RTA based on the share of trade within the agreement and applied fixed- and random-effects panel data models to a sample of 74 countries over the period 1980-2005. Their results indicate that the effect of RTAs is heterogeneous across income groups. For high-income countries, RTAs are associated with a deterioration in labor standards, whereas for middle-income countries the effect is positive. In low-income countries, RTAs have no statistically significant effect on labor conditions. Dewan and Ronconi (2018) examine how signing a free trade agreement (FTA) with the US affects the enforcement of labor regulations in Latin American countries. Using a panel of 25 countries from 2000 to 2012, the authors use the number labor inspectors and labor inspections to measure enforcement. Their results suggest that signing an FTAs with the US has a positive effect on both measures. They note that the positive effect is due to higher budgets allocated to labor agencies.

On a different note, Kim (2012) studies the effect of anticipating preferential trade agreements (PTAs) on labor rights ex ante, that is, before signing the agreement. The author argues that if the quality of labor rights is a key requirement to be eligible to sign a PTA with a mandating country, then the potential beneficiary countries will work on improving their labor standards prior to ratifying the agreement. Using a logit model for U.S. trade partners under the 2002 Trade Act —which explicitly linked labor rights to trade agreement eligibility— and covering the period 1982–2005, the study finds that countries are more likely to strengthen labor protection measures prior to ratification than after the agreement enters into force.

Building on Kim's hypothesis, Postnikov and Bastiaens (2014) study the ex ante and ex post effects of having an RTA with the EU on labor standards among EU trading partners. Using an ordered probit model and covering the period from 1980 to 2010, their findings indicate that labor standards are more likely to improve after signing the agreement, in contrast to the ex ante effects documented by Kim (2012). The authors note that while US RTAs are based on sanctions and economic incentives to enforce social provisions, EU RTAs rely more on cooperation procedures and institutional support, which contradicts the hypothesis that persuasive agreements are not effective (Hafner-Burton, 2005).

More recent studies put more emphasis on the role of the specific labor provisions included in each trade agreement. Kamata (2014) explores whether RTAs that include labor provisions are more effective on improving labor conditions compared to those without, focusing on employees' earnings, weekly worked hours, work fatalities and the number of International Labor Organization (ILO) conventions ratified. The author tests this relationship with a fixed effects panel data model that includes two dummy variables to differentiate RTAs with and without labor provisions, both constructed in a similar way as Haeberli et al. 2012). Using data for 103 countries from 1995 to 2012, his findings suggest that including labor clauses in RTAs only show a significant effect on workers' earnings in middle-income countries. However, the results also indicate that RTAs with labor provisions appear to lower trade flows in the same group of countries, suggesting there exists a trade-off between workers' earnings and trade volume. Kamata (2016) follows up his work modifying the classification of FTAs with labor clauses to be stricter in terms of the specifications related to cooperation, consultation and enforcement of the regulations. In this way, FTAs with broader and non-binding provisions are considered as "without labor clauses." The results suggest again that including labor provisions in FTAs do not appear to have a significant effect on labor conditions, regardless of the country's income group.

Siroën and Andrade (2016) analyze the impact of FTAs with labor provisions on the ratification of ILO conventions on workers' rights with data for 141 countries, covering the years between 1980 and 2013. They follow Haeberli et al. (2012) and Kamata (2014) to account for PTAs with and without labor clauses. Using a probit model with fixed effects their results suggest that PTAs with labor provisions have a positive effect on the ratification of ILO standards but do not significantly affect workers' rights. Sari et al. (2016) delve deeper into the specifics of labor clauses by studying whether labor provisions based on cooperation and the promo-

tion of inclusive institutions impact labor rights, distinguishing between improvements in law versus in practice. They use a panel of 132 countries over the period 1990-2012 and employ panel data models with genetic matching to address selection bias. To measure the impact of the trade agreement, they include a weighted dummy variable based on the promotion of inclusive institutions and the coverage of collective rights included in the labor clauses. Their findings show that including labor provisions that promote specialized institutions and cooperation mechanisms reduces labor violations in law but not in practice, where the effect is not significant.

Giumelli and Van Roozendaal (2017) examine how the strength of commitment of labor clauses included in FTAs affects labor standards. To do that, they consider three aspects of the FTAs: pre-ratification procedures to be implemented by the trade partner, the strength of threat of the sanction, and the financial support received to comply with the provisions. They apply a qualitative comparative analysis using 19 countries with FTAs in force with the US to show that labor clauses, regardless of how strict they are, have no significant impact on labor rights.

Martinez-Zarzoso and Kruse (2019) analize the effects of FTAs on four proxies for labor standards — minimum wage, unemployment benefits, gross replacement ratio and severance payment — distinguishing between agreements with and without labor clauses. They use panel data consisting of 96 countries for the period 1995-2008 to evaluate (i) whether there is convergence of labor standards between pairs of countries that have signed an FTA, and (ii) the effect of FTAs on the absolute level of labor conditions in individual signing countries. The authors use matching techniques and a difference-in-differences framework to address selection bias. Their results suggest that FTAs with labor provisions reduce the difference between countries in all four variables, whereas FTAs without labor provisions appear to increase the gap in three of the four proxies. In absolute levels, FTAs with labor provisions positively affect minimum wage levels, while FTAs without labor provisions have a negative effect. In relation to the other three outcome variables, FTAs do not seem to have any significant effect, regardless of whether they have labor provisions.

Kareem (2024) focuses on countries with FTAs in force with the US and the EU to evaluate how the inclusion of labor provisions affects workers' rights violations, distinguishing between impacts *de jure* versus *de facto*. She analyzes data from 125 countries between 2012 and 2015, addressing selection bias using the IPWRA estimator. Regarding labor violations in law, her results show that only EU FTAs have a significant and negative effect, indicating an improvement in labor rights. However, the evidence also suggests that both EU and US FTAs increase labor rights violations in practice, indicating that labor provisions can improve labor regulations but deteriorate workers' conditions in practice.

Bazillier and Rana (2025) examines the depth of labor provisions in their analysis, distinguishing between RTAs with non-compulsory labor provisions, RTAs with legally enforceable provisions, and RTAs with institutional cooperation mechanisms based on data from the Global Preferential Trade Agreements Database. On the one hand, their results suggest that agreements with legally enforceable provisions increase the ratification of ILO core and governance conventions, but have

no significant effect on reducing worker rights violations in practice. On the other hand, RTAs with institutional mechanisms are significantly effective in improving labor conditions in law and in practice.

We contribute to this literature on three fronts: by using a new dataset that covers recently signed, deep, and comprehensive trade agreements; by conducting a more granular analysis of the content of labor provisions; and by extending the empirical scope to assess their effects systematically.

3 Data and Variables

Our dataset consists of a bilateral panel dataset at the exporter–importer level, covering 150 countries over the period 1995–2021. To analyze the effects of labor provisions on labor rights, we aggregate the data to the country-year level. Following the World Bank classification, we exclude high-income countries from the analysis, so that the units of observation are low-, lower-middle-, and upper-middle-income countries, while retaining information on their trade agreements with high-income partners. This exclusion is motivated by the nature of labor provisions, which are designed primarily to influence labor standards in developing and emerging economies. As argued by Bagwell and Staiger (2001), including labor provisions in trade agreements aims to harmonize standards among trade partners so that no "race to the bottom" takes place and to level the playing field. Therefore, it follows that labor provisions would not likely have an impact on countries with already high labor standards. The sample used in the empirical analysis consists of 105 non-high-income countries over the period 1995-2021.

3.1 Labor Provisions in Trade Agreements

Data on trade agreements and their labor provisions is obtained from ILO's Labour Provisions in Trade Agreements Hub (LP Hub), which covers all bilateral and plurilateral RTAs signed since 1958. For each agreement, it not only captures whether labor provisions are included, but also classifies them into three distinct categories depending on their scope, which are then further broken down into different possible thematic areas that can be covered. The ILO defines the three main categories as follows:

I. **Obligations** refers to any regulatory clause included in the RTA related to "labor relations, minimum working conditions, terms of employment, and/or other labor issues."

II. **Monitoring and Cooperation** captures any clause that "promotes compliance with standards through cooperative activities, dialogue and/or monitoring of labor issues."

III. **Dispute Settlement Mechanisms** includes "any mechanism to ensure compliance with standards, either set under national law or in the trade agreement."

Obligations (OBL henceforth) can be understood as the general commitments of the signatory countries related to labor issues. These can include the commitment to enforce national labor laws, promote worker's rights in thematic areas such as child labor or gender, ratify international labor standards, or not to derogate labor laws. The label of "obligations" can be misunderstood, since an RTA with this category does not imply that countries are legally "obliged" to comply with the provisions, but rather that they commit to follow them; without having any legal requirement. Monitoring and cooperation provisions (COOP henceforth) capture the post-ratification methods used to *promote* compliance with these obligations, covering monitoring and cooperation activities. Cooperation activities include, for instance, building institutional capacity, providing technical assistance on issues such as labor inspections or labor statistics, promoting awareness of labor rights among civil society, and exchanging information related to labor laws and policies. Monitoring activities can include submissions of regular reports, updates from workers' and employers' representatives, and the possibility of filing complaints when non-compliance is suspected.

Finally, dispute settlement mechanisms (DSM henceforth) capture the existing enforcement mechanisms used to *enforce* compliance. These mechanisms are activated when non-compliance complaints arise and there are issues of interpretation, or when no friendly agreement is reached between the involved parties. This category covers aspects such as which chapter of the trade agreement addresses labor disputes, the third-party panels responsible of solving the dispute, and the consequences of non-compliance, which include monetary compensation, suspension of benefits, and border access restrictions, among others. OBL and COOP provisions are only legally binding if the RTA includes DSM provisions.

Table 1 shows the total number of RTAs, disaggregated by whether they contain labor provisions and by the income level of the signatories (north-north, north-south, and south-south). RTAs with labor provisions account for roughly a third of all RTAs signed between 1995 and 2021. North-South agreements comprise not only the group with most RTAs with provisions signed, but also proportionally, with a share of 39%. North-North agreements exhibit a similar share, with 35% of them including labor provisions, although they consist of the smallest group in terms of total RTAs signed. Lastly, the proportion of agreements with provisions is the lowest among South-South agreements, with only 12% of them including any labor clause. This noticeable gap with the other two groups suggests that labor provisions are more likely to be included when a high income country is involved in the agreement.

Table 1: Coverage of Labor Provisions by Income Classification (1995-2021)

Income Classification	Total RTAs	RTAs with any LP	% with any LP
north-north	37	13	35.1
north-south	186	73	39.2
south-south	128	16	12.5
Total	**351**	**102**	**29.1**

Note: Percentages show the proportion of RTAs in each income classification that include any labor provision. Source: ILO's LP Hub.

Among agreements with labor provisions, OBL and COOP clauses are found in 96% and 97% of them, while DSM are present in 77% of them, as shown in Table 2. However, when disaggregating by the income level of the signatories, there are substantial differences with respect to dispute settlement mechanisms; while all agreements between high-income countries include this type of provisions, only 43% of South-South agreements include them. This proportion is 80% among North-South agreements, which suggests that when high-income countries sign RTAs with labor provisions, enforcement clauses are the norm, whereas South-South agreements primarily rely on non-legally binding commitments.

Table 2: Composition of Labor Provisions among RTAs with any Labor Provision

Income Classification	With OBL	With COOP	With DSM
north-north	13 (100.0%)	12 (92.3%)	13 (100.0%)
north-south	71 (97.3%)	71 (97.3%)	59 (80.8%)
south-south	14 (87.5%)	16 (100.0%)	7 (43.8%)
Total	**98 (96.1%)**	**99 (97.1%)**	**79 (77.5%)**

Note: Percentages show the proportion of RTAs with labor provisions that include each category, calculated relative to RTAs with any LP in each income classification. Source: ILO's LP Hub.

Table 3 further disaggregates agreements with provisions by the specific combinations of categories they contain. Most RTAs with labor provisions include all three categories simultaneously (75%), while 19% contain OBL and COOP without DSM. The other two pair combinations barely appear: only 3% combine obligations with DSM, and no agreement pairs COOP with DSM only. Interestingly, no trade agreement includes only OBL or DSM, but 4% contain only COOP. This distribution reveals two main insights: (1) categories do not tend to be included alone; and (2) with a few exceptions, they mainly follow a nested structure, such that DSM tends to appear only when COOP is present, which in turn appears when the agreement contains OBL.

Table 3: RTAs by Labor Provisions Combinations

Income Class	OBL only	COOP only	DSM only	OBL+ COOP	OBL+ DSM	COOP+ DSM	All Three
N-N	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (8%)	0 (0%)	12 (92%)
N-S	0 (0%)	2 (3%)	0 (0%)	12 (16%)	2 (3%)	0 (0%)	57 (78%)
S-S	0 (0%)	2 (12%)	0 (0%)	7 (44%)	0 (0%)	0 (0%)	7 (44%)
TOTAL	**0 (0%)**	**4 (4%)**	**0 (0%)**	**19 (19%)**	**3 (3%)**	**0 (0%)**	**76 (75%)**

Note: Income Class: N-N = North-North, N-S = North-South, S-S = South-South. Percentages show the proportion of RTAs with labor provisions that include each combination of provisions, calculated relative to total RTAs with any LP in each income classification. Source: ILO's LP Hub.

The existing literature that studies the impact of labor provisions on trade and labor outcomes has focused on two approaches to measuring exposure: whether a country is subject to a trade agreement with provisions —extensive margin—, and the cumulative number of trade agreement with provisions — intensive margin—. The extensive margin approach suggests that the mere

presence of agreements with provisions has an impact, whereas the intensive margin approach is based on the idea that the more agreements with provisions a country has, the greater the impact of the provisions will be. However, both methods overlook the composition of the agreements with provisions, treating them equally and thus assuming their impact is identical.

We propose a different measure that not only captures the type of provisions included in the agreement —OBL, COOP, and DSM—, but also considers their depth. We argue that, beyond signing an RTA with provisions, the composition of the agreement also matters. Thus, in our analysis we do not consider the total number of agreements with labor provisions a country has, but instead the intensity of the deepest agreement.

As an illustration, consider the cases of two RTAs signed by Chile: the EU-Chile agreement signed in 2003 and the Japan-Chile agreement signed in 2007. Both contain COOP provisions in the LP Hub dataset, but their scope is notably different. Within the COOP category, the Japan-Chile agreement contains only a single provision about cooperation activities (Attachment Four), which simply states that "both governments will promote public awareness of labor laws and regulations in their respective countries" without going into further details. In contrast, the EU-Chile agreement is far more comprehensive. It includes a more detailed provision on cooperation activities (Article 44) that prioritizes "the creation of employment and respect for fundamental social rights" and "promoting the relevant conventions of the International Labour Organisation." Additionally, it establishes council committees (Article 10) responsible for "promoting dialogue and cooperation between the various economic and social organizations of civil society;" includes public engagement and consultation provisions (Article 48) allowing civil society to "participate in consultations on cooperation policies and strategies" and "in the implementation of cooperation projects;" and contains post-ratification monitoring activities through "regular meetings to assess implementation." Treating these two agreements equally would ignore the substantial difference in their depth.

By focusing on the most ambitious RTA in terms of labor provisions, we assume that the labor practices of a country are influenced by the strictest agreement it has signed, rather than by the accumulation of shallower agreements. This approach is based on three considerations. First, from a legal perspective, once a country commits to deep provisions, those standards establish a benchmark that constrains domestic policy regardless of the provisions of less demanding agreements signed. A country cannot violate the standards of its strictest agreement just because other agreements impose weaker requirements. Second, from a perspective of compliance pressure, the strictest agreements tend to involve large, high-income economies. In our sample, approximately three quarters of countries' deepest bilateral agreements include at least one of these partners: the EU, the United States, the EFTA, Japan, Canada, South Korea, and New Zealand. These are all high-income countries, and except for New Zealand, all are among the world's 15 largest economies.

This pattern suggests that the strictest provisions tend to come from partners with a large market size and high regulatory capacity, which are two key factors that incentivize compliance of the provisions. Large economies impose a high cost of not obeying the agreement through

the loss of access to a large market, while partners with high regulatory capacity have greater enforcement power. Third, from a practical perspective, Bradford (2012) argues that countries tend to adopt the standards set by their strictest partners even when trading with countries that do not require them. One of the factors of this behavior is the non-divisibility of standards, which makes it inefficient for countries to adopt different regulations (technical, safety, environmental) depending on the requirements of their trading partner. As Bradford (2012) puts it, "the exporter has an incentive to adopt a global standard whenever its production is nondivisible across different markets or when the benefits of a uniform standard due to scale economies exceed the costs of forgoing lower production costs in less regulated markets." This especially holds for labor provisions since the strictest labor provisions typically come from large, high-income partners (as shown above) and countries cannot realistically modify their labor policies and regulations depending on the trading partner (improvements in labor standards in response to one comprehensive agreement necessarily apply to all trade relationships).

Given these considerations, we construct three indices that measure both the presence and depth of labor provisions in RTAs, one for each of the main labor provision categories:

$$\text{oblint}_{i,t} = \frac{\max_j(\text{obl}_{i,j,t})}{39} \tag{1}$$

$$\text{coopint}_{i,t} = \frac{\max_j(\text{coop}_{i,j,t})}{12} \tag{2}$$

$$\text{dsmint}_{i,t} = \frac{\max_j(\text{dsm}_{i,j,t})}{24} \tag{3}$$

where $obl_{i,j,t}$, $coop_{i,j,t}$, and $dsm_{i,j,t}$ represent the count of provisions in each category included in the RTA between country i and partner j in force at year t. Each of these values is normalized by the total number of different provisions available on the LP Hub dataset (39 for OBL, 12 for COOP, and 24 for DSM). Thus, these ratios capture the maximum intensity of provisions that country i is subject to in each category. A value of 0 indicates that country i has no agreements covering that category, while a value of 1 implies that it is engaged in an agreement that covers every possible thematic area defined by the ILO.

Ideally, we would like to measure the marginal effect of each of the three intensity indices. However, based on the nature of how provisions are combined in RTAs shown in Table 3, the data does not provide enough variation to disentangle their impacts. Out of the 98 RTAs that contain OBL, 95 of them include COOP provisions as well, and out of the 99 RTAs with COOP, only 3 of them do not include OBL.

This limits our ability to capture their marginal contribution. The only source of variation is found with respect to RTAs with DSM; excluding North-North RTAs, there are 66 RTAs with DSM and 23 with provisions but without DSM. Given this data structure, we follow an approach that exploits the available variation by classifying RTAs into mutually exclusive categories —

those with DSM and those without DSM. This distinction avoids the multicollinearity problem that would arise from trying to separate the effects of provisions that nearly always appear together. Additionally, it addresses a central question in the international law literature: the effectiveness of binding agreements versus non-binding agreements. The two main RTA groups are captured through $soft_{i,t}$ and $hard_{i,t}$, defined below:

$$\text{soft}_{i,t} = \frac{oblint_{it} + coopint_{it}}{2} \quad \text{if DSM}_{i,j,t} = 0 \quad \forall \quad j \tag{4}$$

$$\text{hard}_{i,t} = \frac{oblint_{it} + coopint_{it} + dsmint_{it}}{3} \quad \text{if DSM}_{i,j,t} > 0 \quad \text{for some} \quad j \tag{5}$$

These indices are mutually exclusive by construction. $soft_{i,t}$ is defined only for country-years in which country i has no RTA with DSM provisions in force, while $hard_{i,t}$ captures the intensity of enforcement mechanisms for countries that have adopted such provisions. And a country cannot have positive values for both indices simultaneously. Once a country adopts an RTA with DSM or transitions from a soft agreement, our specification captures this shift. Both indices can range from 0 to 1 and they capture the average intensity of each of the deepest provision category the country is subject to. For instance, a country with several RTAs might have a *hard* index that is composed by provisions of three different agreements (the deepest OBL, COOP and DSM provisions may come each from separate RTAs).

3.2 Labor Rights

There is room for debate when choosing how to measure labor conditions in a country. On the one hand, working conditions encompass multiple dimensions, such as wages, working hours, safety in the workplace, freedom of association, discrimination, unemployment benefits and severance payments. On the other hand, when measuring worker's rights it is key to distinguish between *de jure* rights and *de facto* rights, as noted by Kanbur and Ronconi (2018). They argue that the empirical literature has over-relied on measures of labor legislation to measure the overall level of working conditions of a country. In fact, they find that stricter labor regulations are negatively correlated with the intensity of their enforcement, suggesting that relying only on *de jure* measures might be misleading.

Given these issues, this study uses the worker rights' indicators from the CIRIGHTS database as a proxy for the labor conditions of a country. These indicators measure the rights of a country in collective bargaining, forced labor, children labor, minimum wage, occupational safety and health, working hours, human trafficking and discrimination. Each of these aspects is given two scores—one *de jure* and one *de facto*— that range from 0 to 2 based on how protected workers are.

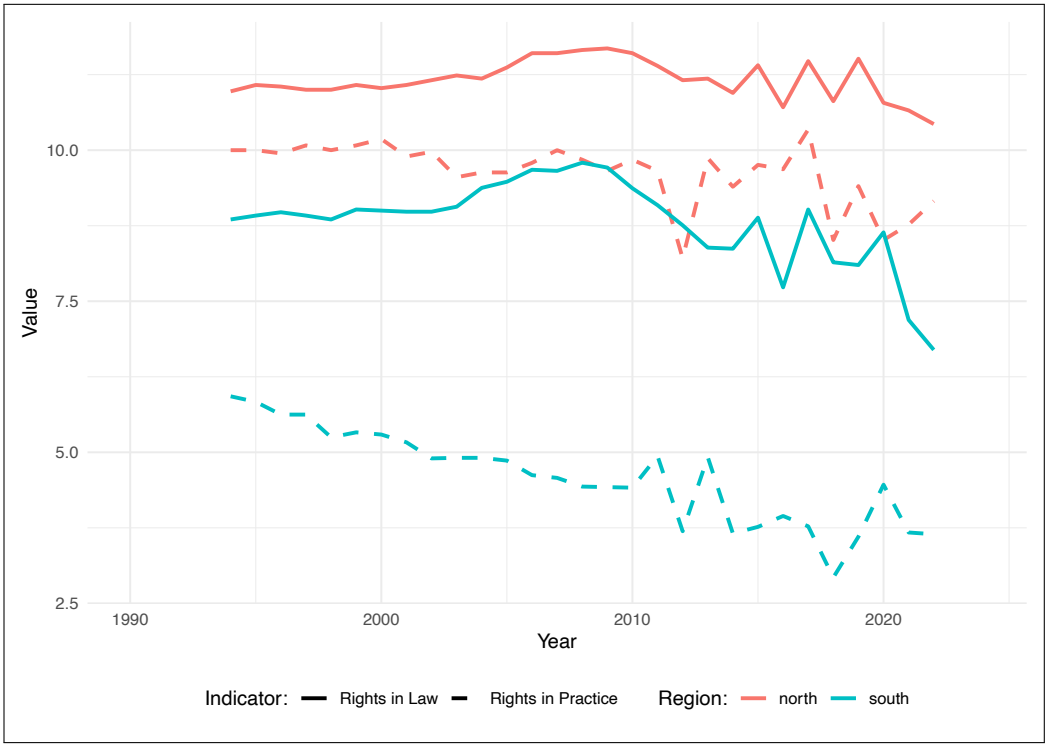
The *de jure* index captures how legally protected workers are in that area. The scoring criteria are based on how many of the International Labour Organization (ILO) standards related to

that area are satisfied in the country's legislation. If all relevant ILO standards are met, a score of 2 is assigned. If three or more ILO standards are not met, a score of 0 is given. All other cases—where one or two standards are not satisfied—receive a score of 1. The *de facto* index describes "the ability of workers to exercise the right". Based on the US State Department Country Reports on Human Rights Practices, a score of 2 is given if no relevant ILO standards are violated; a score of 0 if three or more standards are not effectively enforced; and a score of 1 if one or two standards are not met in practice.

These individual scores are aggregated to form two composite indexes that capture the overall state of the worker's rights both *de jure* and *de facto*. In our empirical analysis, we select these variables to measure labor conditions since they address the two main measurement challenges: the multidimensional nature of labor conditions and the differentiation between rights in law versus rights in practice.

Figure 1 shows the evolution of the two composite indexes of workers' rights over time, distinguishing between high-income and non-high-income countries. We observe two main considerations. Firstly, workers' rights have weakened over time both *de jure* and *de facto*. The decline has been more intense in non-high-income countries, especially in *de facto* rights. Secondly, *de jure* rights are persistently above *de facto* rights for the entire period in both income groups. This gap widens over time but converges to the initial level in the last years of the sample and is substantially bigger in non-high-income countries. This finding implies that more ILO standards are fulfilled in law than in practice, suggesting an enforcement problem in both income groups, though more intensively among developing countries.

Figure 1: Evolution of worker rights in law vs in practice by income groups



Source: Authors' elaboration based on data from the CIRIGHTS database.

Note: Rights in law and Rights in practice are computed by the mean value by income group of CIRI indices *Worker Rights in Law* and *Worker Rights in Practice*, respectively

3.3 Summary Statistics

Table 4 presents the summary statistics of the sample used in the empirical analysis. The statistics of the dependent variables show that on average, *de facto* rights have a score almost twice as low as *de jure* rights. For *de jure* rights, the minimum and maximum values are 1 and 14, respectively, which implies that no county has the lowest possible score (0) and there exists at least one observation with the highest possible score (Croatia in 2021, Bulgaria in 2013, and Hungary in 2010 and 2013). In contrast, for *de facto* rights, there are 27 countries with the lowest possible score in at least one year, but no single country with the highest score possible. The spread in both indices is similar, but when considering the standard deviation/mean ratio, *de facto* rights are the most volatile. The gap variable statistics complement the findings of Figure 1, showing that, on average, the *de jure* index is 4.3 points above the *de facto* index. However, the minimum value of -3 indicates that there are observations which have greater scores for *de facto* rights than for *de jure* rights, although this is the case for just 28 out of 3,081 observations. The highest difference between both indices (12) is found in Russia in 2005 and in Ivory Coast in 2010.

Regarding our variables of interest, $soft$ and $hard$, they have maximum values of 0.33 and 0.71, respectively. This implies that the depth of the most comprehensive RTA with enforcement

Table 4: Summary Statistics

Variables	N	Mean	SD	Min	Max
Dependent:					
Labor Rights (de jure)	3,082	8.9	2.05	1	14
Labor Rights (de facto)	3,081	4.6	2.46	0	13
Gap (de jure - de facto)	3,081	4.3	2.20	-3	12
Independent:					
Soft provisions	3,532	0.0370	0.0653	0.0	0.3397
Hard provisions	3,532	0.0941	0.1926	0.0	0.7179
GDP per capita	3,379	3,117.22	3,630.50	65.00	23,484.00
Trade/GDP	3,220	71.69	33.01	0.02	220.41
Core ILO ratifications	3,436	6.81	2.31	0	11
Components (not included in regression):					
oblint	3,532	0.1208	0.1695	0.0	0.7436
coopint	3,532	0.1598	0.2337	0.0	0.9167
dsmint	3,532	0.0756	0.1917	0.0	0.7500

Note: Summary statistics for the main estimation sample (excluding high-income countries). Obligation, cooperation, and dispute settlement provisions are the components used to construct soft and hard provision indices but are not included in the regressions due to multicollinearity.

mechanisms is more than double the depth of the most comprehensive soft RTA. In fact, more than 70% of the *hard* observations greater than 0 have a higher value than 0.33. The bottom part of the table includes the components used to build $soft$ and *hard*. The maximum values of *oblint* and *dsmint* are practically the same: 0.75. This indicates that the most comprehensive agreements in the OBL category and in the DSM category cover 75% of the category-specific thematic areas defined by the ILO. This value is 0.91 for *coopint*, which implies that the most ambitious agreement in relation to monitoring and cooperation provisions covers 91% of all the possible issues considered by the ILO.

However, the difference in maximum values does not reflect the average difference between the indices. To accurately compare them, Table 5 provides the summary statistics of the labor provision indices conditional on positive values, i.e., among countries that have adopted them. We observe that the mean of *hard* is above $soft$. This implies that on average, countries exposed to RTAs with enforceable mechanisms are subject to deeper provisions, although *hard* is more spread than $soft$. Regarding the indices of OBL, COOP and DSM, *oblint* shows the lowest mean (0.25), and *coopint* and *dsmint* are nearly identical (0.32). These values indicate that in the average agreement with provisions, there is room for improving the depth of all three categories, as usually only one third of thematic areas are covered. Lastly, *dsmint* has roughly half observations compared with the other two indices, meaning that in our sample it is less common to have enforcement provisions (DSM) than non-binding provisions (OBL and/or COOP).

Table 5: Summary Statistics: Countries with Labor Provisions

Variables	N	Mean	SD	Min	Max
Aggregate measures:					
Soft provisions	925	0.1411	0.0396	0.0833	0.3397
Hard provisions	837	0.3970	0.1903	0.1624	0.7179
Components:					
Obligation provisions	1,666	0.2561	0.1620	0.0256	0.7436
Cooperation provisions	1,755	0.3216	0.2407	0.0833	0.9167
Dispute settlement provisions	837	0.3189	0.2783	0.0417	0.7500

Note: Summary statistics conditional on having labor provisions. Soft and hard provision statistics include all observations with any labor provisions. Component provision statistics are conditional on having positive values for each respective provision type. Sample excludes high-income countries.

4 Empirical Analysis

In this section we present the empirical strategy used to identify the causal effect of labor provisions in trade agreements on labor rights. With this aim, we elaborate on the identification strategy in (4.1) and the model specification is outlined in (4.2).

4.1 Identification Strategy

In order provide a causal interpretation of the relationship between labor provisions and working conditions, we must consider how countries are selected into treatment. Assuming that there are no unobservable factors that simultaneously influence labor conditions and the likelihood of signing an RTA with labor provisions might be naive. Even if we followed such an assumption, the direction of causality would still remain unclear; does signing trade agreements with labor clauses affect labor conditions, or is it the other way around? Additionally, even if we included labor provisions as regressors and acknowledge its endogeneity, we could not assume the direction of the bias to obtain interpretable estimates. One could think that the bias would be positive because countries with stronger labor conditions tend to engage in deep trade agreements because they meet the minimum labor standards required. However, it might be the case that labor clauses are imposed to countries with weaker working conditions, which would then negatively bias the estimate of labor provisions. To address these concerns, we use instrumental variables to capture the exogenous variation of labor provisions.

We use as instrumental variable (IV) the contagion index developed by Baldwin and Jaimovich (2012), following the approach of Bazillier and Rana (2025). Baldwin and Jaimovich (2012) argue that the more trade agreements country i signs with third countries j, the more pressure on country i to sign an agreement with j to avoid trade diversion. Bazillier and Rana (2025) apply this contagion effect to labor provisions following a similar logic: the more trade agreements with labor provisions signed by trade partners of country i, the more likely country i is to

sign trade agreements with provisions. Therefore, the IV is constructed as the mean share of RTAs with labor provisions of all countries that have an RTA signed with country i in year t. Formally:

$$soft_{IV_{i,t}} = mean\left[\frac{\sum RTA_{j,t}^{soft}}{\sum RTA_{j,t}^{total}}\right] \tag{6}$$

$$hard_{IV_{i,t}} = mean\left[\frac{\sum RTA_{j,t}^{hard}}{\sum RTA_{j,t}^{total}}\right] \tag{7}$$

where country j is a country with which country i has an RTA signed in year t, $RTA_{j,t}^{soft}$ is the total number of RTAs with OBL and/or COOP provisions signed with country j in year t, $RTA_{j,t}^{hard}$ captures the number of RTAs with DSM provisions, and $RTA_{j,t}^{total}$ is the total number of RTAs signed with country j in year t.

The intuition is that greater exposure to labor provisions of trade partners of country i will increase the likelihood that country i signs an agreement with labor provisions. At the same time, this instrument is unrelated to labor rights or any other innate characteristic of country i, since it captures the trade preferences of partner countries j with third countries.

4.2 Model Specification

To estimate the effect of labor provisions on labor rights, the main model specification is given by:

$$rights_{it} = \beta_1 RTAs_{it} + \beta_2 soft_{it-1} + \beta_3 hard_{it-1} + X_{it}\gamma + \alpha_i + \alpha_t + \epsilon_{it} \tag{8}$$

where $rights_{it}$ measures labor rights in country i at time t using the CIRIGHTS workers' rights index. We estimate separate models using both the *de jure* index (capturing rights in law) and the *de facto* index (capturing rights in practice). $RTAs_{it}$ captures the cumulative number of regional trade agreements signed by country i; X_{it} includes control variables (log GDP per capita, trade openness as a share of GDP, and the cumulative number of core ILO conventions ratified); α_i are country fixed effects ; α_t are year fixed effects; and ϵ_{it} is the error term. Standard errors are clustered at the country level to account for serial correlation. $soft_{it-1}$ and $hard_{it-1}$ are lagged by one year to account for the delay in their implementation and to avoid reverse causality issues.

$soft_{it-1}$ and $hard_{it-1}$ measure the effect of intensity of provisions only with respect to the reference group —countries without RTAs with provisions—. The coefficient of $soft_{it-1}$, β_2, estimates the marginal effect of increasing the depth of non-binding provisions conditional on the absence of binding provisions. It captures whether, for countries that are not exposed to hard agreements, a deeper soft agreement promotes better labor rights than a shallower one or

not having any RTA with provisions at all. Regarding $hard_{it-1}$, this index combines the depth of non-binding provisions (OBL and COOP) with the depth of binding provisions (DSM), and is defined only for countries with at least one RTA with DSM provisions in year t. Thus, β_3 captures whether, for countries exposed to binding agreements, adopting a deeper and more comprehensive set of provisions leads to stronger labor rights relative to having no agreement with provisions at all.

4.3 Convergence Analysis

One of the advantages of measuring labor rights with the CIRIGHTS indices is that the same scoring criteria is used in both *de jure* and *de facto* rights, which allows a direct comparison between both dimensions. We exploit this feature to answer an additional question motivated by the insight revealed in Figure 1: Do labor provisions impact the gap between rights in law and rights in practice? As it was previously discussed, there has been a persistent difference between the level of workers' protection in law and in practice in the period 1995-2021, with *de facto* rights being consistently below the level they should be according to the law. Thus, we study this question using the same model specification shown above, but with a different dependent variable, gap_{it}, that captures the gap between the *de jure* and *de facto* rights indices for each country and year. It is constructed as follows:

$$gap_{it} = dejure_{it} - defacto_{it} \tag{9}$$

where $dejure_{it}$ and $defacto_{it}$ represent the CIRIGHTS workers's right index *de jure* and *de facto* for country i in year t. The larger the value of gap_{it}, the lower the level of rights in practice relative to rights in law.

5 Empirical Results

This section presents the regression results obtained from estimating the model specified in the previous section. The baseline specification is estimated using OLS and 2SLS to assess whether labor provisions might be endogenous as well as the direction of the bias.

Table 6 presents the results from estimating the baseline model. The first two columns compare the OLS and 2SLS estimates for *de jure* rights, and columns 3 and 4 compare OLS and 2SLS estimates for *de facto* rights. The IVs used with 2SLS are the first and second lags of $soft_{IV_{i,t}}$ and $hard_{IV_{i,t}}$, defined in equations 6 and 7. This results in 4 IVs for two endogenous explanatory variables, which allows us to test for overidentifying restrictions. The first stage regression results are displayed in Table 12.

Column 1 shows that neither soft nor hard agreements have a significant effect on workers' rights. The only variable that explains differences in workers's rights is trade as a share of

GDP, implying that, keeping all other factors constant, countries more exposed to international trade tend to have a stronger labor legislation that protects workers. When using 2SLS, column 2 show that *soft* does not affect *de jure* rights either when using IVs, but the coefficient of *hard* is positive and significant, implying that being subject to a deep RTAs that contains enforceable labor provisions improves labor rights *de jure*. More specifically, a one standard deviation increase in the *hard* score is associated with an increase of 0.29 standard deviations (or 0.59 points) in the *de jure* workers' rights index. Regarding the control variables, only trade openness positively affects labor rights in law, with a coefficient of roughly the same magnitude as in the OLS case. These results suggest that including enforceable provisions in RTAs improves the labor legislation of the signatories, whereas signing RTAs that only contain non-binding provisions do not differ significanltly from signing RTAs without labor provisions.

Table 6: Main regression results

	De jure		De facto	
	(1) OLS	(2) 2SLS	(3) OLS	(4) 2SLS
RTA	0.019	–0.034	0.056**	0.031
	(0.015)	(0.025)	(0.026)	(0.036)
Soft provisions	2.353	0.518	0.804	0.561
	(1.510)	(2.632)	(1.339)	(2.668)
Hard provisions	0.409	3.045***	–0.568	0.663
	(0.440)	(1.058)	(0.548)	(1.359)
GDP per capita (log)	0.056	0.113	0.279	0.305
	(0.184)	(0.193)	(0.262)	(0.267)
Trade/GDP	0.009***	0.008***	0.003	0.003
	(0.003)	(0.003)	(0.005)	(0.005)
Core ILO ratifications	0.077	0.060	–0.031	–0.037
	(0.049)	(0.052)	(0.076)	(0.077)
Observations	2747	2747	2746	2746
R-squared	0.243	0.187	0.241	0.234
Hansen-J p-value		0.595		0.428

Notes: Clustered standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.
Sample excludes high-income countries. Year and country FE included but not shown. Provisions lagged one period.

For *de facto* rights, we observe that neither the OLS (column 3) nor the 2SLS (column 4) estimates are significant for *soft* or *hard*. This pattern suggests that, while RTAs with binding provisions strengthen labor laws, they are not able to translate that improvement into the workplace. Additionally, the contrast between OLS and 2SLS estimates may indicate that the variable *hard* is endogenous. For *de jure* rights, the coefficient increases from an insignificant 0.420 with OLS to a significant 3.045 when using IVs, while for *de facto* rights, it shifts from negative to positive. The negative bias in OLS estimates likely indicates that countries with weaker labor rights are required to commit to stricter provisions when negotiating RTAs. This is in line with Bagwell and Staiger (2001), who argues that developed countries will demand enforcement mechanisms from trade partners with weaker labor conditions to avoid competitive disadvantages. Thus, among developing countries, those with the lowest labor standards will

systematically engage more with 'hard' RTAs than the rest of countries, creating a selection problem.

Table 7 presents the results on the effects on the convergence between *de jure* and *de facto* standards, using the dependent variable described in Section 4.3. A positive coefficient implies that labor provisions improve legal protection more than they improve protection in practice. The OLS estimates indicate that both soft and hard agreements widen the gap between rights in law and rights in practice. However, the 2SLS estimates (Column 2) reveal that only hard agreements have a significant effect on the gap, while soft agreements show no significant impact. This finding is consistent with the results of Table 6, which reveal that the *de jure-de facto* gap is widened exclusively due to an improvement in *de jure* rights, without worsening *de facto* rights.

Table 7: Convergence (De Jure-De Facto Gap) Results

	(1) OLS	(2) 2SLS
RTA	-0.037	-0.065*
	(0.023)	(0.034)
Soft provisions	2.908**	1.373
	(1.299)	(2.771)
Hard provisions	1.042*	2.462*
	(0.604)	(1.471)
GDP per capita (log)	-0.205	-0.142
	(0.265)	(0.257)
Trade/GDP	0.006	0.006
	(0.004)	(0.004)
Core ILO ratifications	0.113	0.100
	(0.069)	(0.070)
Observations	2746	2742
R-squared	0.212	0.202
Hansen-J p-value		0.153

Notes: Standard errors clustered by country in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Sample excludes high-income countries. Dependent variable is the difference between de jure and de facto labor rights violations. Provisions lagged one period. Year and country FE included but not shown.

The cumulative count of general RTAs has a negative effect on the gap with a significance level of 90%. This suggests that exposure to more trade agreements works in the opposite direction of *hard* by diminishing the difference between standards in law and standards in practice. When examining the this effect in Table 6, the OLS estimates suggest that RTAs only have a positive significant effect on *de facto* rights. However, in the IV specification, RTAs have no significant effect neither on *de jure* rights nor *de facto* rights, making it unclear which factor drives the decrease in the gap.

5.1 Heterogeneity Analysis

To test whether the effectiveness of labor provisions varies by country income level, we examine heterogeneous effects across income groups. Ideally, we would interact our soft and hard indices with income-group dummies. However, this approach requires instrumenting four endogenous variables simultaneously (soft and hard, each interacted with an income dummy), which results in weak first-stage identification.

Given this limitation, we follow a more parsimonious specification that includes only hard agreements. This approach is justified on the baseline results of Table 6, which show that hard RTAs have a significant impact on labor rights but soft RTAs have no significant effect:

$$rights_{it} = \beta_1 RTAs_{it} + \beta_2 hard_{it-1} + \beta_3 (hard_{it-1} \times upinc_{it}) + X_{it}\gamma + \alpha_i + \alpha_t + \epsilon_{it} \qquad (10)$$

where $upinc_{it}$ is a dummy variable that takes the value of one if country i is classified as an upper-middle income country in year t. Therefore, β_2 measures the effect of hard RTAs on lower-middle and low income countries, while the impact on upper-middle income countries is captured by $\beta_2+\beta_3$.

Table 8: Heterogeneous Effects by Income Level

	(1) De jure	(2) De facto
RTA	-0.032	0.034
	(0.025)	(0.036)
Hard provisions	2.753**	-0.072
	(1.208)	(1.480)
Hard provisions × Upper-middle income	0.403	1.187
	(0.672)	(0.873)
GDP per capita (log)	0.107	0.288
	(0.193)	(0.268)
Trade/GDP	0.008***	0.003
	(0.003)	(0.005)
Core ILO ratifications	0.061	-0.034
	(0.052)	(0.075)
Observations	2747	2746
R-squared	0.188	0.235
Hansen-J p-value	0.675	0.902

Notes: Table shows 2SLS estimates. Standard errors clustered by country in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Sample excludes high-income countries. Upper-middle income is a dummy; the baseline category is lower-middle income. Year FE included but not shown. Hard provisions are lagged one period.

The results are presented in Table 8. Column (1) shows that β_2 is significant and positive with a magnitude (3.29) similar to the baseline estimate (3.04). However, β_3 is not significant, which indicates that the effect of hard RTAs on *de jure* rights for upper-middle income countries is

not significantly different from the effect for low and lower-middle income countries. Column (2) examines the results for *de facto* rights. Neither β_2 and β_3 are not statistically significant, consistent with our baseline results that hard RTAs have no effects in rights in practice.

5.2 Robustness Checks

To check if our results are robust to different measures of labor rights, we estimate our baseline model using the Labour Rights Indicators database by Kucera and Sari (2019). These indicators capture labor rights violations related to freedom of association and collective bargaining across countries and also differentiate between *de jure* and *de facto* rights. The scores are based on nine textual sources and are weighted based on experts' assessments using the Delphi method. Higher values indicate more severe rights violations. The downside of this dataset is that it only covers nine years, with several breaks in the series.

Table 9: Robustness: Alternative Dependent Variable (Kucera Indices)

	De jure		De facto	
	(1) OLS	(2) 2SLS	(3) OLS	(4) 2SLS
RTA	0.003	0.185*	0.030	–0.091
	(0.088)	(0.104)	(0.075)	(0.129)
Soft provisions	–5.039	–20.107	–5.000	–17.939
	(6.278)	(22.929)	(7.792)	(19.223)
Hard provisions	–0.041	–8.907**	–0.137	5.977
	(2.831)	(4.389)	(2.151)	(6.078)
GDP per capita (log)	–0.058	0.016	–1.537*	–1.564*
	(0.828)	(0.854)	(0.838)	(0.859)
Trade/GDP	0.038***	0.038***	–0.033**	–0.035*
	(0.012)	(0.012)	(0.016)	(0.019)
Core ILO ratifications	–0.541	–0.662*	0.207	0.252
	(0.371)	(0.356)	(0.342)	(0.361)
Observations	987	986	987	986
R-squared	0.221	0.171	0.065	0.042
Hansen-J p-value		0.781		0.123

Notes: Clustered standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. De jure columns use labor rights violations in law; de facto columns use violations in practice. Sample excludes high-income countries. Year and country FE are included but not shown. Soft and hard provisions are lagged one period.

The results presented in Table 9 show that OLS estimates of $soft$ and $hard$ are not significant. When using IVs, the estimates indicate that binding labor provisions are effective in decreasing labor rights violations, while soft provisions show no significant effect. This effect, however, is only significant for *de jure* rights, not for *de facto*. These findings are in line with the results of our main specification and support the finding that only the depth of binding provisions is effective in reducing labor rights violations, and that this effect is nonexistent for *de facto* rights.

We also test whether our results are sensitive to the construction of the labor provision indices,

comparing our baseline approach using the maximum number of provisions with the alternative of using the average number of provisions instead. Thus, the components of *soft* and *hard* (*oblint*, *coopint*, *dsmint*) are built by taking the average number of provisions that country *i* has across its RTAs. The 2SLS estimates are presented in Table 10, which also includes the baseline results for comparison purposes (Columns 1 and 3). In Columns 2 and 4, we observe that the mean-construction of *hard* positively affects *de jure* working rights, but does not affect *de facto* rights, while *soft* is not significant in either outcome variable. This indicates that the results are robust to the alternative index construction based on mean provisions. The larger estimates of the mean specification reflect the lower average value and standard deviation of the mean index compared to the maximum index.

Table 10: Robustness: Aggregation Method

	De jure		De facto	
	(1) Max	(2) Mean	(3) Max	(4) Mean
RTA	–0.034	–0.014	0.031	0.035
	(0.025)	(0.020)	(0.036)	(0.030)
Soft provisions (max)	0.518		0.561	
	(2.632)		(2.668)	
Soft provisions (mean)		0.795		1.301
		(5.920)		(6.278)
Hard provisions (max)	3.045***		0.663	
	(1.058)		(1.359)	
Hard provisions (mean)		5.461***		1.219
		(1.943)		(2.480)
GDP per capita (log)	0.113	0.095	0.305	0.301
	(0.193)	(0.200)	(0.267)	(0.266)
Trade/GDP	0.008***	0.008***	0.003	0.003
	(0.003)	(0.003)	(0.005)	(0.005)
Core ILO ratifications	0.060	0.063	–0.037	–0.036
	(0.052)	(0.052)	(0.077)	(0.077)
Observations	2747	2747	2746	2746
R-squared	0.187	0.182	0.234	0.233
Hansen-J p-value	0.595	0.542	0.428	0.451

Notes: Table shows 2SLS estimates. Clustered standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Sample excludes high-income countries. Max aggregation uses the maximum provision strength across RTAs; mean aggregation uses the average provision strength. Soft and hard provisions are lagged two periods. Year and country FE included but not shown.

Finally, we examine whether our results are driven by our sample choice of excluding high-income countries. Table 11 presents the results comparing our baseline specification (Columns 1 and 3) with the sample specification that includes high-income countries. The estimates show that hard RTAs remain positive and significant for *de jure* rights in the full sample, although the magnitude is slightly smaller than our baseline results, suggesting that the effect is stronger in developing countries. For *de facto* rights, the effect remains statistically insignificant, consistent with our main findings.

Table 11: Robustness: Sample Selection

	De jure		De facto	
	(1) Baseline	(2) Full	(3) Baseline	(4) Full
RTA	–0.034	–0.022	0.031	0.020
	(0.025)	(0.016)	(0.036)	(0.021)
Soft provisions	0.518	1.428	0.561	1.259
	(2.632)	(2.487)	(2.668)	(2.587)
Hard provisions	3.045***	2.231**	0.663	0.801
	(1.058)	(0.896)	(1.359)	(1.130)
GDP per capita (log)	0.113	0.095	0.305	0.404*
	(0.193)	(0.155)	(0.267)	(0.232)
Trade/GDP	0.008***	0.007***	0.003	0.003
	(0.003)	(0.003)	(0.005)	(0.004)
Core ILO ratifications	0.060	0.096**	–0.037	–0.013
	(0.052)	(0.045)	(0.077)	(0.066)
Observations	2747	3707	2746	3706
R-squared	0.187	0.167	0.234	0.195
Hansen-J p-value	0.595	0.385	0.428	0.375

Notes: Clustered standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Baseline sample excludes high-income countries; full sample includes all countries. Uses maximum aggregation of provision strength across RTAs. Soft and hard provisions are lagged two periods. Year and country FE included but not shown.

6 Conclusions

This paper studies the effect of free trade agreements with labor provisions on the labor rights of the signatory countries. We analyze the depth of the provisions to determine whether deeper, more comprehensive agreements are more effective than shallower ones. We also distinguish between soft and hard clauses based on whether the provisions are enforceable. We apply an instrumental variables approach to a sample of 105 developing countries covering the period 1995-2021 and including 314 agreements, 89 of which contain labor provisions.

We contribute to the growing body of literature that studies the impact of labor provisions on labor rights by considering the heterogeneity of labor provisions by type and depth, and by extending the analysis to include recent trade agreements. Our findings show that both the type and depth of labor provisions matter. On the one hand, only agreements with enforceable provisions are effective in improving labor rights. Including non-enforceable labor provisions is not significantly different from signing a trade agreement without labor provisions. On the other hand, the positive effect of provisions is larger if the provisions are more comprehensive. However, we also show that the positive effect of provisions is only observed for *de jure* labor rights, but not for *de facto* labor rights.

These findings suggest that it is the composition of labor provisions that matters, and not just their presence. Therefore, when designing trade agreements, related parties should ensure that labor provisions are (i) enforceable and (ii) cover several labor-related areas, rather than

just including vague and non-binding provisions. Moreover, the signatories should acknowledge the limitations of labor provisions when it comes to ensuring compliance with the labor rights established in the law. They are effective in improving the law, but they are unable to translate that improvement into the workplace.

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Appendix

Table 12: First-Stage Regressions

	De jure		De facto	
	(1) Soft	(2) Hard	(3) Soft	(4) Hard
Soft IV (t-2)	0.000	0.023	0.000	0.024
	(0.005)	(0.023)	(0.005)	(0.023)
Soft IV (t-1)	0.125***	0.019	0.124***	0.019
	(0.015)	(0.033)	(0.015)	(0.033)
DSM IV (t-2)	-0.026***	-0.021	-0.026***	-0.022
	(0.009)	(0.036)	(0.009)	(0.036)
DSM IV (t-1)	-0.094***	0.328***	-0.093***	0.328***
	(0.023)	(0.057)	(0.023)	(0.057)
RTA	-0.000	0.018***	-0.000	0.018***
	(0.000)	(0.001)	(0.000)	(0.001)
GDP per capita (log)	-0.002	-0.016	-0.002	-0.016
	(0.004)	(0.018)	(0.004)	(0.018)
Trade/GDP	-0.000	0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Core ILO ratifications	-0.002	0.000	-0.002	0.000
	(0.001)	(0.005)	(0.001)	(0.005)
Observations	2747	2747	2746	2746
F-statistic	21.35	12.75	21.43	12.74
R-squared	0.282	0.573	0.282	0.573

Notes: Dependent variables: Labor provisions. Clustered standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Sample excludes high-income countries. Year and country FE included. F-statistic tests joint significance of excluded instruments. Soft IV (equation 6) captures contagion from partners' RTAs with OBL and/or COOP provisions. Hard IV (equation 7) captures contagion from partners' RTAs with dispute settlement mechanisms.

Table 13: First-Stage Regressions: Convergence

	(1) Soft	(2) Hard
Soft IV (t-1)	0.125***	0.017
	(0.013)	(0.027)
Soft IV (t-2)	0.001	0.019
	(0.005)	(0.024)
DSM IV (t-1)	-0.095***	0.329***
	(0.022)	(0.057)
DSM IV (t-2)	-0.027***	-0.022
	(0.009)	(0.037)
RTA	-0.000	0.017***
	(0.000)	(0.001)
GDP per capita (log)	-0.004	-0.017
	(0.004)	(0.019)
Trade/GDP	-0.000	0.000
	(0.000)	(0.000)
Core ILO ratifications	-0.002*	-0.001
	(0.001)	(0.005)
Observations	2742	2742
F-statistic	31.42	12.36
R-squared	0.332	0.555

Notes: Dependent variables: Labor provisions. Clustered standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Sample excludes high-income countries. Year and country FE included. F-statistic tests joint significance of excluded instruments. Soft IV (equation 6) captures contagion from partners' RTAs with OBL and/or COOP provisions. Hard IV (equation 7) captures contagion from partners' RTAs with dispute settlement mechanisms.

Table 14: First-Stage Regressions: Heterogeneity

	(1) Hard provisions	(2) Hard × Upper-middle
DSM IV (t-1)	0.343***	-0.020
	(0.055)	(0.033)
DSM IV (t-2)	-0.023	-0.038
	(0.033)	(0.033)
DSM IV × Upper-middle (t-1)	0.012	0.592***
	(0.040)	(0.067)
DSM IV × Upper-middle (t-2)	0.037	0.032
	(0.034)	(0.042)
RTA	0.018***	0.007***
	(0.001)	(0.002)
GDP per capita (log)	-0.015	0.001
	(0.018)	(0.010)
Trade/GDP	0.000	-0.000
	(0.000)	(0.000)
Core ILO ratifications	0.000	-0.002
	(0.005)	(0.003)
Observations	2747	2747
F-statistic	15.41	25.07
R-squared	0.572	0.584

Notes: Dependent variables: Labor provisions (hard) and interaction term. Clustered standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Sample excludes high-income countries. Year and country FE included. F-statistic tests joint significance of excluded instruments. Soft IV (equation 6) captures contagion from partners' RTAs with OBL and/or COOP provisions. Hard IV (equation 7) captures contagion from partners' RTAs with dispute settlement mechanisms.