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Deep Trade Agreements, Development Assistance and Sustainability Goals

Joseph Francois, Bernard Hoekman, Miriam Manchin, Filippo Santi

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Abstract*

The literature on preferential trade agreements (PTAs) has mainly focused on the trade effects of non-trade provisions (NTPs) addressing environmental or labor policies. Using a dataset covering more than 120 countries and several decades, we employ a synthetic difference in-difference estimator to study whether such provisions are accompanied with changes in associated sustainability-related performance indicators in developing countries. Given the importance the EU places on using trade to pursue sustainability goals, we differentiate between EU and other PTAs. The analysis is motivated by two arguments that have influenced the design of deep PTAs: (i) legally enforceable NTPs are more effective in improving nontrade outcomes in developing countries; (ii) acceptance of NTPs will be accompanied by (more) aid from highincome partners. We find limited support for these arguments. Enforceable provisions have no effect on performance indicators, whereas non-enforceable provisions in non-EU PTAs are accompanied by deterioration in several outcome measures. Enforceable provisions are associated with less aid; we only find a positive relationship between EU aid and nonenforceable environmental provisions.

Keywords

Design of trade agreements, sustainability goals, development assistance

JEL codes

F13, F16, F17, F18, F35, O19

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Author contributions. Francois: conceptualization and review; Hoekman: research design, funding acquisition, writing, review and editing; Manchin: research design, data curation, analysis, writing and review; Santi: methodology, research design, data construction and interpretation, estimation, empirical analysis, visualization, writing and review.

1 Introduction

Preferential trade agreements (PTAs) increasingly incorporate non-trade provisions (NTPs) pertaining to environmental protection, labor standards, and civil rights (Dür *et al.*, 2014). The associated NTPs are largely non-negotiable for developing countries.[1] The purported motivation for such provisions is to improve standards in developing countries. Whether they do so is a neglected research question. The literature has mainly focused on implications of deep PTAs for trade[2] and the drivers for the incorporation of NTPs in trade agreements, e.g., lobbying by civil society organizations and multinational firms for or against expanding the coverage of PTAs to include NTPs.[3]

In this paper, we investigate whether NTPs addressing environmental, labor, and civil rights lead to improvements in non-trade performance indicators in developing country PTA signatories. We do so by exploiting information on the coverage of PTAs compiled by Mattoo *et al.* (2020) and a range of outcome indicators pertaining to the policy areas addressed by NTPs (Manchin, 2021), using a synthetic difference in difference (SDID) estimator proposed by Arkhangelsky *et al.* (2021) to address endogeneity concerns.

The analysis is motivated by two dimensions of trade and development policy debates in high-income countries with respect to the use of trade (preferential market access) in pursuit of sustainable development goals. The first concerns the design of NTPs in PTAs, specifically whether provisions should be enforceable through legal action by signatory states or private actors, allowing trade to be used as a sanctioning device. Advocates of enforceable provisions argue that this is necessary for NTPs to be effectively implemented and that soft law or best efforts type NTPs will not lead to meaningful improvements in desired non-trade outcomes (Bronckers and Gruni, 2021). In contrast, development professionals often argue in favor of soft law provisions, based on the view that these are more likely to improve outcomes of interest by providing a focal point for dialogue and

[1] See for example Peacock *et al.* (2019) orAllee and Elsig (2019).

[2] Recent papers include Borchert *et al.* (2021), Breinlich *et al.* (2022), Carrère *et al.* (2022), Mattoo *et al.* (2022), Fontagne *et al.* (2023) and Hoekman *et al.* (2023).

[3] See, e.g., Lechner (2016); Van den Putte and Orbie (2015); Blanchard and Matschke (2015); Blanga-Gubbay *et al.* (2020).

cooperation between PTA signatory governments and engagement with stakeholders.[4]

The second feature of policy debates on the design of NTPs that motivates the analysis concerns the role of development aid to strengthen the capacity of developing countries to implement NTPs and achieve associated sustainable development goals. Many development professionals argue that technical and financial assistance targeting specific non-trade goals is needed to complement NTPs, whether enforceable or not (Berliner *et al.*, 2015; Fiorini *et al.*, 2019). Proponents of conditioning preferential market access on acceptance of NTPs also recognize that developing partner governments may need assistance to strengthen domestic institutions and regulatory capacity in order to effectively implement NTPs (Bilal and Hoekman, 2019). As a result, deep PTAs tend to be accompanied by promises to provide assistance.[5] Such assistance may be affected by the nature of NTPs. We expect that nonenforceable NTPs are more likely to be associated with aid following the focal point argument noted above, whereas enforceable NTPs may not lead to more aid. Insofar as signatory countries have put in place the associated regulatory regime or legislation (i.e., have implemented the provisions), this could obviate the need for assistance. Moreover, if dispute settlement procedures are regarded as the appropriate instrument to ensure compliance, enforceable NTPs may lead to a reduction in aid.

The existing literature overwhelmingly focuses on the trade and welfare effects of deep PTAs. Few papers consider the relationship between NTPs in deep PTAs and non-trade outcomes in developing country signatories. Robust empirical analysis of the effects of NTPs on associated non-trade outcomes that controls for endogeneity is very sparse.[6] Research that seeks to identify causal relationships between NTPs and associated changes in

[4]Enforceability featured prominently in the consultations on the 2022 EU review of Trade and Sustainable Development chapters in EU PTAs (Velut *et al.*, 2022), which centered on the appropriate design of cooperation to achieve sustainable development objectives, including in the area of labor standards and environment. One result of the review was a decision to place greater emphasis on compliance with NTPs.

[5]Baccini and Urpelainen (2012), Brandi *et al.* (2022).

[6]There is a substantial literature built largely around case studies, focusing on specific countries or specific types of NTPs (e.g., Hafner-Burton (2009), Kim (2012), Spilker and Böhmelt (2013), Postnikov (2014)). This literature often fails to apply methods that allow identification of causal relationships between PTAs and non-trade outcomes. Hafner-Burton (2009) for example argues that legally enforceable human rights clauses in PTAs are more likely to induce compliance. Spilker and Böhmelt (2013) show this finding is affected by potential selection bias.

related outcome indicators tends to focus on specific measures of non-trade performance. Examples include Baghdadi *et al.* (2013), Abman and Lundberg (2020), Brandi *et al.* (2020), and Martínez-Zarzoso (2018) on environmental protection; Van den Putte and Orbie (2015), Aissi *et al.* (2018), and Lundberg *et al.* (2022) on labor and workers' rights and Zerk (2019) on civil and human rights. Abman *et al.* (2024) explore the causal impact of environmental provisions in PTAs on forest coverage loss. Their estimates suggest that PTAs tend to increase pressure on the environment (especially through deforestation in developing countries), but that this negative impact may be partially offset by enforceable environmental protection obligations. Similarly, Tian *et al.* (2022) estimate that increased global CO_2 emissions accompanying growth in production and trade resulting from the Regional Comprehensive Economic Partnership will dominate any potential mitigation commitments by signatories.

We adopt a broader perspective. Focusing on environmental protection, labor standards regulation, and civil rights, we seek to identify causal relationships between the inclusion of NTPs that cover these policy domains and a range of related outcome indicators. In doing so, we differentiate between enforceable and best-efforts-type provisions. While we include all PTAs signed with developing countries, we provide separate results for EU-specific PTAs because the EU has negotiated an extensive network of PTAs with developing countries, has been a leader in including NTPs, and has a long history of providing development assistance, including support for projects targeting improvement in environmental, labor and civil rights protection.

We advance the literature by (i) applying a consistent framework across the different policy domains, as opposed to the issue-, provision-, country- or PTA-specific focus in much of the research in this area; (ii) differentiating between the effects of enforceable versus non-enforceable NTPs; and (iii) evaluating the relationship between acceptance of NTPs by developing countries and ODA allocations, distinguishing between assistance for environmental, labor and civil rights projects and total ODA flows. We mitigate selection concerns by matching treated and control units on trade intensity and a range of country characteristics.

Our findings suggest that NTPs for labor and civil rights are not associated with changes in related performance, independent of enforceability. Significant coefficient estimates are only found in the case of environmental NTPs. These are mostly negative, linked to increased economic activity, and mostly involve nonenforceable provisions in non-EU PTAs. Thus, for example, CO_2 emissions increase by 37-52% compared to the sample mean for non-EU PTAs. Such adverse impacts are not observed for EU agreements, suggesting EU PTAs do more to offset any deterioration in sustainability indicators caused by liberalization-induced trade expansion. There are fewer instances of significant negative estimates when the focus is on enforceable provisions, suggesting that enforceability may do more to offset the adverse impacts of greater economic activity than non-enforceable provisions.

Acceptance of NTPs by developing countries does not necessarily lead to more aid. We find a mixture of complementarity and substitution in the relationship between NTPs and aid. Countries making enforceable commitments on labor standards are accorded *less* ODA by the EU. A similar negative relationship is observed for enforceable NTPs and aid in non-EU PTAs.[7] In contrast, we find a positive association between total ODA and *non*-enforceable environmental provisions in EU PTAs. Thus, the pattern that emerges is that EU PTAs appear to be less likely to have a negative impact on environmental performance in developing partner countries and that this may be ssociated with complementary allocations of development assistance.

The paper proceeds as follows. Section 2 presents our data on NTPs in PTAs and sustainability or other non-trade outcome indicators associated with different types of NTPs. In Section 3 we discuss our methodology and the empirical scenarios. Section 4 presents the results. Section 5 turns to the relationship between NTPs and development assistance. Section 6 concludes.

[7]EU PTAs do not have enforceable civil rights-related provisions.

2 Data

We combine information from three sources. Data on NTPs come from the World Bank Deep Trade Agreements database (Hofmann *et al.*, 2019; Mattoo *et al.*, 2020). This includes information on all NTPs in 279 agreements signed between 1958 and 2015. The database distinguishes 14 "core" provisions that reconfirm existing WTO disciplines or impose additional obligations in policy areas that are covered by the WTO, as well as 38 provisions in areas that go beyond extant multilateral commitments (WTO-extra provisions). Figure 1 shows the growth over time in the inclusion of provisions on civil rights, environmental protection, and labor rights in trade agreements. The database also provides information on their legal nature, including their enforceability.[8] A provision is considered legally enforceable if the language used is sufficiently precise and if it has not been excluded from dispute settlement procedures under the PTA.[9]

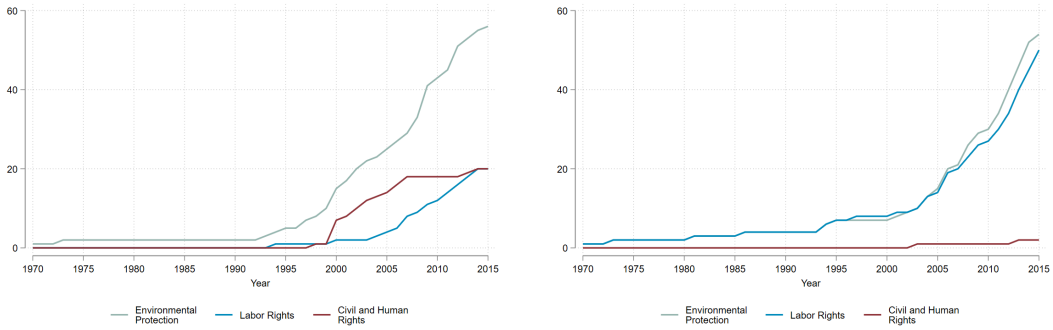
We focus on three types of WTO-extra provisions: NTPs addressing civil rights, labor regulation and environmental protection. We reduce the bilateral dataset to a panel defined at *country* × *year* level. For each country, we consider the year it signs a PTA containing NTPs of interest, the partner country and whether NTPs are enforceable through a formal dispute settlement process. In cases where a country signs more than one PTA, we consider the first instance in which a NTP of interest is included and assume that it stays in force even when additional agreements (possibly with different sets of partners and different sets of obligations) are signed. We allow for changes in enforceability of NTPs over time in subsequent agreements.

We merge the data on NTP provisions in PTAs with the NTPOID_v2 dataset (Manchin, 2021) containing information on a broad range of economic, political, environmental, and

[8]Information on legal enforceability is reported for 52 selected policy areas. An extended version of the dataset provides more detailed indicators for a subset (18) of these policy areas. See https://datatopics.worldbank.org/dta/about-the-project.html.

[9]Example for enforceable: "Control, inspection and approval procedures *shall* be carried out in accordance with the provisions of Article 8 and Annex C of the SPS Agreement." (PTA China – Costa Rica, Article 64, Chapter 6 on Sanitary and Phytosanitary Measures). An example for non-enforceable: "Each Party *should encourage* enterprises operating within its territory or subject to its jurisdiction to *voluntarily incorporate* internationally recognized standards of corporate social responsibility in their practices and their internal policies, including statements of principle[s] (...) such as (...) anti-corruption." (PTA Canada – Republic of Korea, Article 8.16 on Corporate Social Responsibility and corruption in investment measures.)

Figure 1: *Evolution of environment, labor and civil rights provisions in PTAs*



Not Legally Enforceable | Legally Enforceable

Notes: Number of issue specific provisions in PTAs signed by sample countries over time. Source: Hofmann *et al.* (2019).

social indicators,[10] and the Environmental Performance Index (EPI) database (Wendling *et al.*, 2020), which provides detailed indicators related to climate, environment, and ecosystem vitality.[11] Relevant outcome indicators for each of the three policy domains of interest (environment, labor and civil rights) are selected based on data availability. The requirements of continuity, broad country coverage and time span needed for estimation reduces the set of usable indicators, as many labor and civil rights indicators are characterized by limited variation over time, series breaks or short duration.

We retain 12 distinct environmental indicators.[12] These capture three types of environment-related outcome variables. The first is related to climate change, the second is associated with public health (local pollution), and the third captures ecosystem vitality. The climate-related variables comprise the ratio of CO_2 emissions (in kg) to GDP (in PPP \$) and CO_2 emissions per million US\$ of exports. These are sourced from the World Bank World Development Indicators.[13] Local pollution is captured by four indicators,

[10]The dataset draws on multiple sources, including the Political Institutions 2017 (DPI) database, version 3.0 of the International Political Economy Data Resource database (IPE), the structural policy indicators database for economic research (SPIDER), the 2018 Quality of Government dataset (QoG)) and World Bank World Development Indicators. See Manchin (2021) for sources and details.

[11]Adopting a firm level perspective Paschoaleto and Martínez-Zarzoso (2024) develop a firms environmental performance index, which they consider as a determinant of firms performance of participation in global value chains.

[12]Table A-5 lists the set of indicators that are selected and their source.

[13]CO_2 emissions per million US\$ of exports are computed by dividing total CO_2 emissions of a country by its total exports. Export data come from the UN COMTRADE database and exclude oil and gas.

all sourced from the EPI database (Wendling *et al.*, 2020):[14] PM2.5 exposure, SO_2 intensity, NO_x intensity, and ozone exposure. All of these are measured using the number of age-standardised disability-adjusted life-years lost per 100,000 persons due to exposure to ground-level pollution of the related element. Finally, the ecosystem vitality indicators span: forest area (% of land area), a protected areas index (the proportion of biologically-scaled environmental diversity included in a nation's terrestrial protected areas), the species habitat index (the proportion of suitable habitats within a country that remains intact for each species relative to a 2001 baseline), sustainable nitrogen management (an index measuring the efficiency in application of nitrogen fertilizer, a measure of efficient use of pesticides), a species protection index (measuring species-level ecological representativeness of national protected areas), and wetland loss (quantified using a five-year moving average of the percentage of gross losses in wetland areas relative to a 1992 baseline). Forest area is sourced from the World Bank WDI; the other five measures are obtained from the EPI database. With the exception of the CO_2 measures, all of the environmental outcome measures are indicators, with a higher value implying better performance. Conversely, an increase in CO_2 implies a worsening of emissions.

We use three measures for labor rights and worker protection. The first is the *Mosley-Uno labor rights* indicator, a measure of collective labor rights (Mosley and Uno, 2007). The second is the *QOG worker rights* indicator, a composite index measuring freedom of association in the workplace, the right to bargain collectively and a prohibition on the use of any form of forced labor; a minimum age for employment of children; and conditions of work (minimum wages, hours of work, occupational safety and health).[15] This indicator captures regulation of labor conditions more broadly. The third measure is sourced from the *Centre for Business Research Labour Regulation Index* (Adams and Deakin, 2017), a dataset spanning 117 countries starting in the 1970s, covering 40 separate indicators on labor and work conditions. These are divided into five categories: regulation of different forms of employment, working time, dismissal, employee representation, and

[14] Details on the EPI variables are provided at https://epi.yale.edu/.

[15] This index is adapted from the International Trade Union Confederation Global Rights Index. See https://datafinder.qog.gu.se/variable/wef_wr.

industrial action. Following Messerschmidt and Janz (2023), we aggregate all the available indicators to construct an overall measure capturing the performance of a country with respect to labor standards and regulations. In addition, we construct a measure for each of the five constituent categories of regulation that make up the aggregate indicator. This helps to identify whether the various components of labor regulation change following signature of a PTA that includes labor-related NTPs.

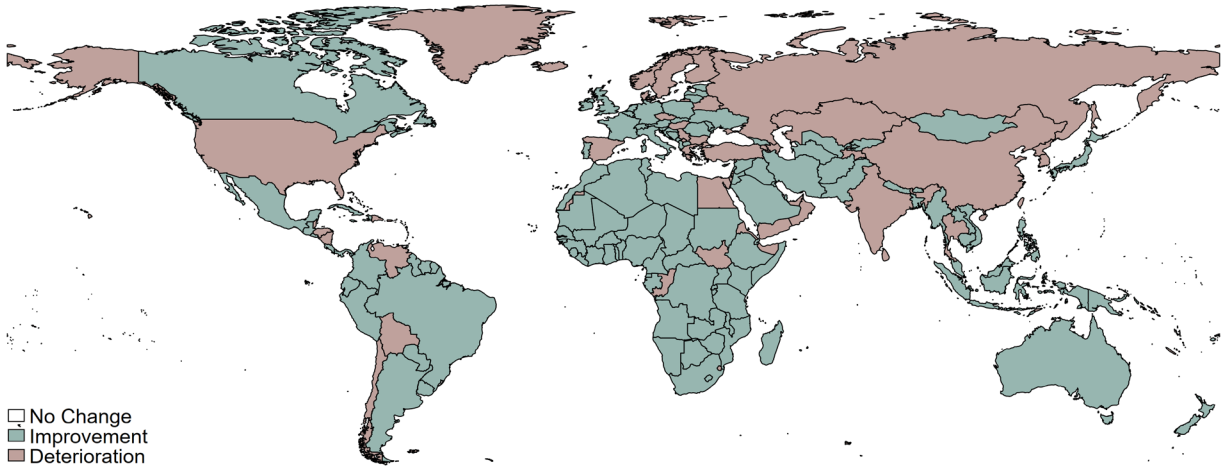
For civil rights, we use an electoral democracy index – *polyarchy* – a measure of freedom of expression, obtained from the Variety of Democracy database, which ranges between zero and one, with higher values indicating better outcomes; a female political participation (*empowerment*) index; a *political liberties* index; and an index for *freedom of political association* which measures the right of citizens to assemble freely and associate in political parties, cultural and other organizations.

Data on official development assistance flows are sourced from the OECD Creditor Reporting System.[16] This includes disaggregated data on aid allocated for environmental, labor protection and civil rights projects as well as total ODA provided by a donor country to a recipient nation.

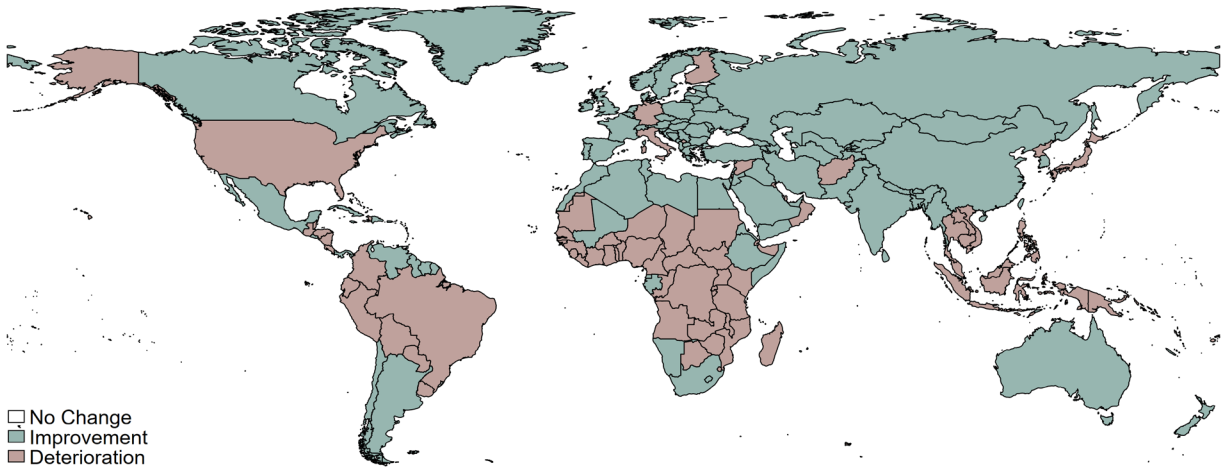
Figure 2 provides a snapshot of the average direction of change over the sample period in the outcome indicators used in the empirical analysis. There is significant heterogeneity across indicators and countries during the period considered, with a mix of improvements and deterioration across both high-come and developing countries for the different policy areas. Table 1 summarizes the number of PTAs with enforceable and non-enforceable NTPs in our sample, as well as the number of countries making such commitments. Annex Table A-3 provides further information on signatories of PTAs with NTPs, including the number of "overlapping provisions" – instances where a country has accepted NTPs in more than one PTA.

[16] https://stats.oecd.org/index.aspx/Index.aspx?DataSetCode=CRS1.

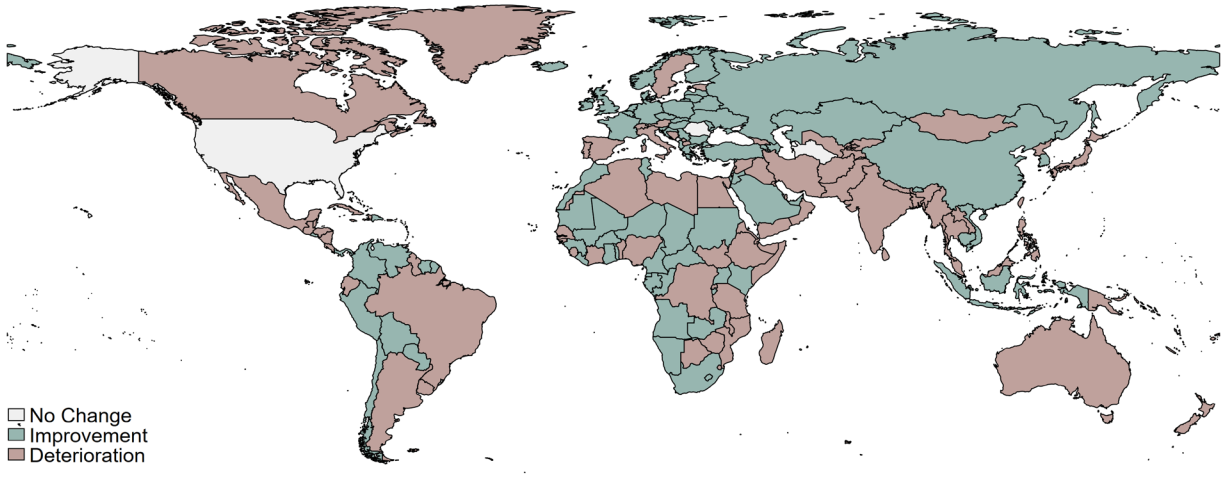
Figure 2: *Direction of change in non-trade outcomes, 1990-2015*



Civil Rights



Environmental Protection



Labor Rights

Notes: Percentage variation in Civil Rights, Environmental, and labor Rights Protection between 1990 and 2015. Simple averages of indicators described in the text for the three policy areas considered.

Table 1: *Agreements and Number of Signatories by Type of Provision*

Panel A: Agreements with active provision				
	ALL		**EU**	
	Non Enforceable	**Enforceable**	**Non Enforceable**	**Enforceable**
Environment	57	54	18	16
Labor	20	50	4	15
Civil rights	21	2	16	0
Panel B: Countries with active provision				
	ALL		**EU**	
	Non Enforceable	**Enforceable**	**Non Enforceable**	**Enforceable**
Environment	78	77	17	26
Labor	30	66	2	26
Civil rights	53	8	18	0

Notes: Panel A reports the number of agreements including either an Environmental, Labor, or Civil and Human Rights related provision. Panel B lists instead the number of signatories. The notation "Binding" refers to all provisions that also establish some form of legal enforcement mechanism.

Our dataset spans more than 120 countries for which we have an uninterrupted time series for both the outcome indicators and explanatory variables. To ensure an adequate number of pre-treatment and post-treatment observations, which we set to a minimum of 5 years respectively, we focus on all PTAs signed between 1995 and 2010.[17] We restrict the partner countries in PTAs negotiated by the EU, US and other OECD countries to low and middle income countries, excluding EU accession countries.[18] The countries that are considered in each exercise are listed in Annex Tables A-1 and A-7.

3 Empirical framework

Evaluating the existence, sign, and magnitude of the causal effect of NTPs on corresponding non-trade outcomes in partner countries is challenging because identifying a suitable counterfactual scenario is difficult - i.e. what would have happened if a country did not sign a PTA with the NTP of interest. Matters are further complicated by the staggered adoption of PTAs by countries over time, with countries possibly accepting the same type of NTP with different partners.

[17] In a few cases we partially impute some covariates and outcome indicators to preserve a minimum sample size.

[18] We exclude EU accession countries from the sample because of the special nature of their pre-accession trade agreements with the EU, which included extensive financial transfers and much deeper cooperation than observed in other trade agreements.

To address these issues, we apply a synthetic difference-in-difference (SDID) estimator proposed by Arkhangelsky *et al.* (2021). This estimator combines the desirable features of a difference-in-difference (DID) framework with the flexibility of the synthetic control methodology (Abadie and Gardeazabal, 2003). The SDID estimator can be regarded as a "doubly-weighted," two-way fixed effects (TWFE) DID estimator, where country- and time-specific weights are computed from the data to (a) *align* pre-exposure trends in outcomes for treated (in our case, countries signing a PTA with a given type of NTP) and non-treated countries; and (b) *balance* pre-exposure and post-exposure time periods to reduce the influence of the staggered nature of signing PTAs.[19]

The constructed comparability that derives from the double-weighting procedure allows the SDID estimator to potentially compensate for a lack of parallel pre-trends between treated and untreated countries in the data, an issue that might affect the robustness of traditional and staggered DID estimators. At the same time, due to the inclusion of two-way fixed effects and a different weighting algorithm, it does not require an exact match in pre-treatment trends for treated and non-treated units, a requirement of the synthetic control method that is rarely satisfied (Hollingsworth and Wing, 2020; McClelland and Mucciolo, 2022).

Equation 1 presents the optimization process implemented by the SDID estimator (expressed as a treatment assignment mechanism) to identify the average causal effect on the treated countries (referred to as τ):

$$(\hat{\tau}, \hat{\mu}, \hat{\alpha}, \hat{\beta}) = \underset{\tau,\mu,\alpha,\beta}{\arg\min} \left\{ \sum_{i=1}^{N} \sum_{t=1}^{T} \left(Y_{i,t} - \mu - \alpha_i - \beta_t - W_{i,t}\tau\right)^2 \hat{\omega}^{sdid} \hat{\lambda}_t^{sdid} \right\} \tag{1}$$

The part of equation 1 in parentheses comprises the TWFE component of the SDID estimator, where the term $Y_{i,t}$ refers to the value of our outcome variable (the performance of a PTA signatory country with respect to a given non-trade outcome indicator), and α_i and β_t are the country and time fixed effects, capturing the trends within both dimensions. $W_{i,t}$ is a binary indicator that takes the value 1 in the post-PTA/NTP pe-

[19] These two forms of "weighting" turn the TWFE estimator from being "global" to "local" in constructing a suitable control group, giving greater weight to countries that are more similar to the "treated" ones, and to time periods that are proximate to the treatment.

riod; τ is the treatment effect of accepting the NTP and μ is a constant term. The first term outside the parentheses ($\hat{\omega}^{sdid}$) are the unit weights that Abadie and Gardeazabal (2003) use to construct the synthetic counterfactual. Finally, $\hat{\lambda}_t^{sdid}$ represents the factor used to discount the distance in time between different treatment periods across countries. The two parameters allow weighting of the difference between treated and control units.[20] It should be noted that Equation 1 refers to the single treatment period case, as extensively discussed by Arkhangelsky *et al.* (2021). The SDID estimator allows to control for the staggered signing of trade agreements, by computing the weighted average of the estimated average treatment on the treated (ATT) across treatment periods, where the weights are proportional to the size of each treatment cohort in the sample. This is summarized by equation 2 below.[21].

$$\hat{ATT} = \sum_{c \in C} \frac{T_{post}^{c}}{T_{post}} * \hat{\tau}^{c} \tag{2}$$

where C refers to the set of all years in which a PTA has been signed in our sample, and the weighting term $\hat{\tau}^c$ refers to the treatment effect τ from Equation 1 from treatment cohort c.

We consider a country as "treated" if it signs an agreement that includes a provision of interest in a given year, distinguishing between enforceable and non-enforceable NTPs.[22] Following the synthetic control and DID literature, we include a set of additional country characteristics to improve the matching between PTA signatories and the control group. Annex Table A-2 reports the basic summary statistics for the variables included in the matching algorithm. We include three measures of market size and income (GDP, population and GDP per capita), a measure of government accountability as a proxy for the likelihood a government will comply with international agreements (from the WDI database), the value of total exports and the share of total exports accounted for by the EU and the US, respectively. All else being equal, the greater the trade intensity with a

[20] See Annex B for a non-technical description of the SDID estimator.

[21] For further details, see the appendix to Arkhangelsky *et al.* (2021), and the work by Athey and Imbens (2022); Pailañir and Clarke (2022)

[22] If a country has signed more than one agreement containing the same type of NTP in the sample period, the earlier one is chosen.

given high-income partner, the more likely a developing country is to comply with NTPs.

A further concern may arise if countries selectively opt for specific provisions leading to reverse causality. However, substantial evidence indicates that there is limited, if any, opportunity to modify the content of NTPs for developing countries. Peacock *et al.* (2019) show that new PTAs tend to copy text from previous agreements leaving little or no scope for changes by signatories. Allee and Elsig (2019) using text analysis show that about one-third of PTAs copy 80% or more of their content word for word from another PTA, and a large share of PTAs cut and paste text from prior agreements. In addition, as can be seen from Table 1, often several countries sign the same agreement, limiting the possibility of tailoring provisions to specific signatories' interests. Thus, such reverse causality is unlikely to emerge in the case of the agreements analyzed here.

3.1 Scenarios and control groups

We consider two scenarios. The first investigates whether non-enforceable NTPs lead to improved outcomes in corresponding non-trade areas compared to PTAs without such provisions. The treatment group thus comprises of all countries that signed a PTA including the NTP of interest provided it remains non-enforceable. We exclude all countries signing a PTA with non-enforceable provisions if during the period of interest the country signs an enforceable provision. To disentangle the effects of signing a non-enforceable NTP from the effects of a PTA, the control group includes all countries that have signed at least one PTA, but no PTA with the NTP of interest.

The second scenario instead considers the impact of enforceable provisions. The treatment group in this case is limited to countries signing at least one PTA that includes an enforceable NTP. Similarly to the first scenario, the control group encompasses all countries that signed PTAs without the provision of interest during the sample period.[23] By stipulating that countries in the control group must have signed a PTA, we mitigate the influence of PTA-induced trade expansion on non-trade outcomes, such as potential increases in pollution or deterioration of specific environmental indicators.

[23]We also refer to these same scenarios in Section 5, where we discuss to what extent developing countries that sign PTAs including NTPs obtain more (or less) development aid.

Since the EU has been one of the most important proponents of including NTPs in its PTAs and has concluded the most PTAs with enforceable and non-enforceable provisions with partner countries, we report separately results for EU PTAs and rest of the world PTAs.[24] To avoid potential "contamination" when a country signs a PTA that includes a provision of interest with more than one trading partner, we further restrict the set of countries considered treated to those that do not sign an agreement with other partner countries.[25]

4 Results

Scenario 1 - Effect of signing a non-enforceable provision

Table 2 reports the estimated ATT and percentage changes relative to the mean, as per Equation 2 for the first scenario estimating the impact of non-enforceable provisions. For all the outcome measures reported in the table an increase indicates an improvement. The only exception pertains to results for CO_2, where an increase denotes a worsening in CO_2 emissions. Figure 3 plots the standardized ATT estimates to facilitate comparison of the magnitude and direction of changes across outcome indicators for EU and non-EU PTAs.

We find significant changes (indicated by boldface font) only in environmental outcomes. Provisions in non-EU agreements always lead to worsening outcomes, most likely linked to increased economic activity as revealed by several deteriorating indicators. Some of the decrease in indicators is quite large; most importantly, CO_2 emissions increase by about 52-37% compared to the mean. In addition, there is a significant deterioration in ozone exposure, nitrogen management, and protected areas.

[24] Thus, in the case of EU agreements, we identify a country as "treated" if it signed an agreement including a NTP with the EU. If a country signs more than one PTA with the same partner, we define the treatment using the earliest one.

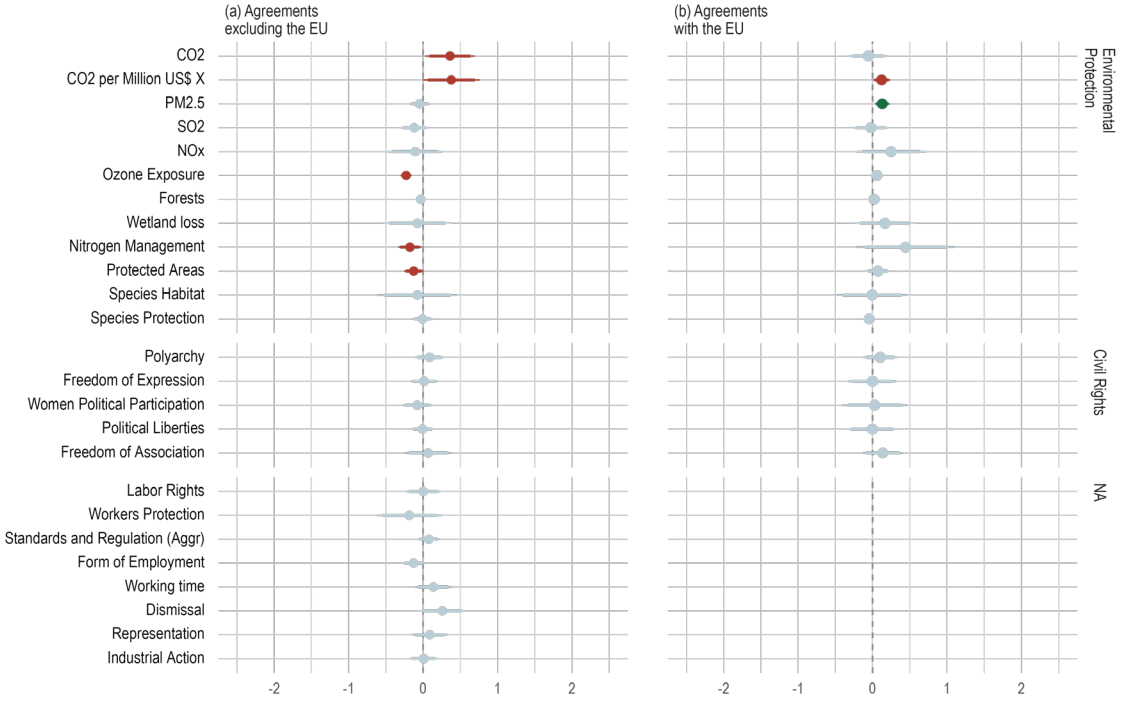
[25] This means for instance that countries signing a PTA with non-EU partners are not considered when assessing the effect of a PTA with the EU, irrespective of whether such other agreements were signed before or after the PTA with the EU. The exclusion of countries that sign more than one PTA with different partners mitigates potential identification issues that might arise from being subject to multiple provisions. The downside of this approach is a reduction in the sample of eligible countries for both the control and treatment group. Annex A reports additional information on the matching variables and the

Table 2: *Average Treatment Effect on signatories - Non-Enforceable Provisions vs No Provisions*

		Non-EU agreements		EU agreements	
	Policy Outcome	**ATT**	**δ pct.**	**ATT**	**δ pct.**
Environmental Protection	CO2	**0.14****	**37.18%****	-0.021	-5.71%
	CO2 per Million US$ X	**0.00***	**51.81%***	**0.000****	**15.63%****
	PM2.5	-0.66	-1.62%	**1.921*****	**4.75%*****
	SO2	-76.94	-15.36%	-14.148	-2.82%
	NOx	-2.08	-3.82%	4.971	9.15%
	Ozone Exposure	**-4.35*****	**-9.05%*****	1.209	2.50%
	Forests	-0.79	-2.44%	0.503	1.55%
	Wetland loss	-1.88	-3.29%	4.163	7.30%
	Nitrogen Management	**-2.29****	**-6.28%****	5.918	16.22%
	Protected Areas	**-1.86***	**-7.46%***	1.072	4.32%
	Species Habitat	-0.81	-0.87%	-0.053	-0.05%
	Species Protection	-0.16	-0.23%	-1.051	-1.55%
Labor Market Regulation	Labor Rights	0.02	0.07%		
	Workers Protection	-0.11	-11.93%		
	Standards and Regulation (Aggr)	0.01	1.37%		
	a. Form of Employment	-0.02	-4.69%		
	b. Working time	0.02	3.11%		
	Dismissal	0.03	7.17%		
	Representation	0.01	2.76%		
	Industrial Action	0.00	0.31%		
Civil Rights	Polyarchy	0.02	4.32%	0.023	5.05%
	Freedom of Expression	0.00	0.67%	0.000	-0.00%
	Women Political Participation	-0.02	-2.48%	0.006	0.92%
	Political Liberties	0.00	-0.36%	-0.001	-0.10%
	Freedom of Association	0.06	5.69%	0.126	11.56%

Notes: Average Treatment effect on the Treated (ATT) on signatories of non-legally enforceable provisions, compared to signatories of PTAs without the provision of interest. Percentage change refers to the relative change compared to the outcomes' sample averages. A positive (negative) variation indicates an improvement (deterioration) with respect to the outcome of interest. Boldface font indicates a statistically significant effect. Sources of the dependent variables are reported in Annex Table A-5.

Figure 3: *Scenario 1 - Non-enforceable Provisions vs No Provisions (Standardized ATT)*



Notes: standardized ATT effect. See Table 2 for the un-standardized ATT coefficients.

For EU agreements, only CO_2 emissions worsen, but to a much lesser extent than in the case of non-EU agreements, increasing some 16% compared to the mean. Moreover, we find a small improvement in PM2.5 pollution, with the indicator increasing almost 5% relative to the mean.

Overall, the results reveal few statistically significant effects, and for almost all outcome variables where significant changes are found, the relationship is negative, with non-enforceable NTPs in non-EU PTAs associated with a worsening of some environmental outcome indicators. This is especially the case with emissions (CO_2, CO_2 embedded in exports), and ozone exposure). This finding is consistent with the literature that an increase in economic activity, and thus emissions, follows the signing of a PTA.[26] The estimated effects in the case of both EU and non-EU agreements are small and mostly not significant, These findings suggest that environmental NTPs in EU PTAs, even if not en-

samples of treated and control groups across the scenarios investigated.

[26] e.g., Abman *et al.* (2024), Tian *et al.* (2022).

forceable, are more effective in offsetting potentially adverse environmental consequences of an increase in bilateral trade induced by implementation of trade liberalization than is the case for non-EU PTAs.

Scenario 2 - Effect of signing enforceable provisions

Changes in nontrade outcome indicators associated with enforceable NTPs are reported in Table 3. As before, Figure 4 plots the standardized ATT estimates. Results differ from those for non-enforceable provisions in that for enforceable provisions there is less of a difference between EU and non-EU agreements.[27] In particular, we obtain substantially fewer significant negative estimates for environmental outcome indicators in the case of non-EU agreements, with only one small, marginally significant, worsening in species habitat. Enforceable environmental provisions in EU PTAs are not associated with any significant changes in outcome indicators, either negative or positive. Thus, for environmental outcomes it appears that enforceability does not generate improvement in nontrade outcome indicators, but enforceability is associated with better outcomes in the sense that we do not observe instances where inclusion of a NTP worsens associated outcome indicators.

As was the case for non-enforceable provisions on labor standards and civil rights, with the exception of a weakly significant decrease in one of the labor market protection variables, workers' representation, enforceable provisions in these areas are not accompanied by improvement in performance indicators.

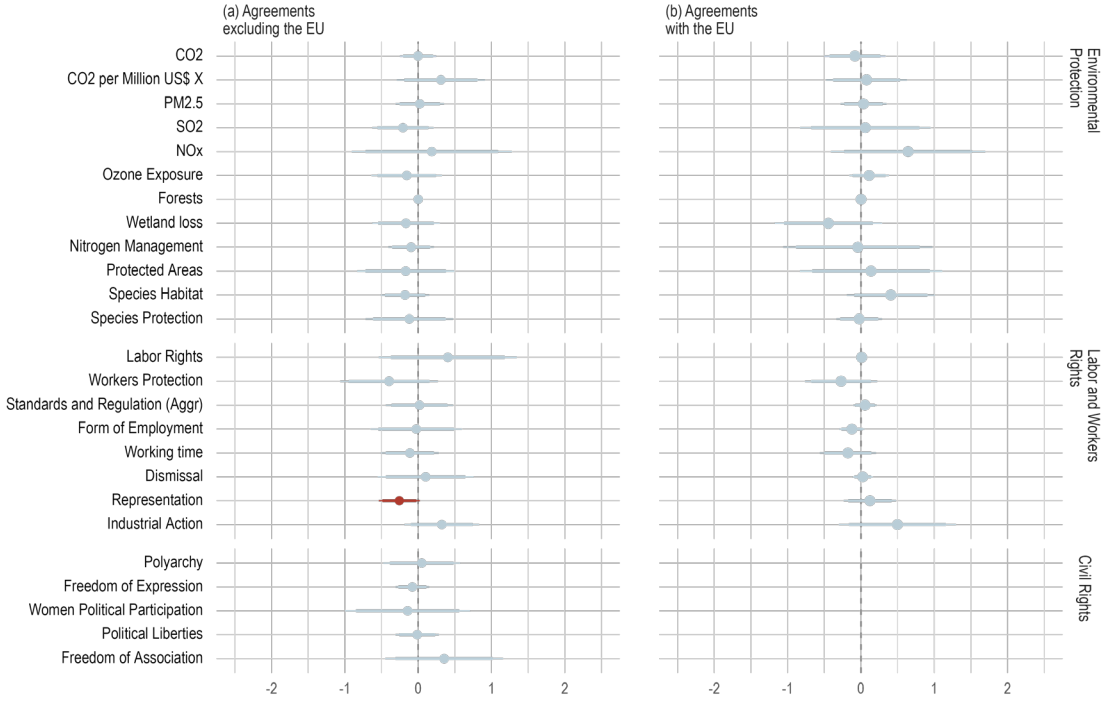
[27] A caveat to these findings when comparing non-enforceable to enforceable provisions is that the set of countries considered as treated in these two scenarios is not the same.

Table 3: *Average Treatment Effect on signatories - Enforceable Provisions vs No Provisions*

		Non-EU agreements		EU agreements	
	Policy Outcome	**ATT**	**δ pct.**	**ATT**	**δ pct.**
Environmental Protection	CO2	-0.001	-0.17%	-0.041	-11.14%
	CO2 per Million US$ X	0.000	47.21%	0.000	-53.13%
	PM2.5	0.332	0.81%	0.560	1.37%
	SO2	-677.381	-135.33%	54.317	10.85%
	NOx	4.006	7.38%	14.515	26.73%
	Ozone Exposure	-3.586	-7.46%	2.921	6.07%
	Forests	0.012	0.03%	0.054	0.17%
	Wetland loss	-4.039	-7.09%	-11.158	-19.57%
	Nitrogen Management	-1.490	-4.09%	-0.726	-1.99%
	Protected Areas	-2.138	-8.60%	2.037	8.19%
	Species Habitat	-2.762	-2.99%*	5.115	5.53%
	Species Protection	-2.979	-4.42%	-0.606	-0.89%
Labor Market Regulation	Labor Rights	2.978	12.56%	0.069	0.28%
	Workers Protection	-0.236	-25.72%	-0.167	-18.18%
	Standards and Regulation (Aggr)	0.001	0.30%	0.004	0.86%
	a. Form of Employment	-0.004	-0.93%	-0.018	-4.30%
	b. Working time	-0.012	-2.32%	-0.019	-3.57%
	c. Dismissal	0.013	2.68%	0.003	0.57%
	d. Representation	**-0.035***	**-8.61%***	0.016	3.79%
	e. Industrial Action	0.036	9.25%	0.047	12.30%
Civil Rights	Polyarchy	0.011	2.47%		
	Freedom of Expression	-0.023	-4.09%		
	Women Political Participation	-0.032	-5.01%		
	Political Liberties	-0.004	-0.66%		
	Freedom of Association	0.335	30.79%		

Notes: Average Treatment effect on the Treated (ATT) on signatories of legally enforceable provisions, compared to signatories of PTAs without the provision of interest. Percentage change refers to the relative change compared to the outcomes' sample averages. A positive (negative) variation indicates an improvement (deterioration) with respect to the outcome of interest. Boldface font indicates a statistically significant effect. Sources of the dependent variables are reported in Annex Table A-5.

Figure 4: *Scenario 2 - Legally enforceable provision vs No Provisions (Standardized ATT)*



Notes: standardized ATT effect. See Table 2 for the un-standardized ATT coefficients.

5 Non-trade provisions and development assistance

As noted in the Introduction, NTPs may be focal points for policy dialogue and cooperation between PTA signatories to realize non-trade goals. In practice, cooperation with developing countries will focus on development assistance programs and projects. In the case of non-enforceable NTPs, any positive effect on performance indicators may be conditional on development cooperation that directly targets implementation of NTPs and helps to incentivize partner governments to accept NTPs. More generally, NTPs, whether enforceable or non-enforceable, may be more effective if complemented by provision of technical and financial support.

There is a large literature investigating the effects of development assistance on trade, including the so-called aid for trade projects and programs that seek to enhance trade

capacity and facilitate trade.[28] Much less attention has been devoted to the relationship between official development assistance (ODA) and the acceptance by developing countries of NTPs in PTAs. In this section, we apply the SDID methodology to assess whether ODA complements NTPs, reflected in funding for projects to assist developing countries implement measures to bolster labor rights or environmental policy. Although we expect to observe a positive relationship, this need not be the case if acceptance of enforceable NTPs is perceived to signal that signatories have the capacity to implement them – as otherwise a country presumably would not accept the underlying commitments. Insofar as this is so, enforceable commitments may be regarded as substitutes for ODA, in that implementation can be assumed as opposed to being conditional on provision of technical assistance to bolster institutional capacity.

We assess whether policy-specific (sectoral) ODA varies with NTPs, and whether aid is affected by enforceability of provisions. We also investigate whether overall (total) ODA flows are affected by agreeing to NTPs. Developing country governments may accord higher priority to other policy areas and projects, and seek additional aid to pursue these as part of the negotiation of a deep PTA that includes NTPs. Successful issue linkage strategies by developing countries might be reflected in increased overall ODA allocations.

Figure 5 plots the average amount of ODA (in USD million) received by developing countries that have not signed PTAs with OECD nations or a PTA with a pertinent NTP; those that have signed PTAs with non-enforceable NTPs; and those accepting enforceable NTPs.[29] Countries that agreed to enforceable environmental commitments received more ODA than signatories of PTAs with only non-enforceable environment provisions. There is little difference between the latter set of countries and those that signed PTAs without NTPs. The opposite holds for aid for civil rights-related activities. Members of PTAs that include NTPs in this area receive substantially more aid than those that do not. In the case of labor rights, there is little difference in the average amount of ODA received by countries that agreed to labor-related NTPs and those that have not. The type of

[28] See e.g., Younas (2008), Pettersson and Johansson (2013), Hoekman and Shingal (2024) and the references to the literature cited there.

[29] Table A-6 reports the t-tests for significance in mean differences.

NTP also does not appear to matter much in terms of the average dollar value of the aid disbursed.[30]

These descriptive facts do not imply any causal relationship between aid and NTPs. We use the SDID estimator (Eq. 1) to assess whether signing a PTA with NTPs affects the amount of development assistance received in case of EU agreements,[31] and whether there are differences between types of NTPs. We consider two scenarios. Scenario 1, as before, assumes that countries are treated when they sign a non-enforceable PTA with a NTP, with the control group spanning countries that sign PTAs without any NTPs. Scenarios 2 compares enforceable NTPs to PTAs without NTPs. For each scenario, we report estimates of the average effect on the treated group (those that sign a PTA that includes a NTP of interest, i.e., protecting the environment, labor, or civil rights, respectively) on aid flows targeting each of the associated policy domains. We do the same for the total aggregate ODA received. The latter is included in the analysis as ODA may be used to incentivize participation in deep PTAs more generally. To improve matching, we include per capita GDP, population, total trade, and share of trade with the US and the EU.[32]

Results are reported in Table 4 for both sectoral (policy area specific) and total ODA, with boldfaced text indicating significant effects. In case of non-enforceable provisions, signatory countries receive more ODA, although the effect is statistically significant only in the case of nonenforceable environmental NTPs. The magnitudes are considerable, our estimates indicate a 370% increase in total ODA received compared to the sample mean. Acceptance of labor- or environment-related NTPs does not lead to more sector-specific ODA, whether NTPs are enforceable or not. However, signing PTAs with enforceable labor provisions is associated with *less* EU ODA. Similarly, civil rights provisions are accompanied with less ODA in non-EU PTAs.[33]

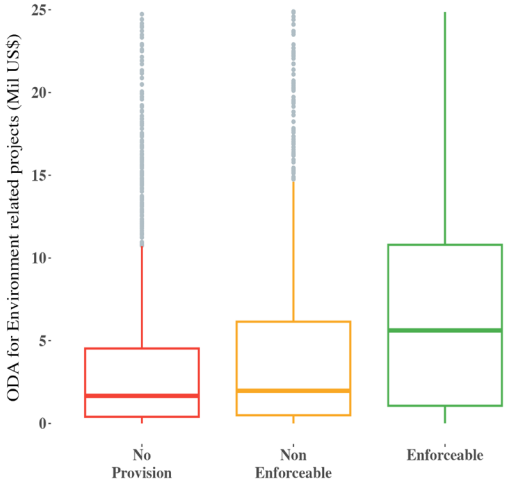
[30] Note that the magnitude of ODA allocated to labor market regulation is substantially smaller in magnitude than aid for other nontrade policy areas, reflected in the difference in the y-axis scale.

[31] Hoekman *et al.* (2023) look at this question the other way, investigating whether bilateral aid is positively and significantly associated with the propensity of developing countries to accept NTPs in PTAs. As in most of the literature, their dependent variable is trade, not non-trade outcome indicators.

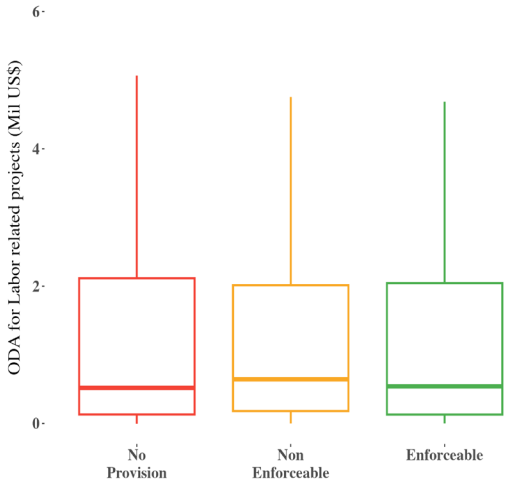
[32] We consider all developing countries that received ODA at least once from at least one donor, and that did not lose the status of potential beneficiaries during the period considered. Country and year fixed effects included in the SDID estimator control for both time- and country-specific invariant factors that could also explain the allocation of ODA.

[33] Application of the comprehensive set of conditions to define the control group described in section 3.1

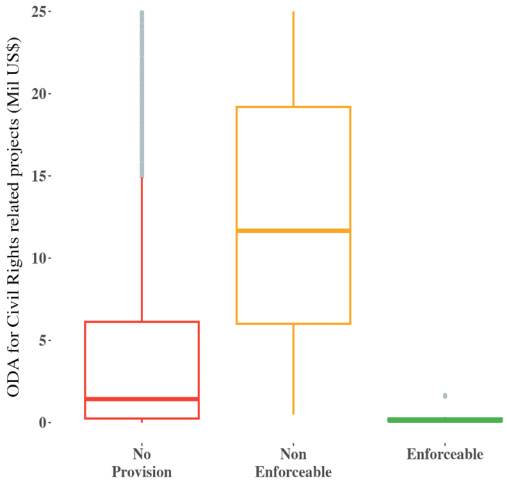
Figure 5: *Non-Trade Provisions and Development Assistance*



Environmental Protection



Labor Market Regulation



Civil rights

Notes: ODA in constant USD million, received by beneficiaries before and after signing an agreement. The category *No Provision* includes ODA received by countries before signing an agreement with the provision of interest and aid to beneficiaries that never sign a PTA with such a provision. The remaining two box plots report the average amount of ODA received after signing an agreement with either a non-enforceable or enforceable NTP, respectively. As noted, the EU and US do not have PTAs with enforceable civil rights-related NTPs explaining the very low value of ODA for enforceable civil rights provisions.

Table 4: *Non-Trade Provisions and Development Assistance*

			Environmental Protection		Labor Market Regulation		Civil Rights Promotion	
			Sectoral ODA	Total ODA	Sectoral ODA	Total ODA	Sectoral ODA	Total ODA
Scenario 1: Non enforceable vs No Provision	EU	ATT	3.744	**218.566**			0.666	108.483
		SE	3.147	**85.681**			3.201	78.746
		Change	299.733	**369.892**			23.437	183.592
	Non EU	ATT	-3.201	80.853	-0.399	49.668	-10.332	127.232
		SE	3.969	100.499	1.377	134.681	6.999	128.618
		Change	-256.252	136.831	-214.733	84.057	-363.861	215.322
Scenario 2: Enforceable vs No Provision	EU	ATT	-3.421	-103.590	-0.170	**-93.013**		
		SE	36.478	563.993	0.162	**33.559**		
		Change	-273.850	-175.310	-91.600	**-157.411**		
	Non EU	ATT	21.448	427.864	1.987	-1.514	**-21.272**	**-255.349**
		SE	13.652	275.078	3.428	144.989	**6.263**	**86.578**
		Change	1717.022	724.097	1069.753	-2.562	**-749.166**	**-432.142**

Notes: Average Treatment effect on the Treated (ATT) of signing a PTA with the provision of interest on ODA received by a signatory country, sectoral and total, from EU and non-EU partners). The three scenarios compare respectively (1) the effect of signing a non-enforceable provision; and (2) the effect of signing an enforceable provision compared to signing a PTA without the provision of interest. For each scenario, we consider the effect of signing an agreement with a non-EU partner as opposed to signing an agreement with the EU. A positive (negative) estimate indicates an increase (reduction) in ODA received by the developing country signatory. Boldface font indicates a statistically significant estimate. Sources for the dependent variables are reported in Annex Table A-5. Similarly to the results presented in table 2, we could not estimate an ATT for labor rights provision in Scenario 1, due to the lack of countries signing a non-binding provision without upgrading it later to a binding commitment either with the EU or the US. The lack of an ATT for Civil Rights promotion in scenario 2 is driven by the absence of binding provisions on the matter.

Overall, the results reveal a negative association between acceptance of enforceable NTPs and ODA. The only instance where we find the expected positive relationship between acceptance of NTPs and ODA is for nonenforceable environmental provisions in the case of EU PTAs. This is consistent with the argument that ODA is a complementary policy instrument. These findings suggest several questions for further research. One is why we do not observe any evidence that NTPs of either type lead to more sector- or policy area specific technical and financial assistance. Of particular salience in this regard are the results for non-enforceable NTPs, where there is a stronger presumption that developing countries may need support to bolster implementation capacity, i.e., one would expect ODA to be used as a complementary instrument. Another question concerns the drivers of the negative relationship between enforceable NTPs and ODA allocations and whether this reflects a view in high-income PTA partners that enforceability implies

results in the loss of the full pool of donors in scenario 1 for EU labor provisions, precluding estimation of the effect of accepting non-enforceable provisions in EU PTAs as compared to not doing so. This reflects the fact that over time many developing countries that signed PTAs with NTPs in this area came to accept enforceable provisions. In scenario 2 we do not report estimates for civil rights provisions, as these are not enforceable in EU PTAs (see Table 1)

that ODA is not needed, permitting scarce resources to be allocated for other purposes.

6 Conclusion

Non-trade policy objectives are increasingly incorporated in developed countries' trade policies. The inclusion of NTPs in PTAs reflects a desire to promote improvement in labour and environmental standards and civil rights in partner countries. Commercial considerations may also play a role, including demand of domestic producers for a "level playing field" when confronting competition from imports. From the perspective of firms in partner countries, implementation of NTPs by their governments may increase production costs and reduce their competitiveness. Whatever the underlying political economy drivers of NTPs (and deep PTAs more broadly), it is important to understand whether NTPs are associated with improvements in non-trade outcomes as reflected in area- and issue-specific country performance indicators.

Our empirical analysis indicates that NTPs mostly do not have an impact on outcome measures that are associated with the policy areas covered. At the same time we find heterogeneous results, in that NTPs have effects on some environmental performance indicators, whereas significant effects are not observed for labor or civil rights provisions. However, contrary to the presumed objective of including environmental NTPs, for the set of non-EU PTAs we find some evidence for a deterioration in CO_2 emissions, ozone pollution, forests, protected areas, and nitrogen management. The implication is that NTPs do not offset the effects of increases in trade and related economic activity on the environment in developing country signatories. For EU agreements, results are somewhat different, in that we do not find evidence of negative effects, but there is also no evidence of positive impacts. The best that can be said is that our results suggest deep EU PTAs do a better job in offsetting potential worsening of environmental outcome indicators as a result of increased trade.

Insofar as significant relationships are observed in the data, these pertain mostly to nonenforceable provisions addressing protection of the environment. Enforceability does

not appear to matter except in the sense that they are not associated with worsening of performance in developing countries. This provides weak support for arguments that to have an effect, NTPs should be enforceable.

Our analysis indicates that NTPs are not necessarily accompanied by more development assistance targeting the policy areas these provisions address. Evidence of a complementary relationship is limited to nonenforceable environmental provisions in EU PTAs. Conversely, we find that enforceable NTPs dealing with labor standards may act as a substitute for ODA in the case of EU PTAs. A similar finding pertains to assistance in the area of civil rights in the context of non-EU trade agreements. The heterogeneous nature of the estimated relationships between NTPs and ODA suggests differences in high-income country priorities regarding non-trade issues in developing country partner countries, with the EU focused more on protection of the environment relative to labor rights and standards.

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Annex

A Additional data description

Table A-1: *Countries considered*

Countries	
Partners in PTA	**Countries Excluded**
AGO,BDI,BEN,BFA,BLR,BRB,CAF,CHL,CHN,CIV, CMR,COD,COG,COL,COM,CPV,CRI,DJI,DOM,DZA, EGY,ETH,GAB,GHA,GIN,GMB,GNB,GNQ,GTM,GUY, HND,HTI,IDN,IND,JAM,JOR,KAZ,KEN,KGZ,KWT, LAO,LBN,LBY,LSO,MDG,MEX,MLI,MMR,MUS,MWI, MYS,NAM,NER,NGA,NIC,OMN,PAN,PER,PHL,QAT, RUS,RWA,SAU,SGP,SEN,SLE,SLV,SUR,SWZ,SYC, TCD,TGO,THA,TJK,TTO,VNM,TGO,TUN,TZA,UGA, ZAF,ZMB,ZWE	Other EU members (including accession countries) USA, JPN,NZL,NOR,LIE,KOR,ISL,CHE,CAN, AUS

Notes: The countries considered as potentially treated, reported in the first columns, signed an agreement including at least one of the non-trade provisions of interest with either the EU, the US, or either other OECD or high income countries as a partner. No country belonging to the latter group (listed in the column *Countries Excluded*) is considered in the "treated" or in the donor pool. Potentially treated countries are included as potential control units in the donor pool, which also include countries that never signed a PTA (overall, with the EU, or with the US).

Table A-2: *Matching covariates used in Synthetic Diff-in-Diff estimation*

Variable	**Mean**	**Std. Deviation**	**Min**	**Max**	**Obs**
Total Trade (US$ mil.)	48618.93	24582.23	17770.68	88925.82	3423
Export Share to EU	.236664	.1755388	.005185	.8712137	3423
Export Share to USA	.0752338	.0949312	0	.6716393	3423
Environmental NTP L.E.	.4782355	.8371364	0	2	3423
Labor rights NTP L.E.	.452527	.8325697	0	2	3423
Civil rights NTP L.E.	.0312591	.246338	0	2	3423
GDP current	330184.9	1262191	100.807	1.82e+07	3423
Governance	.90622	1.404887	-2.464286	4.270286	3423
Population	.0000446	.0001507	7.06e-08	.001397	3423
Per Capita GDP	9313401	1.50e+07	22727.68	1.03e+08	3423
ODA: Total (US$ mil.)	563.5374	1238.949	0	21747.91	3423
ODA: Civil Rights (US$ mil.)	25.0177	87.85393	0	2049.268	3423
ODA: Environment Protection (US$ mil.)	10.7547	46.27095	0	853.1539	3423
ODA: Labor Market Regulation (US$ mil.)	2.697321	17.9261	-5.050552	507.3214	3423
ODA to GDP: Total	.0332779	.0666158	0	.9098916	3423
ODA to GDP: Environment Protection	.0004304	.0010359	0	.022722	3423
ODA to GDP: Labor Market Regulation	.0000876	.0003379	-.0000896	.0077782	3423
ODA to GDP: Civil Rights	.0013156	.0037107	0	.0649847	3423

Table A-3: *Countries with active agreement with both EU and USA*

Country	**Environmental Protection**				**Labor Market Regulation**				**Civil Rights**			
	EU		**USA**		**EU**		**USA**		**EU**		**USA**	
	Non Enforce	**Enforce**	**Non Enforce**	**Enforce**	**Non Enforce**	**Enforce**	**Non Enforce**	**Enforce**	**Non Enforce**	**Enforce**	**Non Enforce**	**Enforce**
Chile	1	0	0	1	0	0	0	1	1	0	0	0
Colombia	1	0	0	1	1	0	0	1	1	0	0	0
Costa Rica	0	1	0	1	0	1	0	1	1	0	0	0
Guatemala	0	1	0	1	0	1	0	1	1	0	0	0
Honduras	0	1	0	1	0	1	0	1	1	0	0	0
Israel	1	0	0	0	0	0	0	0	1	0	0	0
Jordan	1	0	0	1	0	0	0	1	1	0	0	0
Republic of Korea	0	1	0	1	0	1	0	1	0	0	0	0
Morocco	1	0	0	1	0	0	0	1	1	0	0	0
Mexico	1	0	0	1	0	0	0	1	1	0	0	0
Nicaragua	0	1	0	1	0	1	0	1	1	0	0	0
Peru	1	0	0	1	1	0	0	1	1	0	0	0
Salvador	0	1	0	1	0	1	0	1	1	0	0	0

Notes: The 13 countries reported here signed an agreement with both the EU, and the US.

Table A-4: *Summary statistics: Non-trade outcome indicators*

Variable	Mean	SD	Min	Max	N	Polarity
Environmental Protection						
CO_2	0.292338	0.19624	-1.35997	2.638186	7774	-
CO_2 per Million US$ X	4.02e-07	7.33e-07	-5.85e-06	0.000013	7774	-
PM2.5	40.65553	13.92697	0	100	7774	+
SO2	505.4478	2132.555	-2040.19	29989.1	7774	+
NOx	46.93604	21.01648	0	100	7774	+
Ozone Exposure	50.04097	15.96843	0	100	7774	+
Forests	32.53986	18.44064	0	98.98526	7774	+
Wetland loss	57.25232	19.01902	0	100	7774	+
Nitrogen Management	33.35488	14.12421	0	99.47662	7774	+
Protected Areas	26.80994	14.3315	0	100	7774	+
Species Habitat	92.82481	8.956446	0	100	7774	+
Species Protection	65.63925	16.71921	0	100	7774	+
Labor-related indicators						
Labor Rights	22.96748	6.242013	0	36.81034	7774	+
Worker Protection	0.95846	0.586932	0	2	7774	+
Standards and Regulation (Aggr)	.4181061	.0914225	.0875	0.80075	7774	+
a. Form of Employment	.3988044	.1499513	.0625	0.975	7774	+
b. Working time	.5133628	.1245376	0	0.8042857	7774	+
c. Dismissal	.4211621	.14532	0	0.9044445	7774	+
d. Representation	.3874373	.1469013	0	0.8571429	7774	+
e. Industrial Action	.3817309	.1405492	0	0.9444444	7774	+
Civil Rights indicators						
Polyarchy	0.462098	0.268917	0.013789	0.94937	7774	+
Freedom of Expression	0.570917	0.29947	0.014093	0.988696	7774	+
Women Political Participation	0.627106	0.228782	0.047552	0.999952	7774	+
Political Liberties	0.588804	0.302271	0.01185	0.993807	7774	+
Freedom of Association	1.146401	0.665681	0	2.040891	7774	+

Notes: Polarity indicates what constitutes an improvement. For all indicators an increase is an improvement, except for CO2 measures.

Table A-5: *Data sources for non-trade outcome indicators*

Environmental Protection		
Outcome	**Source**	**Domain**
CO_2	*World Development Indicators*	Climate Change Mitigation
CO_2 per million X	*World Development Indicators and CEPII*	Climate Change Mitigation
PM2.5	*Environmental Protection Index*	Environmental Health
SO2	*World Development Indicators*	Environmental Health
Nox	*Environmental Protection Index*	Environmental Health
Ozone Exposure	*Environmental Protection Index*	Environmental Health
Forests	*World Development Indicators*	Ecosystem vitality
Wetland Loss	*Environmental Protection Index*	Ecosystem vitality
Nitrogen Management	*Environmental Protection Index*	Ecosystem vitality
Protected Areas	*Environmental Protection Index*	Ecosystem vitality
Species Habitat	*Environmental Protection Index*	Ecosystem vitality
Species Protection	*Environmental Protection Index*	Ecosystem vitality
Labor Regulation		
Outcome	**Source**	**Domain**
Labor Rights	*QOG Institute*	Labor Rights
Workers Protection	*QOG Institute*	Workers' Rights
Standards and Regulation (Aggr)	*Centre for Business Research*	Rgulatory framework
a. Form of Employment	*Centre for Business Research*	Rgulatory framework
b. Working time	*Centre for Business Research*	Rgulatory framework
c. Dismissal	*Centre for Business Research*	Rgulatory framework
d. Representation	*Centre for Business Research*	Rgulatory framework
e. Industrial Action	*Centre for Business Research*	Rgulatory framework
Civil Rights		
Outcome	**Source**	**Domain**
Polyarchy	*International Political Economy Data Resource V3*	-
Freedom of Expression	*International Political Economy Data Resource V3*	-
Women Political Participation	*International Political Economy Data Resource V3*	-
Political Liberties	*International Political Economy Data Resource V3*	-
Freedom of Association	*QOG Institute*	-

Table A-6: *Differences in Mean - T-test*

	No Provision vs Non Enforceable		**No Provision vs Enforceable**		**Non Enforceable vs Enforceable**	
	tcrit	p-val	tcrit	p-val	tcrit	P-val
Environmental Protection	-4.34	0.00	-6.43	0.00	-4.15	0.00
Labor Market Regulation	-1.09	0.28	1.62	0.11	2.06	0.04
Civil Rights Promotion	-13.97	0.00	21.06	0.00	21.26	0.00

Notes: T-test on ODA averages by type of provisions.

Table A-7: *Treatment and Donor Pool by Scenario*

	Potentially Treated	Donor Pool
Main Scenario 1		
Scenario 1 - Non enforceable vs no provision		
Environmental Protection	CHN, IDN, LAO, MMR, MYS, PHL, VNM	BRB, CHN, IDN, IND, JOR, KWT, LAO, MEX, MMR, MYS, OMN, PER, PHL, QAT, SAU, SGP, VNM
Labor Market Regulation	BLR, BRB, CHL, CHN, CRI, DOM, GTM, GUY, HND, JAM, JOR, KAZ, KGZ, KWT, MEX, MYS, NIC, OMN, PAN, PER, QAT, RUS, SAU, SGP, SLV, SUR, TJK, TTO	ARG, BEN, BFA, BGD, BOL, BRA, BTN, BWA, CAF, CIV, CMR, COG, CPV, DZA, ECU, FJI, GAB, GHA, GIN, GMB, GNB, GNQ, HTI, IDN, IND, IRQ, LAO, LBN, LKA, MDV, MLI, MMR, NER, NGA, NPL, PAK, PNG, PRY, SDN, SEN, SLB, SLE, SYR, TCD, TGO, TKM, TUN, UZB, VNM, VUT, YEM ZAF
Civil Rights Promotion	KWT, OMN, QAT, SAU	AGO, ARG, BGD, BLR, BOL, BRA, BRB, BTN, BWA, CAF, CMR, COD, COG, COM, CPV, DJI, DOM, ECU, ETH, FJI, GAB, GHA, GIN, GMB, GNQ, GUY, HTI, IDN, IND, IRQ, JAM, KAZ, KGZ, LAO, LBY, LKA, LSO, MDG, MDV, MMR, MUS, MWI, MYS, NAM, NGA, NPL, PAK, PAN, PHL, PNG, PRY, RUS, SDN, SGP, SLB, SLE, SUR, SWZ, SYC, SYR, TCD, THA, TJK, TKM, TTO, URY, UZB, VNM, VUT, YEM, ZMB, ZWE
Scenario 2 - Enforceable vs no provision		
Environmental Protection	BRB, CHL, CRI, DOM, GTM, GUY, HND, JAM, MEX, NIC, PAN, SLV, SUR, TTO	BDI, BEN, BFA, CAF, CIV, CMR, COD, COG, COM, CPV, DJI, DZA, EGY, ETH, GAB, GHA, GIN, GMB, GNB, GNQ, HTI, KEN, MDG, MLI, MUS, MWI, NER, NGA, RWA, SEN, SLE, SWZ, TCD, TGO, TUN, TZA, UGA, ZAF, ZMB, ZWE
Labor Market Regulation	BRB, MEX	BDI, COD, COM, DJI, EGY, ETH, KEN, MDG, MUS, MWI, RWA, SWZ, TZA, UGA, ZMB, ZWE
Civil Rights Promotion		

Notes: The countries listed in the treatment group refer to those countries that qualify as treated (see Table **??**) in either one of the three domains of interest (Environmental Protection, Labor Market Regulation, or Civil and Human Rights). The actual set of treated countries in each scenario and domain then is conditional on data availability. The number of countries in the partner-specific exercises is further conditioned on them signing exclusively with the partner considered from time to time. (See Section 3.1 for the details on the sample selection process.)

B The Synthetic Difference in Difference estimator

The standard Difference in Differences estimator takes the form

$$Y_{it} = \beta_0 + \beta_1 Post_t + \beta_2 Treated_i + \beta_3 Treated_i \times Post_t + e_{it} \tag{B-1}$$

where $Treated_i \times Post_t$ captures the effect on the units that are exposed to treatment. Equation B-1 can be reformulated as:

$$\hat{\tau}^{did} = \underset{\mu,\alpha,\beta,\tau}{argmin} \left\{ \sum_{i=1}^{N} \sum_{t=1}^{T} \left(Y_{it} - (\mu + \alpha_i + \beta_t + \tau D_{it} \right)^2 \right\} \tag{B-2}$$

where differences in the unit-specific intercepts are absorbed by the unit fixed effect α_i, and the general trends between treated and untreated units are absorbed by β_t.

This formulation is similar to the Synthetic Control (SC) estimator. The SC allows to explore the effect of an event (a policy change or an exogenous shock of some type) when the number of affected units is limited to one or a small number of affected units. In such cases sample means cannot be used to average the effect of an event, and a credible counterfactual cannot be found with standard methods. SC does not rely on sample means to obtain estimates of the Average Treatment effect on the Treated (ATT), but weights all potential control units based on their pre-exposure trend in the outcome of interest, and allows other information to be used to improve the matching between the treated unit and its potential controls to construct an artificial (i.e. synthetic) counterfactual.

The weight is obtained through the following optimization problem:

$$\begin{aligned} \hat{w}^{sc} = \underset{w}{\text{argmin}} \; & ||\bar{\boldsymbol{y}}_{pre,tr} - \boldsymbol{Y}_{pre,co}\boldsymbol{w}_{co}||_2^2 \\ \text{s.t} \quad & \sum w_i = 1 \text{ and } \; w_i > 0 \; \forall \; i \end{aligned} \tag{B-3}$$

Once the optimal weights have been obtained, they are used to build the synthetic control ($\boldsymbol{y}_{sc} = \boldsymbol{Y}_{co}\hat{\boldsymbol{w}}^{sc}$), which reproduces the performance of the treated unit in absence of the treatment. The ATT in this case is simply the difference between the post-exposure outcome for the unit of interest and its synthetic counterfactual: $\hat{\tau} = \bar{y}_{post,tr} - \bar{y}_{post,sc}$.

The SC can be recast in a way similar to the TWFE estimator:

$$\hat{\tau}^{sc} = \underset{\beta,\tau}{argmin} \left\{ \sum_{i=1}^{N} \sum_{t=1}^{T} \left(Y_{it} - \beta_t - \tau D_{it} \right)^2 \hat{w}_i^{sc} \right\} \tag{B-4}$$

with

$$\begin{aligned} \hat{\lambda}^{sdid} = \underset{\lambda}{\text{argmin}} \; & ||\bar{\boldsymbol{y}}_{post,co} - (\boldsymbol{\lambda}_{pre}\boldsymbol{Y}_{pre,co} + \lambda_0)||_2^2 \\ \text{s.t} \quad & \sum \lambda_t = 1 \text{ and } \; \lambda_t > 0 \; \forall \; t \end{aligned} \tag{B-5}$$

The two estimators are very similar to the SDID estimator reported in Equation 1 in the main text, with the exception of the term $\hat{\lambda}^{sdid}$ that minimizes the difference between the pre- and post-treatment periods for the controls in a way that resembles the unit weight $\hat{w}^{sc}$.

Two features of the SDID are relevant for our application. The first concerns the unit weight term $\hat{w}^{sc}$: in the SC estimator, the weights are built such that $\bar{y}_{pre,tr} - \bar{y}_{pre,sc} \simeq 0$.

This means that a good synthetic control and the actual treated unit must largely overlap in the pre-treatment period. In the SDID estimator, this requirement is relaxed because of the inclusion of a constant term so that the SDID no longer requires overlapping trends, but only (approximately) parallel trends.

The second feature of the SDID is that it permits obtaining an ATT even with multiple treated units when the treatment itself is staggered. Most the consistency tests performed under different weighting schemes by Arkhangelsky *et al.* (2021) are based on a single treated unit. We exploit the foundation for the staggered treatment scenario described in their Appendix A, where they allow for multiple treated units and multiple treatment periods.

Like the SC and TWFE estimators, SDID estimates can be improved by conditioning the treatment and control units on a set of covariates. By construction, the SDID estimator includes country and time fixed effects that control for unit-specific time-invariant characteristics as well as for time trends common to the two groups (see Equation 1). Pailañir and Clarke (2022) implement both procedures in STATA, allowing for the inclusion of additional covariates to improve matching in the pre-treatment period.

Unit specific (in our case, country) fixed effects would capture invariant characteristics such as geographic location, but would leave out all unit-specific but time-varying characteristics that could affect the performance of control and treated units with respect to an outcome of interest.

Authors

Joseph Francois

World Trade Institute and CEPR

Joseph.Francois@wti.org

Bernard Hoekman

European University Institute

bernard.hoekman@eui.eu

Miriam Manchin

University College London and Politecnico di Milano

miriam.manchin@polimi.it

Filippo Santi

University of Bologna

filippo.santi6@unibo.it