

## FIW-Policy Brief No. 55, October 2022

# Greening Trade? Environmental Provisions in Trade Agreements

**Bettina Meinhart**

(WIFO – The Austrian Institute of Economic Research)

**International climate targets have far-reaching implications for all areas of the economy and life, including trade policy. To reach the target of the Paris Agreement, it may be necessary to link trade and environmental policy, whereby one way of linking the two policy areas is to include environmental provisions (EPs) in trade agreements. Several motives for including environmental concerns in trade agreements exist, ranging from promoting environmental cooperation and ensuring a level playing field to pursuing protectionist interests. In principle, the inclusion of environmental aspects is not a new development. Since the 1990s, EPs have been frequently integrated into trade agreements, for example on issues such as hazardous waste, deforestation or biodiversity protection. In recent years, as climate initiatives have gained prominence at the EU level, the number of EPs in trade agreements has steadily increased. Thereby, the inclusion of these concerns is very heterogeneous in terms of the subject matter and enforceability. A closer look at the enforceability indicator is crucial, because if EPs are not legally enforceable, addressing environmental concerns may not have an impact on trade and the environment. The European Commission is aware of this issue and therefore published the review of its policy chapter on trade and sustainable development in June 2022. This identifies how the contribution of EU trade agreements to promoting environmental protection can be improved, mentioning, among other actions, the strengthening of enforcement through trade sanctions as a last resort. Whether the current changes are effective in terms of environmental and trade impacts will be seen in further research.**

## 1. Linking trade and environmental policy

By signing the Paris Agreement in December 2015, 195 countries committed to the goal of limiting global warming to 1.5 degrees Celsius (UNFCCC, 2015). Achieving this goal requires far-reaching adjustments to our entire economic system, ranging from the transformation of energy supply and the improvement of resource-efficient production methods to changes in the areas of mobility and buildings. These changes have implications for how and which goods are produced, traded and transported internationally.

In general international trade can have negative or positive impacts on the environment. A broad consensus exists on the transport inducing effect of international trade. Negative external effects of transport so far are not (sufficiently) internalised in

prices, imposing a negative impact on the environment. Numerous negative external effects are associated with the transport of goods, such as noise emissions or air pollutants. Since these are not included in transport prices, too many goods are transported over too long distances (Christen et al., 2021b). In addition, high environmental standards can lead to carbon leakage, i.e. the relocation of emissions-intensive production from more highly regulated to less regulated countries.

Against this trade-off between trade and the environment other linkages can lead to an improvement of the environment. International trade yields gains due to resource savings resulting from improved resource allocation, a greater variety of environmentally friendly products, and the diffusion of higher environmental standards in technologically less advanced countries.

To meet the Paris target, the European Union aims to achieve net carbon neutrality by 2050, which means largely eliminating fossil fuels by mid-century. The European Green Deal and the European Climate Change Act set important milestones for achieving these ambitious goals. One of these milestones, set out in the "Fit for 55" package, is the target to reduce greenhouse gas (GHG) emissions by 55% by 2030 compared to 1990 (European Commission, 2021).

Austria is aware of its responsibility to contribute to achieving the Paris climate target and to comply with the EU climate and energy policy. It has therefore set an ambitious goal in its 2020 government program to be net climate neutral by 2040 (Bundeskanzleramt, 2020). However, there is not yet clear supporting regulation and a climate law that sets a binding reduction path by 2040 and intermediate targets by 2030 are missing.

Considering the link between the environment and international trade, it is of interest to examine one policy instrument in more detail, namely the extent to which Preferential Trade Agreements (PTAs) integrate environmental concerns.

Recent PTAs, such as the EU-Japan Economic Partnership Agreement, address broad environmental aspects and even explicitly reference the Paris Agreement. In principle, the inclusion of environmental aspects is not a new development. Environmental provisions have been integrated into trade agreements since the 1990s, e.g. issues such as hazardous waste, deforestation or the protection of biodiversity. In recent years, as climate initiatives have gained prominence at the EU level, the number of environmental provisions in trade agreements has steadily increased. The European Union is committed to the sustainability of international trade. Accordingly, in 2018, the EU Commission published a 15-point action plan to make the implementation of sustainability chapters in trade agreements more effective and improve their enforcement. However, the debate on the potentially detrimental effects of international trade and whether current provisions in current trade policy to prevent these is still ongoing.

Since Austria aims to achieve net carbon neutrality by 2040, it is important to know how PTAs affect the greenhouse gas content of internationally traded goods and services. This requires understanding how environmental issues can be addressed in PTAs as a first step. The goal of this policy brief is to demonstrate how trade agreements are being used to achieve environmental goals and whether their current design is environmentally effective. This is done by (I) discussing the motivations and implications for including environmental aspects, (II) describing the historical development of EPs in trade agreements and (III) analyzing how EPs are measured. In the end ideas for further development of EPs in trade agreements are discussed.

## 2. Motives for including environmental aspects in Preferential Trade Agreements

There are several motives that have led to the inclusion of an increasing number of environmental concerns in PTAs:

(I) **Promoting environmental cooperation** and higher environmental standards in all participating countries (Berger et al., 2020).

(II) **Ensuring a level playing field** among members of a trade agreement with different environmental standards to prevent a race to the bottom as a side effect of using lower environmental standards as comparative advantage in trade (George, 2014).

(III) **Better enforceability** of environmental concerns and resulting environmental effectiveness compared to multilateral environmental agreements (Jinnah and Lindsay, 2016; Morin and Jinnah, 2018).

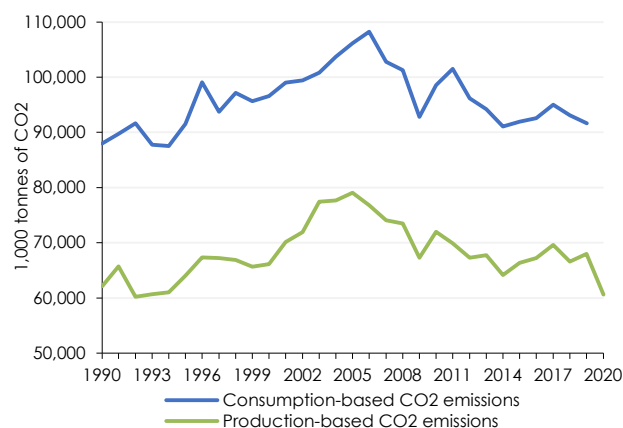
(IV) **Serving protectionist interests** that limit market access from developing countries because of the concern that goods under lower environmental standards would displace goods in developed countries under higher standards (Ederington and Minier, 2003; Lechner, 2016).

(V) **Gaining political support** from parties that are critical toward trade liberalization and would otherwise block the implementation of an agreement (Gallagher, 2004; Hufbauer et al., 2000).

(VI) **Mainstreaming environmental and climate policy** in all policy areas and reducing trade-offs between trade and environmental goals.

The underlying climate policy objective for including EPs in PTAs is to contribute to the Paris climate target by reducing GHGs overall. Reduction targets typically refer to the production-based GHG inventory, also known as the territorial emissions inventory, which considers only the emissions physically emitted in a country.

**Figure 1: Consumption vs. production-based CO<sub>2</sub> emissions in Austria**



Source: Global Carbon Project, Our World in Data

In contrast, the consumption-based GHG inventory reflects actual consumption decisions, as it is adjusted for trade by accounting for emissions contained in internationally traded intermediates. Thus, consumption-related emissions are emissions generated during production minus emissions embodied in exports plus emissions embodied in imports.

If a country's consumption-based emissions are higher than its production-based emissions, the country is a net importer of emissions. This is the case for most countries in Western Europe, while most Eastern European and Asian countries are net exporters.

Austria's net import of CO<sub>2</sub> emissions is about 24,000 tonnes in 2019. Hence, the consumption-based emissions are 35% higher than production-based emissions. Austria thus imports more CO<sub>2</sub> embodied in goods than it exports as is seen in Figure 1.

This is relevant for two reasons. First, because the national emission targets are based on the UNFCCC methodology of emission inventories, which is a production-based view. The production-based approach focuses on domestic emission reduction options. However, this does not reflect emissions related to imported emissions due to lifestyle choices and consumption behavior.

Second, it is relevant because it shows whether countries could reduce their emissions due to offshoring (carbon leakage). The comparisons of the two views provides evidence whether the development in emissions in a specific country was mainly achieved by domestic action or by substituting domestic emissions through imports of emission-intensive products or offshoring emissions-intensive production to other countries. If production-related emissions decreased while consumption-related emissions increases, this suggests a large share of imports of emission-intensive products.

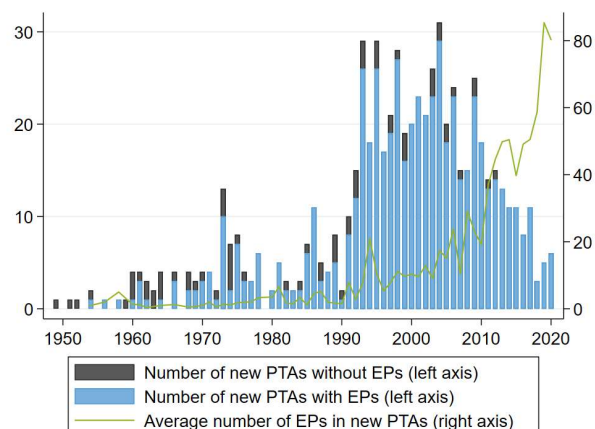
### 3. Historical development of environmental concerns in Preferential Trade Agreements

Early mechanisms to address environmental protection in international trade agreements included general exceptions to trade commitments to protect natural resources and human, animal or plant life such as Article XX of the General Agreement on Tariffs and Trade (GATT) which has been signed in 1947 or addressed environmental issues through the dispute settlement system of the World Trade Organization (WTO). Over time, some effort for dealing with environmental issues in trade policy has evolved to include more explicit environmental commitments in modern deep PTAs.

A detailed dataset, called "TRade and ENvironment Database – TREND" distinguishes almost 300 different

types of EPs in more than 660 PTAs over the period 1947 to 2020. The collection of trade agreements is borrowed from the Design of Trade Agreement (DESTA) Project (Dür et al., 2014). TREND covers very granular items on various topics of environmental protection. Hence, it is possible to aggregate them into different categories as presented in a later chapter.

**Figure 2: New Trade Agreements with and without EPs**



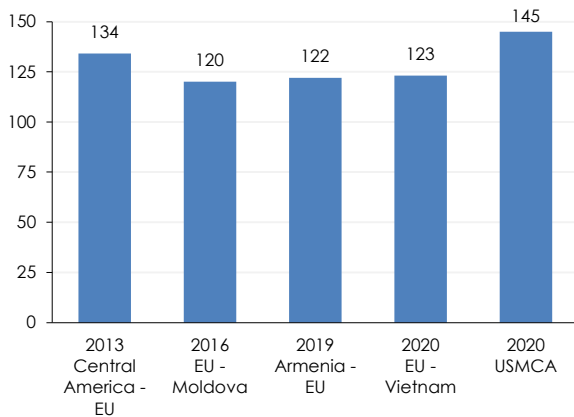
Source: TREND, DESTA

Figure 2 shows how many new PTAs entered into force each year between 1947 and 2020 and how many of them contain at least one environmental provision. Most agreements, namely 89%, include at least one environmental provision.

However, interesting is how the average number of EPs in new PTAs has changed over time. This number started to rise after 1990. As a side note, the first Intergovernmental Panel on Climate Change (IPCC) report was published in 1990, which may be related to the increase of EPs. On average, 16 EPs are included in a PTA that has entered into force, although there is a wide range over time. While in 2000 the average number of EPs in new PTAs was 10, by 2020 the average was 80. This, however, does not allow any conclusions on the environmental effectiveness of the included provisions.

The number of EPs included in a PTA serves as a measure of the breadth of the agreement. The underlying idea is that countries that sign an agreement with a high number of EPs show that they are concerned about the stringency of environmental regulations. Thus, if an agreement contains a larger number of environmental provisions, it could be assumed that these countries are more concerned about the environment.

Figure 3: PTAs with the largest number of EPs

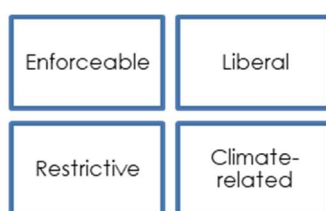


Source: TREND, DESTA.

The PTAs with the largest number of EPs are shown in Figure 3. They have all entered into force in the last 10 years and are among the deep and comprehensive PTAs. The USMCA agreement between the United States, Mexico, and Canada is the follow-up agreement to NAFTA and, with 145 EPs, is the PTA with the largest number of EPs covered. It is followed by the 2013 PTA between Central America and the EU with 134 EPs.

## 4. Indicators of environmental provisions

The integration of environmental concerns in PTAs is very heterogeneous in terms of enforceability, but also in terms of topic and depth of regulation. The individual items in TREND with same objectives are combined here into four indicators<sup>1)</sup>:



The idea of looking in more detail at a measure that relates to legal obligations, comes from Martínez-Zarzoso and Oueslati (2018), who find that EPs in PTAs have a different impact on environmental outcomes when such obligations exist, and from Kohl et al. (2016) who highlight the importance of taking into account the heterogeneity in the depth of PTAs.

<sup>1)</sup> The classification is based on Morin et al. (2019), Brandi et al. (2020) and Morin and Jinnah (2018) with own adjustments to which EPs are included.

Liberal and restrictive EPs aim to account for CO<sub>2</sub> emissions included in trade. Brandi et al. (2020) analyze the impact of EPs in trade agreements on exports with a focus on developing countries and conclude that liberal EPs increase exports of green goods from developing countries, while restrictive EPs decrease dirty exports from developing countries.

Climate-related EPs are considered because they directly target GHG emission reductions. Sorgho and Tharakan (2020) assess the impact of climate-related provisions on climate change mitigation by reducing GHG emissions, including CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. They conclude that climate-related provisions reduce the level of per capita GHG emissions. However, such provisions do not account for transport-related greenhouse gas emissions of trade.

### Enforceable provisions

Following Morin et al. (2019), enforcement refers to the general commitment of countries to comply with environmental standards using words such as "should" or "must" in the legal text, as in the 2004 USA-Chile agreement, which states that "a Party shall not fail to effectively enforce its environmental laws through sustained or recurring action or inaction [...]."

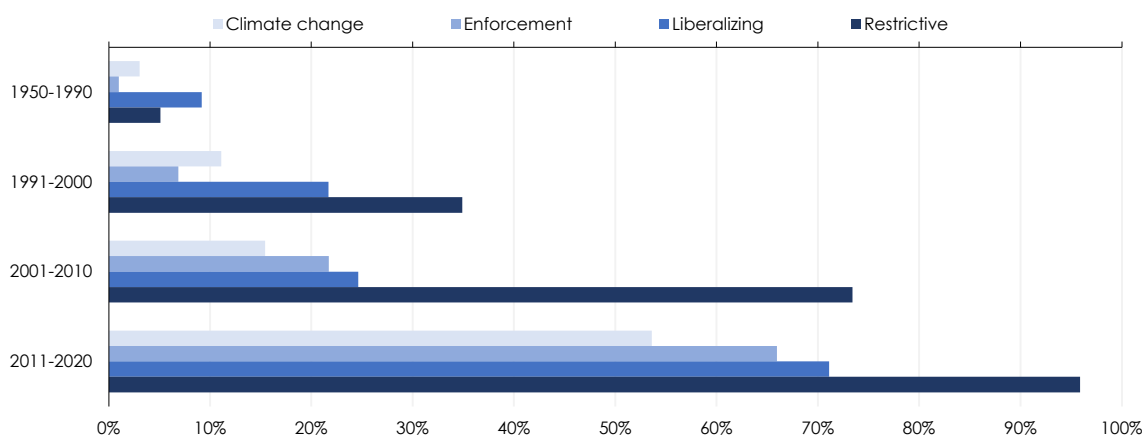
In addition, enforcement refers to the imposition of sanctions in case environmental standards are violated at the domestic level. Hence, provisions are included that relate to the establishment of adequate and effective remedies or sanctions.

Provisions governing internationally established dispute settlement mechanisms are also part of the enforcement category. Such norms refer, for example, to the need to involve environmental experts as panelists or mediators for trade disputes and regulate either disputes between states or between investors and states.

### Liberalizing provisions

Liberalizing provisions aim to promote trade in environmental goods and services with some provisions specifically removing barriers to trade in environmental goods. Such EPs are included, for example, in the PTA between New Zealand and Taiwan, which entered into force in 2013. Opening up trade in environmental goods has the potential to spread more advanced technologies and environmentally friendly innovations which are important for mitigating climate change, and to promote the competitiveness of green industries. Other liberalizing provisions aim to ensure that the introduction of international standards is consistent with the obligations of the trade agreement, as in Chile-Mexico 1999: "Standards-related measures shall not restrict trade more than is necessary to fulfil a legitimate objective, taking into account the risks that not fulfilling it would create."

Figure 4: Indicators of EPs in trade agreements



Source: TREND, DESTA.

### Restrictive provisions

In general, trade-restrictive EPs aim to reduce trade in goods with a high carbon content either directly or indirectly. An example of a PTA that contains provisions aimed directly at reducing trade in polluting goods is the 2001 agreement between the members of the Caribbean Community, who agreed: "to protect the region from the harmful effects of hazardous materials transported, generated, disposed of or shipped through or within the Community".

Countries with lower environmental standards often have a comparative advantage in dirty sectors. This is often the case in developing countries because they have less stringent regulations. Trade-restrictive EPs can be used to affect the competitiveness of these countries. This is the indirect way to hinder trade in brown goods.

### Climate-related provisions

Climate-related provisions cover different aspects. The selection is based on Morin and Jinnah (2018), who manually coded these provisions to analyze the "regulatory contribution that PTAs make to global climate governance".

(1) **Renewable energy or energy efficiency** addressing provisions are the most common climate-related provisions. Such provisions refer for example to research, cooperation and exchange of information on renewable energy and energy efficiency. The first agreement was the Lomé II Convention which came into force in 1981 and included the text: "The Community will assist *inter alia*, in the [...] implementation of alternative energy strategies in programmes and projects that will [...] cover wind, solar, geothermal and hydro-energy sources".

(2) **Cooperation on climate governance** aiming provisions intend to foster for instance that countries cooperate in creating coordinated measures on climate issues.

(3) **Reduction of GHG emissions** is the direct goal in some climate-related provisions. Agreements including these provisions range from very vague formulations to more specific ones as for example, the 2013 agreement between Australia and Malaysia that describes necessities "related to the transfer of carbon capture capacities between the two countries."

(4) **Adaptation to climate change** is just part of some agreements with the first PTA between China and Costa Rica in 2011 where "The Parties shall cooperate to [...] promote effective risk management in the agribusiness chains aiming to incorporate measures for adaptation [...] of climate change [...]."

(5) **Ratification or implementation of climate agreements** such as the UNFCCC and the Kyoto Protocol is part of some PTAs aiming at setting international standards.

## 4.1 Development of environmental provisions

Figure 4 shows the development of the four indicators. Over time, more and more PTAs contained at least one EP related to these indicators. While between 1950 and 1990 the average percentage of PTAs with EPs that contained standards related to the four indicators was less than 10%, between 2011 and 2020 the average was over 50% for all indicators.

There is also some heterogeneity across the four indicators. Between 1950 and 1990, liberalizing EPs was the indicator with the highest average value, while restrictive provisions were relatively widespread in the later years. This was particularly the case in 2001-2010, when the average of restrictive EPs was 73%, while the other indicators were all below 25%. In 2011-2020, all averages have increased, but restrictive EPs still dominate.

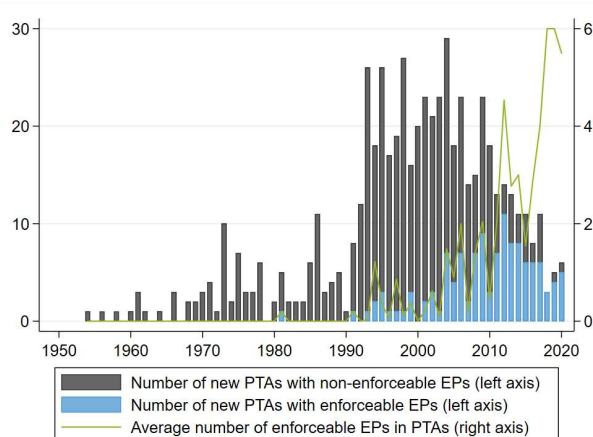
A closer look at the enforceability indicator is essential, because if EPs are not legally enforceable, addressing environmental concerns may have no impact on trade



or the environment. In that case, it is of no use to even discuss that policy tool of including EPs in PTAs.

As Figure 5 shows, enforceable environmental provisions were not included until the 1990s, with one exception: the Lomé II Convention, which entered into force in 1981 between the European Economic Community and the ACP (African, Caribbean, and Pacific) countries. The average number of enforceable EPs has increased since 1990, reaching 5.5 in each new PTA in 2020. Of all agreements across all years, 123 of the 663 PTAs (19%) are considered enforceable.

**Figure 5: New PTAs with and without enforceable environmental provisions**



Source: TREND, DESTA.

Given that enforceability is so crucial, it is also interesting to see how many of the PTAs are simultaneously enforceable and contain another one of the indicators (see Table 1).

**Table 1: Number of PTAs including EPs**

	Overall number of PTAs	Number of PTAs also enforceable
Liberalizing	170	98
Climate-related	108	63
Restrictive	316	122

Source: TREND, DESTA.

In TREND (Morin et al., 2018), 170 of the 663 PTAs contain at least one EP that is classified as liberalizing, while 98 PTAs include EPs that are liberalizing and also enforceable. This is about 58%. The same share exists for PTAs with enforceable and climate-related provisions. From the PTAs with restrictive provisions only 39% are also enforceable.

## 5. Conclusion

Linking trade and environmental policy by including certain environmental standards in PTAs can be problematic because a single policy instrument is used to

achieve different policy objectives that may even be in conflict with one another (Christen et al., 2021a). Although conflicting goals can be challenging, in today's world we cannot neglect the fact that different policy areas, in this case trade and environmental policy, are interrelated. Hence, they cannot be considered in isolation. Countries that trade with each other and benefit from trade-induced gains are responsible for the negative effects caused by international trade. Linking different policies should aim to reduce the negative environmental effects of trade and increase the benefits that arise from trade.

Most countries have already signed Multilateral Environmental Agreements (MEAs) in which they commit to meet certain environmental standards or, for example, to achieve the 1.5-degree reduction target of the Paris Agreement. So why should it make sense to include the same environmental standards again in bilateral agreements? This question is related to the previous point about the interconnectedness of different policies. It is not enough to simply set environmental targets; we also need to think about how these policy targets relate to a particular area, what the consequences are, and how we can deal with them. Moreover, EPs in trade agreements may be more enforceable than MEAs, at least the newer PTAs, and therefore have a greater impact.

The number of EPs in PTAs has been shown to increase, and the newer PTAs appear to contain many restrictive EPs. However, the number is not necessarily an indication of effectiveness in reducing negative impacts or in bringing about positive impacts. It depends on how vague or precise the EPs are and whether they are related to an enforcement mechanism.

The European Commission is aware of this. It has therefore assessed the implementation of the 15-point Action Plan on Trade and Sustainable Development and published a comparative analysis of trade and sustainable development provisions in trade agreements in February 2022. The aim of the study was to conduct a comprehensive and critical analysis of the different sustainability approaches in PTAs. For this purpose, the environmental provisions in EU PTAs as well as in the PTAs of the USA, Canada, Australia, New Zealand, Japan, Chile and Switzerland were examined. It was found that joint committees or national contact points are the most common instruments for implementing sustainability provisions. In addition, cooperation was found to be the key element for implementing sustainability, even in PTAs that include trade sanctions for sustainability, such as those of the USA and Canada.

Taking these findings into account, the European Commission published a review of its trade and sustainable development policies in June 2022. In it, they show how the contribution of EU trade agreements to promoting the protection of the environment and workers' rights worldwide can be improved. It includes: the need for more proactive engagement with partners; strengthening a targeted and country-specific trade and sustainable development approach; mainstreaming sus-

tainability beyond the specific chapter of trade agreements; increased monitoring of the implementation of commitments; enhancing the role of civil society; and strengthening enforcement through trade sanctions as a last resort.

The EU-New Zealand Agreement is the first to integrate the EU's new approach to the trade and sustainable development chapters, highlighting in particular that sanctions can be used, should partner countries persistently violate key international labor agreements and the Paris Climate Agreement. Further research is needed to gain evidence on the effectiveness and the concrete impact of more recent PTAs on the environment as well as on trade.

## 6. References

- Berger, A., Brandi, C., Morin, J.-F., & Schwab, J. (2020). *The Trade Effects of EPs in Preferential Trade Agreements. International Trade, Investment, and the Sustainable Development Goals*. World Trade Forum.
- Brandi, C., Schwab, J., Berger, A., & Morin, J.-F. (2020). Do EPs in trade agreements make exports from developing countries greener?. *World Development*, 129(104899)
- Bundeskanzleramt (2020). *Aus Verantwortung für Österreich. Regierungsprogramm 2020 – 2024*. Eigenverlag, Bundeskanzleramt.
- Christen, E., Friesenbichler, K. S., Hudetz, A., Kettner-Marx, C., Meyer, I., & Sinabell, F. (2021a). *Außenhandel und nachhaltige Entwicklung in Österreich. Befunde auf der Grundlage von vorliegenden Quellen*. WIFO.
- Christen, E., Meinhart, B., Sinabell, F., & Streicher, G. (2021b). *Transportkostenwahrheit im internationalen Handel*. FIW-Research Reports, (03)..
- Dür, A., Baccini, L., & Elsig, M. (2014). The design of international trade agreements: Introducing a new dataset. *The Review of International Organizations*, 9(3), 353–375.
- European Commission (2021). *EU economy and society to meet climate ambitions*. [https://ec.europa.eu/commission/presscorner/detail/en/IP\\_21\\_3541](https://ec.europa.eu/commission/presscorner/detail/en/IP_21_3541)
- Ederington, J., & Minier, J. (2003). Is environmental policy a secondary trade barrier? An empirical analysis. *Canadian Journal of Economics*, 36(1), 137–154. <https://doi.org/https://doi.org/10.1111/1540-5982.00007>
- Gallagher, K. (2004). *Free trade and the environment: Mexico, NAFTA, and beyond*. Stanford University Press.
- George, C. (2014). Environment and Regional Trade Agreements: Emerging Trends and Policy Drivers. *OECD Trade and Environment Working Papers*, (2014/02).
- Hufbauer, G. C., Esty, D. C., Orejas, D., Schott, J. J., & Rubio, L. (2000). *NAFTA and the environment: seven years later*. Peterson Institute.
- Jinnah, S., & Lindsay, A. (2016). Diffusion Through Issue Linkage: Environmental Norms in US Trade Agreements. *Global Environmental Politics*, 16(3), 41–61. [https://doi.org/10.1162/GLEP\\_a\\_00365](https://doi.org/10.1162/GLEP_a_00365)
- Kohl, T., Brakman, S., & Garretsen, H. (2016). Do Trade Agreements Stimulate International Trade Differently? Evidence from 296 Trade Agreements. *The World Economy*, 39(1), 97–131. <https://doi.org/https://doi.org/10.1111/twec.12272>
- Lechner, L. (2016). The domestic battle over the design of non-trade issues in preferential trade agreements. *Review of International Political Economy*, 23(5), 840–871.
- Martínez-Zarzoso, I., & Oueslati, W. (2018). Do deep and comprehensive regional trade agreements help in reducing air pollution?. *International Environmental Agreements: Politics, Law and Economics*, 18(6), 743–777.
- Morin, J.-F., Blümer, D., Brandi, C., & Berger, A. (2019). Kick-starting diffusion: Explaining the varying frequency of preferential trade agreements' EPs by their initial conditions. *The World Economy*, 42(9), 2602–2628.
- Morin, J.-F., & Jinnah, S. (2018). The untapped potential of preferential trade agreements for climate governance. *Environmental Politics*, 27(3), 541–565. <https://doi.org/10.1080/09644016.2017.1421399>
- Sorgho Z., & Tharakan J. (2020). Do PTAs with environmental provisions reduce emissions? Assessing the effectiveness of climate-related provisions. *FERDI Working paper*, (P274).
- UNFCCC - United Nations Framework Convention on Climate Change. (2015). *The Paris Agreement*. <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

**Author:**

Bettina Meinhart  
WIFO – The Austrian Institute of Economic Research  
E-mail: Bettina.meinhart@wifo.ac.at

**Imprint:**

FIW Policy Briefs are published at irregular intervals on current foreign trade topics. Publisher is the FIW - Research Centre International Economics. The authors are responsible for the content of the Policy Briefs.

FIW offers a research platform, information on topics relevant to foreign trade and access to economic databases. It is a cooperation project of the Vienna University of Economics and Business, the University of Vienna, the Johannes Kepler University Linz, the University of Innsbruck, the Austrian Institute of Economic Research, the Vienna Institute for International Economic Studies and the Computing Centre for Economics and Social Sciences and is funded by the Federal Ministry of Education, Science and Research and the Federal Ministry for Digital and Economic Affairs.

**Contact:**

FIW project office  
c/o WIFO  
Arsenal, Object 20  
1030 Vienna  
Phone: +43 1 728 26 01 / 335  
E-mail: [fiw-pb@fiw.at](mailto:fiw-pb@fiw.at)  
Website: <https://blog.fiw.ac.at>