Country-Level Explanations for the Underutilization of Preferential Trade Agreements

DRAFT

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Abstract

What explains utilization of preferential trade agreements? Contrary to common perception, preferential tariffs negotiated within trade agreements are not automatically applied. In fact, firms must decide whether to utilize preferential tariffs for each transaction. Existing explanations for underutilization of preferential tariffs highlight too little benefits or too high administrative costs. This paper uses the case of European Union PTAs, which offer identical benefits and demand identical administrative requirements across its member states. It presents two main findings. First, the paper shows striking cross-country differences in preference utilization across EU member states. Thereby, it offers novel, descriptive evidence that existing product-level explanations do not suffice to explain underutilization of PTAs. Second, the paper explores the role of national institutions in the implementation of PTAs, using panel data on utilization rates for EU imports between 2002 and 2022. Contrary to theoretical expectations, the paper finds a negative relationship between EU country's quality of institutions and PTA utilization. The paper concludes, that for understanding preference utilization, more micro-level evidence is needed regarding the actual process of applying for preferential tariffs, firm's perception of that process, and the administrative processes of national customs authorities.

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I. Introduction

Preferential Trade Agreements (PTAs) have become the principal, bilateral tool for eliminating tariff and non-tariff barriers. The spread of PTAs has been of global reach with the number of PTAs notified to the World Trade Organization (WTO) reaching 365 at the end of 2023, of which more than 80% were only ratified after 2000 (WTO, 2024). While academic research has extensively studied the effects of PTAs on bilateral trade flows between signatory parties (e.g. Baier and Bergstrand (2007)), whether PTAs create or divert trade (e.g. Viner (2014)), or on the political economy factors surrounding the creation of such agreements (e.g. Mansfield and Milner (2012)), far less attention has been given to the extent to which firms *actually make use of preferential tariff rates offered through PTAs*.

In contrast to what is often assumed, lower PTA tariffs are not automatically applied on all trade between PTA partners. Rather, a PTA offers traders the option to import under a lower, preferential tariff rate instead of the commonly applied, higher most-favored nation (MFN) rate. This option is often not exercised, resulting in PTAs being only partially implemented, preferential tariffs underutilized, and potential duty savings left on the table by importing firms. Illustrating this point, Canadian importers utilizing preferential tariffs under the EU – Canada PTA (CETA) in 2022 saved around 587 million euros in duty payments—out of a total of 975 million euros in potential savings (Eurostat - Comext, 2023). Existing research has identified two principal barriers that prevent firms from realizing these potential tariff savings. First, the administrative processes tied to the utilization of PTAs are too costly. Most of these costs arise out of the obligation to comply with rules of origin requirements, which define guidelines goods have to fulfill to benefit from preferential treatment (Brenton and Manchin, 2003). Second, the benefits of utilization i.e., the difference between MFN rate and the preferential tariff, are too small (Baldwin, 2008).

In this paper, I investigate determinants of preference utilization in the context of the EU. The EU is well-suited because its PTAs extend identical benefits and demand identical administrative requirements across all member states. I provide two main findings. First, I find descriptive evidence of significant differences in preference utilization within products across EU countries. This means that even when prominent product-level explanations for non-utilization such as preference margins and rules of origin requirements are held constant, importers in different EU countries end up making diametrically opposed choices in terms of preference utilization. Tying insights of the literature on the role of institutions in international exchange to the

procedure of importing under a preferential tariff scheme, I argue that a country's institutional framework and administrative capacity is related to importers' ability to make use of available preferences and thus with the successful implementation of a PTA. Building on national utilization rates of EU countries' imports from all PTA partners between 2002 and 2022, I show that contrary to theoretical expectations, institutional quality of the importing country is negatively related with a country's utilization of preferential tariffs. Either customs authorities in *high-capacity* states are stricter in the enforcement of common requirements and reject preferential tariff treatment more often, or importers perceive them to be more stringent, leading to a more cautious approach in requesting preferential treatment to begin with. In contrast, institutional quality in the exporting country appears to be less relevant for an importer's decision to utilize preferences.

The paper is organized as follows: Section II offers a background on the existing literature on the implementation of PTAs. It then sheds light on cross-country differences in utilization rates that were previously overlooked. Tying theories on the role of institutions in international exchange to the process of applying preferential tariff rates, Section III formulates empirical expectations on the relationship between institutional quality and PTA implementation. Section IV introduces the data used to test the hypotheses and specifies the empirical model. Section IV presents the results of the empirical analysis. Lastly, Section V discusses the results and their implications for future research before Section VI concludes.

II. Background

An assumption made by researchers estimating a PTA's impact on bilateral trade flows, was that an agreement would be implemented without frictions. Often-read predictions on the increase in trade between signatory parties of a prospective preferential trade area built, and continue to do so, on the idea that all preference-eligible trade actually happens under the lower, preferential tariff rate (see Limão (2016) for a comprehensive literature review). However, using the preferential tariffs under a PTA is an active *decision* of traders: for each transaction, firms need to decide whether to request preferential treatment. This opens up the door for incomplete *utilization* of available preferences.

Conceptualizing Preference Utilization

For an individual transaction, the decision of preference utilization can be illustrated as a discrete choice model. Under rational decision making, importers should opt to utilize a preferential tariff regime when the available tariff savings exceed the costs of utilization. Achievable tariff savings are expressed as the product of the preferential margin i.e., the difference between the MFN rate (applied in case of non-utilization) and the preferential rate, and the transaction value. In contrast, the components that constitute the costs of utilization, as well as their fixed or variable nature are less clearly defined. The probability of utilizing a preferential tariff regime is then given by the indicator function:

$$\text{Probability of Utilization} = \mathbb{I}\left(\text{Preferential Margin} \times \text{Transaction Value} - C > 0\right) \tag{1}$$

As transaction-level information on preference utilization has been hard to access, the preference utilization rate (PUR) has become the most common measure to evaluate the successful implementation of a PTA on a more aggregated level. Imports originating from a PTA-partner country will enter under one of **four different tariff options**: **(i)** the good is covered by the PTA and enters under the preferential tariff rate, **(ii)** the good is covered by the PTA, but is imported under the Most-Favored-Nation (MFN) tariff, **(iii)** the good is not covered under the PTA and enters under the MFN rate, or **(iv)** the good is covered by the PTA but the running MFN rate is zero, making a utilization of the PTA redundant (Nilsson, 2022).
Trade flows falling under category (i) and (ii) are summarized as preference-eligible trade i.e., trade where PTA utilization offers potential for tariff savings. The preference utilization rate (PUR) at time t, then follows simply as the share of preference-eligible trade (i + ii) that utilizes preferences (i):

$$PUR_t = \frac{X_t^{utilized}}{X_t^{eligible}} \tag{2}$$

where eligibility refers exclusively to a good's inclusion in the PTA, but does not consider an individual good's compliance with administrative requirements thereunder. A country's preference utilization rate thus represents the trade-weighted aggregate of all individual choices made by its importing firms and is bounded between 0, no utilization, and 1, perfect utilization.

Preference Margins & Transaction Value

Early studies on preference utilization attributed a significant role in the utilization decision to the preference margin. It was argued that preferential margins offered in PTAs were too low to warrant the utilization of preferences. Baldwin (2008) explained the extremely low utilization rates in the ASEAN Free Trade Area (AFTA) of below 10%, by preceding unilateral tariff cuts of the ASEAN members. This made a subsequent utilization of new preferences less attractive. Equally, preferential margins served as a tool to assess the costs of utilization. Observing revealed preferences, it was argued that the *preferential margin* of product-groups with near-perfect utilization represented the upper bound of utilization costs, while *margins* of zero-utilization product groups would constitute a lower bound cost value (Herin, 1986). The range of margin thresholds, and thus utilization costs, estimated in that fashion was between 2 and 8% of the transaction value (Estevadeordal and Suominen, 2003; Carrère and De Melo, 2004; Francois et al., 2006). Consequently, under this approach costs of utilization are assumed to be exclusively variable relative to the value of the transaction.

The earliest challenge to this notion was presented by Candau et al. (2004) who show that while utilization rates across broad product categories are increasing with preferential margins, utilization in low margin *products* is still high. The emergence of more dis-aggregated trade data challenged not only the variable character of the utilization costs, but also the relevance of the preferential margin itself. Keck and Lendle (2012) using highly dis-aggregated, monthly US import data show that average utilization of any preferential scheme was high across all preference margins, rejecting the idea of a threshold margin below which utilization would not be profitable. Instead, they find the transaction value to be a much more relevant predictor for preference utilization. Albert and Nilsson (2016), the first study that was able to access transaction data of EU exports to Iceland, confirm the finding that the use of preferences in a transaction is driven by the transaction size with the preference margin not being a significant predictor of utilization. Thus, the authors echo Keck and Lendle (2012)'s suggestion of compliance costs containing a significant fixed-cost component. In a separate study, Kasteng et al. (2022) utilize transaction-level data for Swedish imports from South Korea. Their findings do not reveal a significant relationship between the preference margin and the probability of utilizing the preferential tariff. They conclude that while a positive preference margin serves as the primary incentive for utilizing preferences, higher preference margins alone are not necessarily associated with increased utilization rates.

Costs of Utilization - Rules of Origin

The contradictory findings on the role of preference margins stress the need for a better understanding of the costs of utilizing a PTA to explain differences in utilization rates. In terms of costs of utilization, particularly rules of origin (ROO) requirements have been identified as a significant stumbling block (Estevadeordal, 2000; Head et al., 2024). To prevent third-country traders from exploiting lower tariff rates through transshipment, rules of origins require goods to originate or undergo a set level of processing within the PTA-area to qualify for preferential treatment. Costs linked to the fulfillment of rules of origin requirements are twofold: (i) Proving compliance with rules of origin requirements creates administrative costs, as firms have to aggregate the origin and value of each individual input, devise a way to calculate the local content of their product, and follow the required procedures of their national customs authority to certify their goods' compliance with the rules of origin. (ii) Besides that, rules of origins will lead to increased costs if firms need to alter their supplier network to comply with the requirements and use preferential tariffs. Not only will locally sourced inputs have a higher price, but finding new suppliers will equally invoke searching and switching costs (Head et al., 2024). Therefore, with varying degrees of stringency across ROO specifications, and differing administrative capacities across firms, compliance costs are assumed to be product-, as well as firm-specific.

To account for the product-specific cost element, Estevadeordal (2000) devised a restrictiveness index, ranking different ROO specifications in terms of their difficulty of compliance. Using this index they were able to show that products with more *restrictive* rules of origin requirements are characterized by lower utilization rates (Estevadeordal and Suominen, 2003). Nilsson (2023) was the first to match individual rules of origin to the exact products they apply to and their utilization rates under the EU-Canada PTA. He concludes that identical ROO specifications have different impacts on utilization depending on the product, emphasizing the principal weakness of restrictiveness indices. Taking the example of a minimum local content requirement as one form of ROO specification, a restrictiveness index assumes that fulfilling a 40% local content threshold is equally difficult to comply with across all products for which this requirement is defined. However, in reality 40% local content might be much easier to achieve in some product categories than in others. Similarly, Tingvall et al. (2024) show heterogeneous effects of the same rules of ori-

gins on preference utilization across three EU PTAs. Contradicting the reasonably large body of academic literature on rules of origins as a stumbling block for PTA utilization, survey results of Belgian and Swedish exporters show that most firms do not perceive ROOs to be a major hindrance in making use of preferences (Decoster, 2023; Kasteng and Almufti, 2021).

Costs of Utilization - Firm-level determinants

Instead turning towards the firm-specific component of utilization costs, Head et al. (2024) provide a theoretical extension of the Melitz-model of heterogeneous firms in international trade. They argue that with an increasing degree of rules of origin's restrictiveness, firms initially expand their local input sourcing in order to comply and use preferences. However, as the restrictiveness passes a firm-specific threshold value, a firm will stop expanding its (PTA-)domestic sourcing, renounce available preferential tariffs and eventually fall back to sourcing from lower cost suppliers. They substantiate their theoretical model, analyzing the behavior of US automotive producers during the renegotiation of NAFTA rules of origins in 2020. Their argument builds on the idea that only the most efficient firms will be able to comply with the most restrictive ROOs. Therefore, less efficient firms would be less capable of fulfilling the necessary administrative requirements and not make use of preferences. Once again the empirical evidence on this theoretical prediction is mixed. With firm size as the principal proxy for firm efficiency, survey results of Japanese exporters confirm the prediction that bigger firms are indeed better in utilizing preferences (Katsuhide and Shujiro, 2010; Hiratsuka et al., 2009). In contrast, Wignaraja (2014) is not able to confirm the relevance of firm efficiency for preference utilization for exporters from the Philippines, Malaysia and Indonesia. Similarly, using transaction-level data of Swedish imports from South Korea and Swiss imports from all PTA partners, Kasteng et al. (2022) and Legge and Lukaszuk (2024) do not find significant differences in preference utilization across firms of different sizes.

Next to firm size, the impact of firm's prior experience with utilizing preferential tariffs has been analyzed as a potential explanation for differences in utilization. As firms start learning about the relevant administrative processes to utilize preferences and build an adequate internal infrastructure to execute the necessary steps to be granted preferential tariff treatment, the fixed cost of utilization decreases over time (Krishna et al., 2021). Building on matched importer-exporter data for Colombian imports from Argentina and Peru, Krishna et al. (2021) show that previous expe-

rience leads to learning effects over time in particular on the same-product, same-importer dimension. Even though, they also find evidence for cross-product and cross-importer learning effects that reduce fixed costs over time, these are much less pronounced. Their findings suggest that it is not necessarily only importer or exporter characteristics that matter, but equally the relationship of the particular importer-exporter pair that must be taken into account. In contrast, Benguria (2022) using a count variable for past PTA use concludes that learning is not restricted to the product-level but increases the probability of future utilization across product categories. Kasteng et al. (2024) differentiate between learning-by-doing and learning-over-time effects, showing that in particular the learning-by-doing dimension is relevant in importer's decision to utilize preferences.

Utilization beyond Product-specific Determinants

Despite increased academic interest in the implementation of PTAs over the past years, the understanding of the drivers of utilization are still fragmented. Whereas the benefits of utilization are clearly defined as the difference between the posted MFN and preferential tariff rate, the individual cost components, as well as their determinants are much harder to grasp. While initial firm-level explanations for under-utilization have been explored, little attention has been paid to the environment a firm finds itself in when deciding to utilize preferences. If two importers of the same good were located in different countries but faced the same terms of a PTA, including identical tariff differentials and administrative requirements, existing literature suggests that these firms would likely make the same decision regarding preference utilization.

The European Union (EU) offers the ideal empirical setting to test this prediction. The European Commission has the exclusive mandate to negotiate PTAs for its member states. As a result, rules of origin requirements and other administrative procedures for receiving preferential treatment are uniform across all 27 members. Moreover, as a customs union the EU poses a common tariff across all member states towards goods originating outside of the trading bloc. Therefore, the tariff differential through PTA utilization in a given product is equally the same across all member states. Consequently, differences in utilization rates aggregated at the country-level between EU members for a given PTA partner should mostly be due to differences in their traded product mix. Some country's imports might be more concentrated in products with higher preferential margins and/or less restrictive rules of origin re-

quirements, which would result in differences in overall utilization rates. However, on a dis-aggregated product-level, where both preference margins and rules of origin requirements are equivalent for all importers across EU countries, the reviewed body of literature would predict no significant differences in utilization rates across EU member states.

Before testing for the accuracy of this prediction, some more technical details need to be clarified. The discussed elements relevant for utilization, i.e. ROO requirements, MFN tariffs and preferential tariffs can be defined at different levels of product aggregation in the harmonized system (HS) for product classification. They are either defined at the level of a product chapter (HS 2-digits), a product heading (HS 4-digits) or a product subheading (HS 6-digits). To illustrate this concept more clearly, HS chapter 64 includes *footwear, gaiters and the like; parts of such articles*. Tariffs and rules can then be defined for all headings or subheadings falling under the broad chapter of shoes (cp. Table I). However, there might be an interest to have differential tariffs/rules for the heading of *footwear incorporating a protective metal toe cap* (HS 6401) and *separate parts of footwear* (HS 6406). Lastly, within heading 6406, *parts of footwear*, there might be reasons to have differentiated rules for subheading 6401.10, *uppers and parts thereof, other than stiffeners*, and 6401.20, *outer soles and heels, of rubber or plastics*. In the EU, RoO are most commonly defined at the level of the HS-Heading or the HS-Chapter, and only, in some cases, at the level of subheadings (Estevadeordal and Suominen, 2004). Thus, when comparing utilization rates across EU member states at a gradually increasing degree of product-detail, existing literature would predict differences across product groups due to varying benefits and administrative rules. However, within single product categories little cross-country variation in utilization rates would be expected.

Table I

Different Degrees of Aggregation in the HS-System.

Title	Digits	Example
HS-Chapter	2-Digits	64 - footwear, gaiters and the like; parts of such
HS-Heading	4-Digits	6406 - parts of footwear
HS-Subheading	6-Digits	6406.20 - outer soles and heels, of rubbers or plastics

Using the PTA between the EU and the Republic of Korea, the first of the EU's so-called new-generation PTAs that has been provisionally applied since 2011, I can analyse the within-product distribution of preference utilization rates across mem-

ber states. I calculate preference utilization rates at the different levels of product aggregation using data on preference-eligible and preference-utilizing imports into the EU from Eurostat - Comext (2023). Figure I and Figure II (as well as Appendix I) illustrate the interquartile range, at different levels of product aggregation, of EU countries' utilization rates across product groups for imports from South Korea between 2011 and 2022. Each horizontal line in figure Figure I represents an individual good, defined at the HS-Chapter level. The length of each line indicates the distance between the 25th percentile and the 75th percentile of preference utilization rates across the member states in the given product.[1] Based on the review of the literature, lines would be expected to be positioned at different points between 0 and 1, i.e., in some products, utilization should be higher than in others due to differences in preferential margins and ROO requirements. However, the length of each line, i.e., differences in preference utilization across member states within a single product, should be minimal.

Surprisingly, Figure I reveals that the interquartile range of utilization across most HS-Chapters is rather large, sometimes spanning the entire range from 0 to 1. This means that importers in some countries make complete use of preferences in a product chapter where others do not utilize any preferences. With product-specific characteristics being held constant, these differences cannot be driven by preferential margins or ROOs. In addition, there are several chapters where eligible trade is happening, but preferences are not taken up in any country. Thus, in these chapters the combination of preferential margins and rules of origin requirements appears unattractive to an extent that preference utilization is not economically viable under any circumstances.

As this observation could be due to countries predominantly trading in different headings (or subheadings) within a chapter, Figure II confirms the pattern at the more dis-aggregated level of HS-Headings. In most headings utilization is neither perfect, nor zero. Instead, utilization rates within the same product heading, again, vary significantly across EU member states. Appendix I graphically confirms the observations of Figure I and Figure II at the level of HS-Subheadings, the most disaggregated level relevant for the definition of ROO requirements.[2]

[1] For the period 2011 – 2020 preference utilization rates for imports into the United Kingdom from the Republic of Korea were included in the calculation of the percentile values.

[2] Appendix II and Appendix III display interquartile ranges of importing (EU) countries' utilization rates for some of the most relevant PTA partner countries.

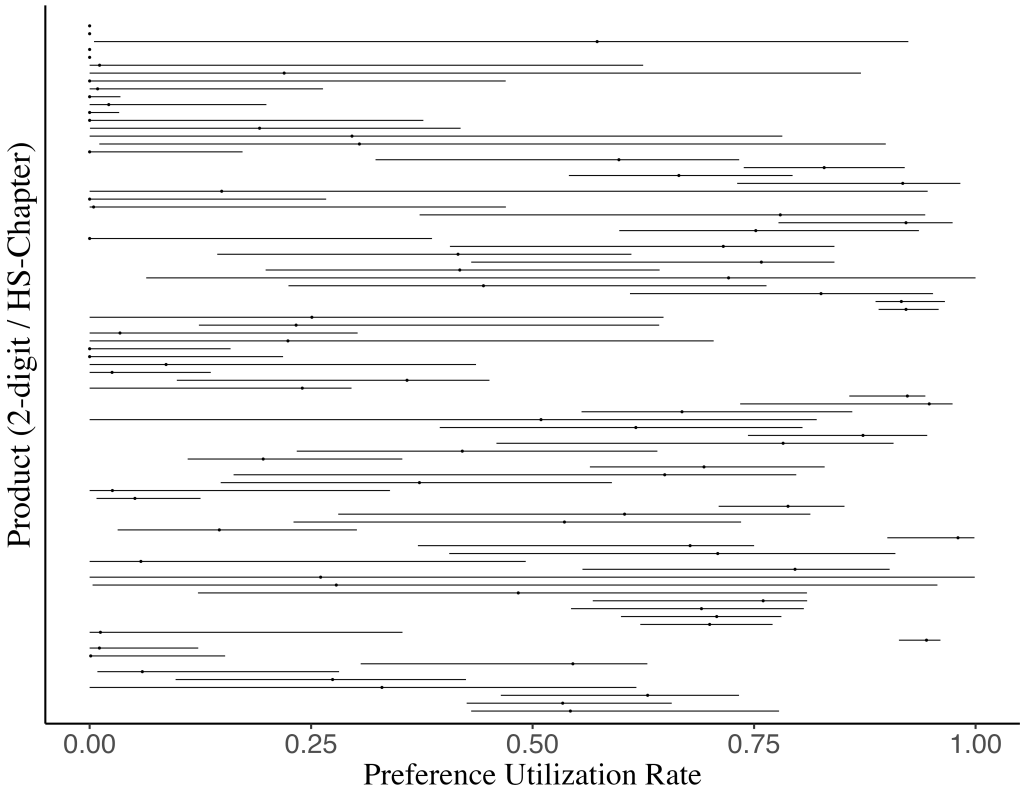

Figure I

Interquartile Range of Import Preference Utilization across EU Member States by HS-Chapter (2-digits) for EU – South Korea PTA 2011-2022.

Each horizontal line represents the interquartile range of importer preference utilization for an individual product chapter across EU member states since the provisional application of the PTA in 2011 up to 2022. The left/right end of each line represents the 25%/75% quantile value. Dots represent the product's median utilization across countries. For the calculation of all values, only countries with preference-eligible trade with South Korea in the respective HS-Chapter were considered. Existing literature would predict variance across products (i.e., different positioning of horizontal lines between 0 and 1), but little variation within products, expressed by the length of each horizontal line.

In summary, faced with equal benefits and administrative requirements, firms based in different countries end up making opposite choices in terms of utilization. With the benefits formally defined, the presented, descriptive findings strongly point towards the presence of a country-specific component in the costs of utilization, which existing explanations for under-utilization do not account for. This naturally raises the question whether importers in some countries are systematically better in benefitting from preferential tariff schemes than importers in other countries. To tackle this question, the next section introduces a new perspective on the process of preference utilization.

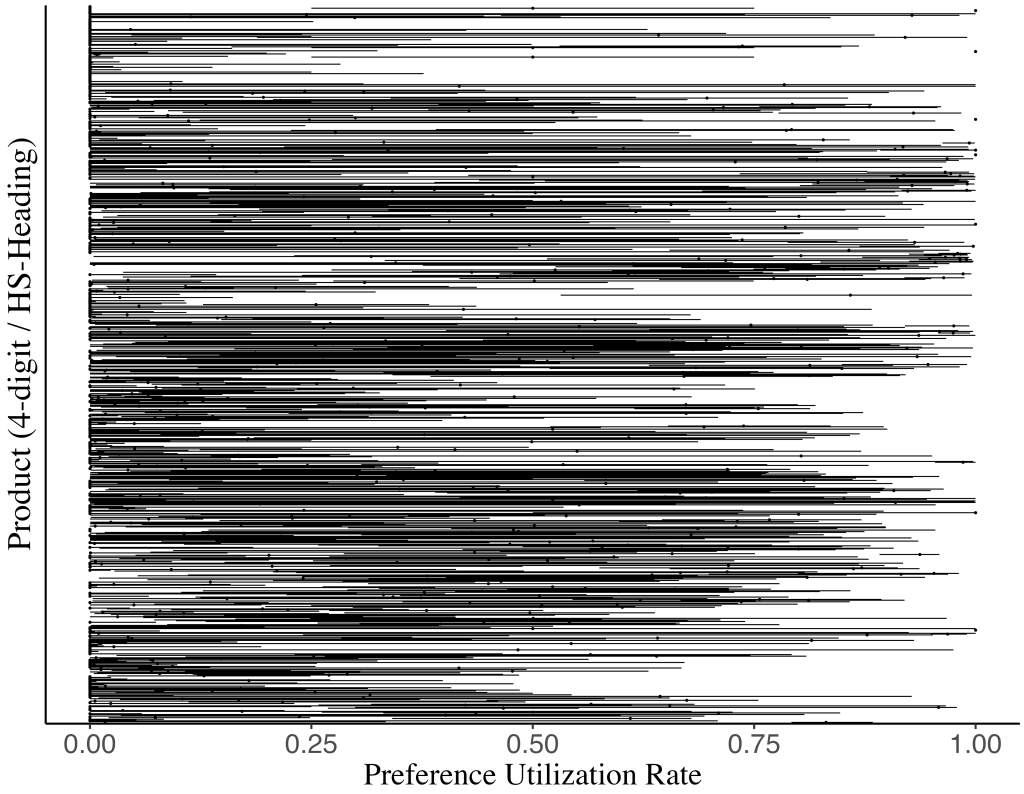

Figure II

Interquartile Range of Import Preference Utilization across EU Member States by HS-Heading (4-digits) for EU – South Korea PTA 2011-2022.

Each horizontal line represents the interquartile range of importer preference utilization for an individual product heading across EU member states since the provisional application of the PTA in 2011 up to 2022. The left/right end of each line represents the 25%/75% quantile value. Dots represent the product's median utilization across countries. For the calculation of all values, only countries with preference-eligible trade with South Korea in the respective HS heading were considered. Existing literature would predict variance across products (i.e. different positioning of horizontal lines between 0 and 1), but little variation within products, expressed by the length of each horizontal line.

III. Theory

As the decision of utilization is only relevant after trade flows have actually occurred, most textbook economic theory on trade is not applicable to the phenomenon. However, observing significantly smaller north-south trade flows than what would be predicted based on differences in relative factor endowments, Anderson and Marcouiller (2002) argued that insecurity associated with international exchange created

hidden transaction costs that hampered trade. Concerns of contracts in cross-border transactions being hardly enforceable, and corrupt customs officials represented two elements of insecurity exercising effects similar to an additional tariff or tax. Good institutional support in terms of a legal framework that enables fair and transparent contract enforcement, and prevents and/or punishes corruption thus reduces hidden transaction costs in international exchange and explains the predominance of trade between capital-abundant, developed countries (Anderson and Marcouiller, 2002; Francois and Manchin, 2013). These insights represented an extension of the literature on the role of institutions in economic development (see e.g., Acemoglu et al. (2005); Rodríguez-Pose and Storper (2006)) to the field of international trade.

Introducing the framework of governance environment, Li and Samsell (2009) show that countries in which business is mainly conducted on a contractual basis trade significantly more than countries where governance is based on *informal* relations. Building on these findings, Wu et al. (2012) argue that trade with countries where business is relying on informal relations instead of high-quality formal institutions is more costly for outsiders. With less transparent rules and regulations and more insecurity about their enforcement, international exchange with countries identified by weak (formal) institutions will be riskier and consequently more costly. Concerning trade flows, a convincing theoretical framework emerges, suggesting that high-quality institutions enabling a level-playing field in terms of legal security and corruption-prevention to outsiders and insiders alike, are conducive to international trade.

Unlike other trade variables, such as factor endowments or comparative advantages, I argue that a country's institutional quality and its effect on the insecurity of international exchange are not only relevant for trade flows but also for preference utilization. To understand the rationale behind the argument, the technical process of requesting and receiving preferential tariff treatment must be illustrated.

While concrete procedures vary across countries and PTAs, the sketched steps and involved parties are of general relevance:

Exporter Perspective: To begin, exporters usually have to register themselves as *certified exporters* with their national customs authority to claim the originating status of their goods. In the next step, exporters have to make a remark on the invoice (or another adequate shipping document) indicating a good's origin and provide their national customs authority with the relevant documentation proving a good's com-

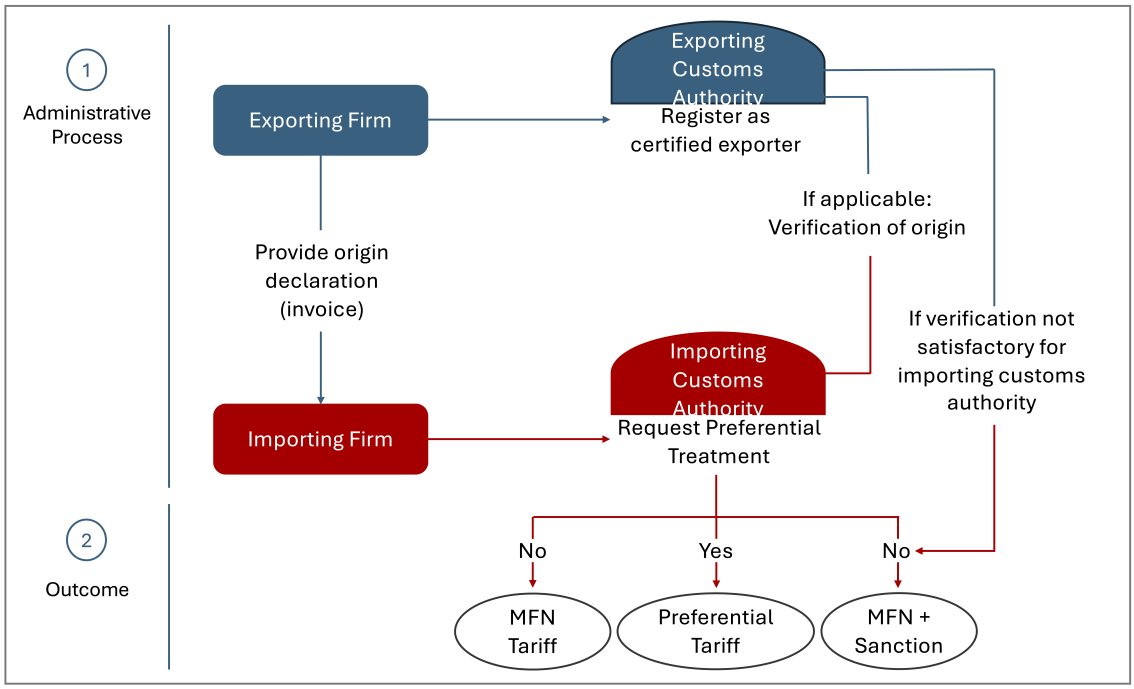

Figure III

Process of Receiving Preferential Tariff Treatment.

Blue-colored shapes and arrows represent process steps occurring on the exporter side. Red-colored shapes and arrows represent process steps occurring on the importer side. Bi-colored arrows indicate process steps where importing & exporting actors are co-involved. The ultimate decision regarding a transaction's tariff treatment is up to the importing customs authority. The three potential outcomes are depicted at the bottom of the diagram.

pliance with the respective ROO requirements.

Importer Perspective: As soon as the goods are delivered to the importing country, the importer can claim preferential tariff treatment by handing in the invoice with the exporter's remark of originating status to their national customs authority.[3]

In case the customs authority of the importing country has doubts about a good's originating status, it would request the exporting customs authority to verify the submitted documentation with the exporting company. If the exporting customs authority is not able to provide sufficient evidence to resolve the doubts of the importing customs authority, the importer can be rejected preferential tariff treatment and potentially face sanctions.[4] In the case of the EU, customs authorities have up to

[3]In newer PTAs, importers are sometimes allowed to self-declare the originating status of goods if they are reasonably confident that they comply with the respective requirements.

[4]Usually, foregone tariff payments have to be repaid with an additional interest. Wrongful ap-

three years after the original import to raise concerns and claim back foregone tariff payments for transactions in which preferential rates were wrongfully granted. Ultimately, the importer will thus be held liable for the submitted documentation of the exporter. Not only the interdependence between importer and exporter but also between trading companies and their respective national customs authorities reveals several channels explaining why institutional quality conditions the uptake of preferences on a national level.

Studying the process of receiving preferential treatment, two distinct ways that result in non-utilization can be identified. Either an importing firm may decide against requesting preferential treatment and pay the higher MFN tariff, or a request for preferential tariff treatment is declined by the importer's customs authority due to insufficient verification of the originating status.

From the perspective of the importer, incorrect origin documentation by the exporter that might result in later sanctioning and the obligation to repay past duties represent the biggest risk when utilizing preferences. Equally, from the perspective of the importing customs authority, there is a conflict of goals, as the granting of preferences directly causes lower duty income for the state, creating uncertainty for firms regarding the appropriate handling of their shipment by customs officials. The quality of a country's institutional framework exerts a moderating factor on these concerns. In a high-quality institutional environment, importers face less uncertainty about whether formal rules are applied and enforced adequately. In addition, trust in the proper functioning of the rule of law and corruption controls reduces the ambiguity of being exploited by national authorities or individual customs officials. Similarly, the prominent role of the respective customs authorities in the process of utilizing preferences sets the stage for cross-country differences in the quality or efficiency of national customs offices that affect the uptake of preferential tariff rates. Differences in administrative efficiency across customs authorities, e.g., processing times, the degree of digitization, or accurate application of regulations, will render the process of preference utilization in some countries more challenging than in others. In addition, differences in human resources across national customs authorities will make some customs authorities operate more efficiently than others. Estevadeordal and Suominen (2004) suggest that uncertainty surrounding origin calculations e.g., in connection with foreign exchange volatility, "*may give rise to subjective admin-*

plication for preferential treatment might result in an importer being *red-flagged* by their respective customs authorities. *Red-flagged* importers are more often subject to customs audits resulting in delays in their supply-chains.

istrative discretion on the part of the importing country customs". Thus, some customs authorities will audit origin declarations more stringently than others. The first empirical expectation on the role of institutional quality in the importing country on preference utilization is therefore formulated as:

H1: Importers' preference utilization rates are higher in countries with high-quality institutions.

As the rejection of preferential treatment hinges on the collaboration between the customs authority in the importing and the exporting country, institutional quality on the exporting side might equally be relevant for the level of preference utilization in the importing country. Customs authorities in exporting countries with higher administrative capacity should be able to handle verification requests by importing countries' customs authorities more efficiently. Thus, in a second hypothesis on the role of the exporter's institutional quality, we expect:

H2: Higher administrative capacity in the exporting country is associated with higher levels of importer's preference utilization.

IV. Data

To test these empirical predictions, I construct a panel dataset of preference utilization rates and different indicators of institutional quality. For the principal dependent variable—the preference utilization rate of EU countries' imports—I extracted annual data on the value of preference-eligible imports and the value of imports utilizing preferences for each EU member state from all PTA partner countries over the 20-year period between 2002 and 2022 (Eurostat - Comext, 2023).[5] I opted to exclude trade that was eligible for preferential treatment under the General Systems of Preferences (GSP) from the analysis. The unilateral granting of preferences to developing countries under the GSP involves different administrative processes than reciprocal PTAs, making the theoretical predictions formulated based on the process of receiving preferential treatment less applicable to GSP-eligible trade (Cariola and Lanz, 2022). Due to the EU's gradual enlargement and the ratification of a significant number of new PTAs during this period, the panel structure of the data is unbalanced, with the number of EU-country – PTA-partner pairings increasing over time. The preference utilization rate for each country-pair and year combination is

[5]For a list of all relevant PTA partner countries and the corresponding periods during which the PTA has been applied, see Appendix IV.

then calculated as the sum of imports entering under some form of reduced, preferential rates over total preference-eligible imports.

As institutions represent the core of my argument, I used different data sources to compile a robust measure of institutional quality. In total, I use 16 different measures of institutional quality for both importing EU member states and exporting PTA partner countries, from the World Bank's Global Governance Indicators (corruption control, government efficiency, regulatory quality, rule of law), the Fraser Institute (legal structure and property rights, freedom to trade, regulation of credit and business, access to sound money) and the Heritage Foundation (property rights, business freedom, economic freedom index, financial freedom, fiscal freedom, monetary freedom, investment freedom, freedom to trade). All indices were normalized to range between 0 and 10, with higher numbers indicating better institutional quality.[6] Moreover, I control for traditional trade variables commonly used in gravity frameworks (Anderson and Van Wincoop, 2003). These variables include the overall size of the importer's economy, the distance between the two countries, the presence of a common language, and whether a country is landlocked. To account for differences between older and newer EU member states, I incorporate a dummy for countries that joined the Union after 2000. Finally, I include each country's trade as a percentage of GDP to measure trade dependency among individual member states. Appendix V offers a detailed summary and explanation of the individual variables used throughout the empirical analysis.

To assess the role of institutional quality in the importing country and its effect on the uptake of preferences, the following two-way fixed-effects model is estimated:

$$\begin{aligned} PUR_{ijt} = &\beta_1 \text{ Institutional Indicator}_{it} + \beta_2 X_{it} \\ &+ \beta_4 Z_i + \gamma_j + \eta_t \end{aligned} \tag{3}$$

where *Institutional Indicator*$_{it}$ refers either to a composite measure of institutional quality in the importing (EU) country combining the World Bank, Fraser Institute, and Heritage Foundation indicators, or to each of these measures individually (i.e., one for the World Bank, one for the Fraser Institute, and one for the Heritage Foundation). X_{it} is a vector of control variables varying across EU member states and time, and Z_i is a vector of time-invariant, EU-specific control variables. γ_j and η_t respectively represent partner-country, and year fixed effects. The principal coefficient of interest β_1, thus isolates the effect of a change in importer's institutional quality

[6]The selected indicators of institutional quality follow other studies that investigated the general role of institutions in trade, such as Kokko et al. (2014).

on the preference utilization rate holding unobserved partner-country (and thus also PTA-specific) characteristics constant.

To estimate the effect of institutional quality in the exporting country on the importer's preference utilization, I estimate:

$$\begin{aligned} PUR_{ijt} = &\beta_1 \text{ Institutional Indicator}_{jt} + \beta_2 X_{jt} \\ &+ \beta_4 Z_j + \gamma_i + \eta_t \end{aligned} \tag{4}$$

In this case, *Institutional Indicator*$_{jt}$ refers to the measure of institutional quality in the exporting country, X_{jt} to a vector of control variables varying across PTA partner countries and time, Z_j to a vector of time-invariant, PTA-partner specific controls, γ_i to EU-importer fixed effects and η_t to year fixed effects.[7]

Results

Models (1) through (4) in Table II show the coefficients for institutional quality in the importing country. I find that, after controlling for unobserved partner-country characteristics and year-specific factors, better institutions in the importing country are consistently associated with lower preference utilization rates across all measures of institutional quality. While there are slight differences in the level of statistical significance and the size of the coefficients, the negative relationship between institutional quality and preference utilization persists regardless of the measure used (cf. Figure IV). Consulting the full regression table in Appendix IX, the measure of trade dependency also shows a statistically significant negative coefficient. These findings suggest that importers in countries that are less dependent on trade, with institutional environments where government processes are less efficient and interactions between public and private actors are characterized by greater uncertainty and opacity, are in fact better at making use of preferential tariff rates. This confirms a significant relationship between the institutional environment in the importing country and the uptake of preferences, albeit in the opposite direction to what theoretical expectations suggest.

Model specifications (5)-(8) on the role of the institutional environment in the exporting country, while holding constant unobserved EU-importer characteristics,

[7] Given the high correlation between indicators of institutional quality and GDP per capita as measures of countries' development status and the risk of biased coefficients, estimation results in the main text are presented without the inclusion of GDP per capita (cf. Appendix VI for the correlation matrix). Appendix VII & Appendix VIII display the regression results including GDP p.c.

Table II

Relationship between Preference Utilization Rates in EU MS and Indicators of Institutional Quality; the unit of observation is the EU Memberstate-PTA Partner pair.

	Institutional Quality Importer$_i$				**Institutional Quality Exporter$_j$**			
DV: Preference Utilization Rate$_{ijt}$	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Institutional Quality Composite$_{i(j)t}$	-0.031**				-0.005			
	(0.010)				(0.005)			
Institutional Quality World Bank$_{i(j)t}$		-0.013*				-0.016***		
		(0.006)				(0.004)		
Institutional Quality Fraser$_{i(j)t}$			-0.039*				0.022***	
			(0.015)				(0.005)	
Institutional Quality Heritage$_{i(j)t}$				-0.038***				0.011+
				(0.010)				(0.005)
Num.Obs.	23145	23145	21498	23145	18798	18798	16622	17879
R2	0.373	0.372	0.369	0.374	0.148	0.152	0.126	0.135
Year FEs	✓	✓	✓	✓	✓	✓	✓	✓
Export-Partner FEs	✓	✓	✓	✓				
EU-Importer FEs					✓	✓	✓	✓
Control Variables	✓	✓	✓	✓	✓	✓	✓	✓

$+$ p$<$ 0.1, $*$ p$<$ 0.05, $**$ p$<$ 0.01, $***$ p$<$ 0.001. Standard errors are clustered at the level of the export-partner and reported in parentheses. Models (1)-(4) use regressors of EU members i, models (5)-(8) use regressors of PTA-partners j. Control variables include: ln(GDP)$_{i(j)t}$, Trade as share of GDP$_{i(j)t}$, Common Language$_{ij}$, Capital Distance$_{ij}$, Post 2000 EU Accession$_i$, Landlocked$_{i(j)}$. Institutional Quality indicators from Fraser Institute only available until 2021. Less observations in models (5)-(8) as institutional indicators not available for all PTA-partners.

reveal a less consistent relationship between the variables of interest. The sign and statistical significance of the coefficients vary depending on the choice of institutional indicator, raising doubts about the link between the level of institutional quality in the exporting country and the preference utilization rate in the importing EU country.

Referring back to the process diagram in Figure III, these ambiguous findings for the role of institutional quality in the exporting country might be explained. The final decision to grant preferential treatment, or to request verification from the exporter, always rests with the customs authority in the importing country. The only indirect channel through which the institutional quality of the exporting country might influence preference utilization is via the verification of origin documentation provided to the importing customs authority. Additionally, from the importer's perspective, there is no real concern about wrongful treatment by the exporter's customs authority that could be alleviated by stronger rule of law. Since any potential duty payments are owed to the importing customs authority, the exporting authority has no incentive to obstruct preferential treatment.

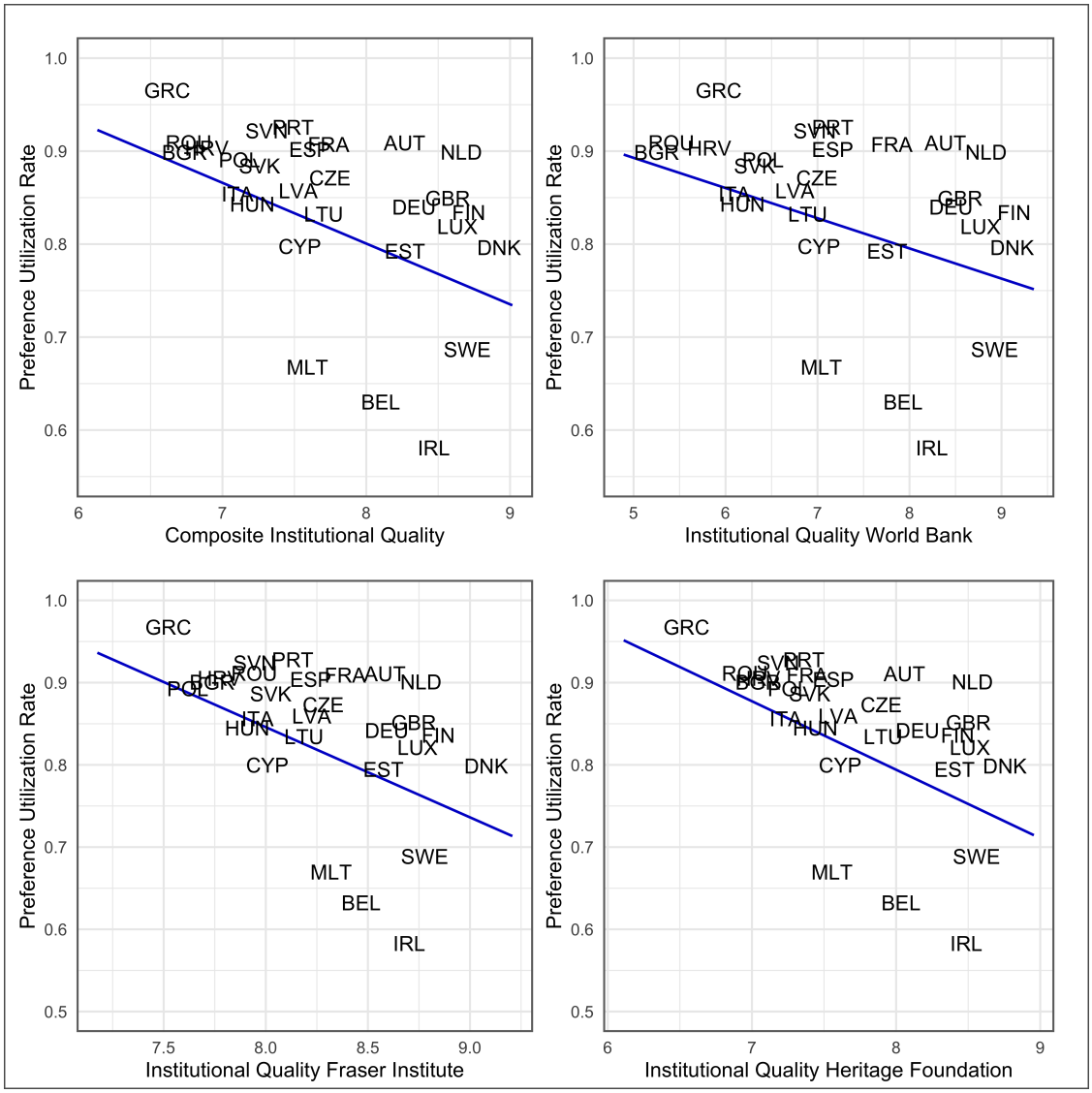

Figure IV

Bivariate relationship between measures of importers' institutional quality and preference utilization rates.

Each panel displays the estimated relationship between the separate measures of institutional quality (in the importing country) and the preference utilization rate. Institutional quality is averaged over years, preference utilization rates over years and PTA partner countries. The negative relationship between importer's institutional quality and preference utilization is consistent across different indices of institutional quality.

The reported results in Table II do not include GDP per capita as a measure of a country's level of development. The strong correlation between institutional indicators and economic development makes it challenging to disentangle the channels that affect preference utilization. Appendix VII repeats the baseline estimation with the inclusion of GDP per capita. While the models including GDP per capita yield

the expected positive coefficient of institutional quality on the preference utilization rate, the highly significant negative coefficient of GDP per capita again contradicts the earlier empirical predictions. Thus, institutional quality or government efficiency of the importing country – expressed either through an institutional indicator or a country's level of economic development – continues to be negatively associated with the degree of PTA implementation.

It is important to note that the final dataset contains a substantial number of zero observations in the dependent variable, as many country pairings with small amounts of preference-eligible imports exhibit zero utilization. Although these observations are considered *'real zeros'* because there is eligible trade that could have benefited from a lower tariff rate, they nonetheless raise concerns that the present results might be influenced by country pairings with negligible amounts of preference-eligible trade. To address this concern, I rerun the model specifications on a sample cleared of all zero-utilization observations. By doing so, the sample size is reduced by 20.28% to 18,449. Comparing the results in Table III, the takeaways of the original estimation are reconfirmed.

Even after removing the zero observations in the dependent variable, institutional quality in the importing country continues to be negatively associated with preference utilization rates. Moreover, the reduced sample reiterates the ambiguity concerning the role of institutional quality in the exporting country on importer's preference utilization. All but one institutional indicator on the exporting side are not statistically significant at any commonly used confidence level.
In summary, considering only observations with non-zero utilization, lower levels of institutional quality in the importing country continue to be associated with higher levels of preference utilization. Thus, the institutional set-up in the importing country appears to be related to the utilization of a trade agreement, however, it is in countries with lower level of institutional quality where preferences are taken up more easily. In contrast, the institutional quality on the exporting side does not seem to be a significant factor for the implementation of the PTA by importers. [8]

Illustrating these findings, Figure V shows the distribution of each EU member state's preference utilization rate across all PTA partner countries in 2022. While

[8] Appendix VIII shows the results including GDP per capita. Like in the previous analyses, including GDP per capita as a measure of a country's economic development flips the sign for the indicators of institutional quality on the importing side. However, on the importing side the level of economic development continues to be strongly, negatively associated with the utilization of available preferential tariff schemes.

Table III

Robustness Test – Relationship between Preference Utilization Rates in EU MS and Indicators of Institutional Quality; the unit of observation is the EU Memberstate-PTA Partner pair. All zero observations in the dependent variable have been removed from the analysis.

	Institutional Quality Importer$_i$				**Institutional Quality Exporter$_j$**			
DV: Preference Utilization Rate$_{ijt}$	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Institutional Quality Composite$_{i(j)t}$	-0.023**				0.003			
	(0.009)				(0.004)			
Institutional Quality World Bank$_{i(j)t}$		-0.010+				0.003		
		(0.005)				(0.003)		
Institutional Quality Fraser$_{i(j)t}$			-0.031*				0.007+	
			(0.015)				(0.004)	
Institutional Quality Heritage$_{i(j)t}$				-0.027**				0.002
				(0.009)				(0.004)
Num.Obs.	18449	18449	17188	18449	16147	16147	14726	15762
R2	0.188	0.187	0.185	0.189	0.086	0.086	0.084	0.091
Year FEs	✓	✓	✓	✓	✓	✓	✓	✓
Export-Partner FEs	✓	✓	✓	✓				
EU-Importer FEs					✓	✓	✓	✓
Control Variables	✓	✓	✓	✓	✓	✓	✓	✓

+ p< 0.1, * p< 0.05, ** p< 0.01, *** p< 0.001. Standard errors are clustered at the level of the export-partner and reported in parentheses. Models (1)-(4) use regressors of EU members i, models (5)-(8) use regressors of PTA-partners j. Control variables include: ln(GDP)$_{i(j)t}$, Trade as share of GDP$_{i(j)t}$, Common Language$_{ij}$, Capital Distance$_{ij}$, Post 2000 EU Accession$_i$, Landlocked$_{i(j)}$. Institutional Quality indicators from Fraser Institute only available until 2021. Less observations in models (5)-(8) as institutional indicators not available for all PTA-partners.

countries like Greece stand out as top performer, where importers make exceptionally high use of basically all PTAs that are available to them, other traditionally free-trade promoting countries, like Sweden, not only show a generally lower level of utilization but also a significantly larger variation in utilization rates across PTA partners. Singling out the case of Greece, the distribution shows that Greek importers utilize preferences to 90 – 100% with a majority of PTA partners. This means that for nearly every imported good from any PTA-partner country (i) the exporter claims that the good fulfils originating requirements, (ii) Greek importers request preferential treatment with their customs authority, and (iii) the Greek customs authority grants preferential treatment.

Table IV splits the EU countries into tertiles of preference utilization. The top performing countries in terms of preference utilization are not only significantly better in making use of available preference schemes, but they also exhibit lower variances in utilization across agreements. The best utilizers among the EU member states are

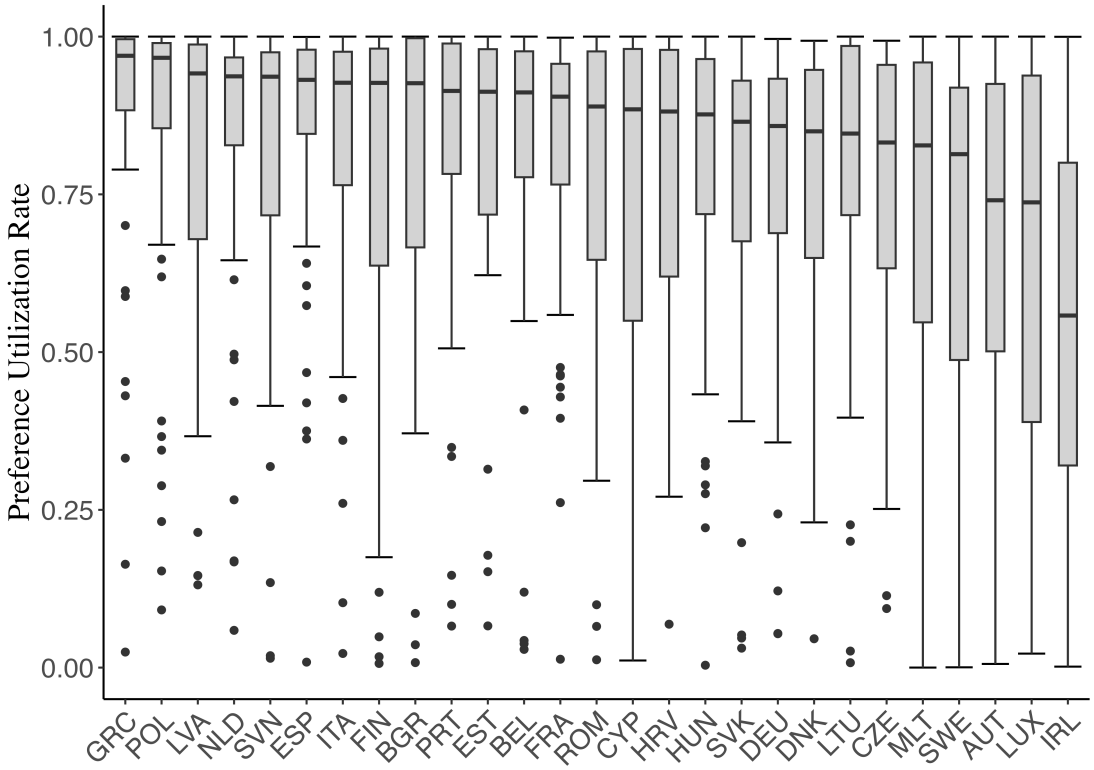

Figure V

Import Utilization Rates by EU Member State in 2022.

Each boxplot represents a country's range of aggregate preference utilization across all PTA partners with which positive preference-eligible imports were recorded in the period of observation. The countries are ordered based on median utilization. The smaller boxes to the left of the chart suggest that across all PTA countries utilization is not only higher than in other countries but also that the bulk of utilization rates falls in a narrower range of (high) utilization rates.

on average less economically developed, have lower-quality institutions, and are less dependent on trade overall.

V. Discussion

As the empirical analysis revealed a particular role for institutional quality in the importing country, the following section will largely discuss the connection between institutional characteristics in the importing country and preference utilization by importers.

To derive potential explanations for these initially counterintuitive results, we need to return to the process of applying for preferential tariff treatment. From the

Table IV

Descriptive Statistics grouping EU Members into Tertiles of Preference Utilization.

	Mean	SD
Preference Utilization Rate		
Bottom Utilizers	0.55	0.42
Medium Utilizers	0.63	0.40
Top Utilizers	0.72	0.37
Institutional Quality Composite		
Bottom Utilizers	8.06	0.60
Medium Utilizers	7.70	0.69
Top Utilizers	7.53	0.66
GDP p.c.		
Bottom Utilizers	45,588	26,743
Medium Utilizers	31,061	14,822
Top Utilizers	30,144	13,300
Trade as Share of GDP		
Bottom Utilizers	1.50	0.72
Medium Utilizers	1.20	0.71
Top Utilizers	0.92	0.35

perspective of the importing company, in the case where exporters have submitted a shipping document with the remark of a product's originating status, non-utilization might occur if the importer decides against requesting preferential treatment with their customs authority. Similarly, the customs office in the importing country can influence the uptake of preferences, having the authority to reject preferential treatment even in the presence of exporters' documentation and importer's request for preferential treatment (Nilsson, 2023). The only way in which an exporting company might impede utilization by the importer is by not submitting the relevant documentation because their good is simply not compliant with ROO requirements, or because the proof of compliance is to expensive to provide. In the empirical setup we control for these possible reasons for non-utilization on the exporting side through the inclusion of partner-country fixed effects across all model specifications. Therefore, explanations of the empirical findings on the role of institutional quality in the importing country must either draw on differences across importers in EU member states requesting preferential tariffs or variation across EU countries' customs authorities in denying requested preferential treatment.

Importing firms would decide against requesting preferential tariff treatment in situations where trust in the accuracy of the exporter's documentation is limited. To prevent being potentially blamed for illegally benefiting from preferential tariff rates and facing possible sanctions by one's national customs authority, firms might prefer paying the slightly higher tariff rates devoid of the three-year legal uncertainty associated with preference utilization. Therefore, the degree to which importers perceive their national customs authority's capability to detect and subsequently prosecute wrongfully granted preferential tariffs should condition a firm's willingness to request preferential tariffs in the first place. Higher administrative efficiency of a country's governmental agencies, as well as a better institutional environment, will increase an importer's conviction that wrongfully claimed preferential rates will be identified, prosecuted, and sanctioned appropriately. Consequently, firms in countries with higher institutional quality, better administration, and economic development, perceiving a higher risk of future sanctioning and legal uncertainty, might be less inclined to apply for preferential treatment in cases where the accuracy of the exporter's documentation cannot be guaranteed. The tendency to apply for preferences in transactions with more uncertainty, which we would expect to be higher in countries with lower quality institutions or administrative efficiency, could then be a possible explanation for the presented findings.

To assess the relevance of the outlined argument, more micro-level data on the level of individual transactions paired with firm survey input is necessary. Firm surveys should aim to determine whether companies perceive the risk of sanctions for inaccurate tariff claims differently across countries. Additionally, these surveys should explore whether the associated legal uncertainty influences the decision to seek preferential tariff treatment in the first place. At this, surveys incorporating an experimental element to gauge individual perceptions of sanctioning might be of particular value.

The second suggested channel concerns different operating practices across the customs authorities of EU member states. While rules and regulations of PTAs are indeed defined within the PTA and thus the same across all members, their concrete control and enforcement are still up to the individual customs authorities. Despite being a customs union, there is no such thing as a central EU customs authority. Thus, while there are EU-level working groups to align national customs processes, the final interpretation and enforcement of EU rules might still deviate across members' customs authorities. There is a substantial body of legal literature

analyzing different interpretations and implementations of EU directives and regulations across member states (see, among others, Falkner et al. (2007); Thomann and Zhelyazkova (2019)). Without being aware of any work analyzing different interpretations of customs rules, it is fair to assume that some (EU) customs authorities might be more stringent in granting preferential tariffs than others. At the same time, customs authorities will operate at varying levels of administrative efficiency due to differences in human resources and technical tools available to them. Consequently, we would expect countries with high institutional quality and a high degree of economic development to possess superior administrative capacities to stringently check goods' originating status and prosecute beneficiaries of wrongfully granted preferential tariffs. Thus, customs authorities of higher-income countries might indeed be more stringent in the application of EU directives and more often reject preferential tariff treatment than customs authorities with less administrative capacity/efficiency. In this setting, the finding of higher utilization rates in less-economically developed countries can be ascribed to a laxer control and enforcement of the respective administrative and legal requirements linked to the process of preference utilization. Less developed countries might simply lack the capacities or expertise to reasonably question the originating status of an imported good and give importers the benefit of the doubt. [9]

A report commissioned by the Dutch Ministry of Foreign Affairs provides anecdotal suppositions that emphasize the role of national customs authorities and the stringency of their controls (Plaisier et al., 2018). Stakeholders reported that within the framework of the EU-South Korea PTA, the South Korean customs authority would apply regulations more strictly than '*EU customs*'. With the interest of increasing customs revenue in mind, Korean customs officials would always try to find reasons to reject preferential tariff treatment. Even though not officially confirmed, some traders reported financial incentives for Korean customs officials based on the individual tariff revenue generated (Plaisier et al., 2018). Thus, the objective of an efficient PTA implementation is in direct conflict with the maximization of tariff income at the level of the national customs authority and supposed bonus payments of the individual customs officer. While this anecdote does not provide insights into different customs handling processes across EU member states, it clearly suggests that regulations of a bilateral PTA between the EU and South Korea are differently implemented across members of the agreement. My argument extends on this in-

[9] As a general measure of compliance with EU law and directives, Appendix XI contains regression results including the number of infringement procedures in year t against EU-member i. The results suggest, that countries which more often are accused of not complying properly with EU directives are not necessarily better at implementing PTAs

sight and suggests that also within the European Union national customs authorities, as well as individual customs officials, apply the same rules with different degrees of stringency. This results in a country-specific 'cost' component of preference utilization.

Similarly to the argument on the sanctioning perception of firms, testing the importance of varying degrees of administrative efficiency and stringency in the enforcement of rules across national customs authorities on the successful implementation of PTAs requires more micro-level evidence on a transaction level. It would be of significant value to learn more about national rejection rates of preferential treatment to assess the degree to which common rules are implemented at varying degrees of stringency. Equally, differences in utilization rates within countries based on the customs center or the individual customs officer processing the shipment could be used to empirically establish the role of customs authorities in the implementation of PTAs. The need to better understand the role of government agencies and customs officials in the utilization of preferential tariff rates is further emphasized by recent advances in the literature on how individual-level bureaucrats shape policy outcomes. Barteska (2024) show how successful trade-policy implementation is highly dependent on the implementing bureaucrat using the case of South Korean export promotion. In contrast, Chalendard et al. (2023) illustrate how individual customs officials at the main port of Madagascar were able to circumvent the random assignment of customs inspectors to shipments. They estimate that a few customs officers that cheated the system caused an overall loss in customs revenue of 3%. Based on this evidence and the nature of the process of preference utilization, I argue that both customs authorities but also individual customs officials represent a relevant determinant for the successful implementation of PTAs.

In summary, I have proposed two distinct channels that could explain the finding of less *efficient* countries being better at utilizing preferences. I argue that companies in countries with high-quality institutions are more reluctant to apply for preferential tariff treatment when they are uncertain about the accuracy of the exporter's documentation. This is because they perceive the risk of retrospective sanctions to be higher than their counterparts in countries with lower quality institutions. As a second explanation, I argued that the stringency with which EU-wide rules are implemented varies across member states, with more *developed* countries being more administratively efficient in properly controlling and enforcing regulations. This would lead to a higher rejection rate for requested preferential tariff treatment. The very high utilization rates across most PTAs in some countries suggest that preferen-

tial treatment is seldom rejected by some customs authorities, and at the same time in those countries, firms nearly always request preferential treatment from their customs authorities. Based on both arguments, I suggest a country-specific component in the *cost* of utilizing preferential tariffs that is associated with a country's institutional set-up. Any investigation of the suggested channels requires access to more detailed data sources, ideally at the level of the individual transaction coupled with insights of the firm's perception of the process of applying for preferential tariff treatment.

VI. Conclusion

This paper started off arguing that traditional product-level determinants of the utilization of preferential tariff rates, such as the preferential margin or rules of origin requirements, fail to explain significant cross-country variation in utilization rates within products. Using the case of the European Union, in which firms of all member states have access to the same benefits when utilizing a PTA, and have to comply with the same administrative requirements, I highlighted the variation of utilization rates across EU member states within highly dis-aggregated product-groups. Subsequently, building on the argument that high-quality institutions reduce uncertainty in international exchange and showcasing the role of the various actors in the process of preference utilization, I formulated the theoretical expectation that importers in countries with high-quality institutions should be better at utilizing preferential tariff regimes. Equally, I suggested that higher administrative capacity in the exporting country might facilitate the process of preference utilization for the importer, due to the interaction between importing and exporting customs authorities when verifying the origin of a product. The paper argued that higher administrative efficiency, transparency, and a fair application of the rule of law in case of disputes make the process of preference utilization less *uncertain* when trade occurs between countries with high-quality institutions and high economic development.

In fact, the empirical analysis revealed ambiguous findings for the institutional environment in the importing and exporting country. A higher degree of institutional quality in the importing country is associated with lower preference utilization rates. It is suggested that this counterintuitive finding can be either explained by different perceptions of sanctioning in the case of wrongfully granted preferential rates or differences in the degree of stringency with which common EU directives are implemented at the level of the national customs authorities. Contrary to the generally positive relationship between institutional quality and trade, the findings hint

that at the level of a very technical process, such as the one of making use of preferential tariff rates, lower levels of administrative efficiency or economic development might actually be beneficial to achieve a policy objective like the implementation of a PTA.

In contrast, the institutional setting in the exporting country does not exert a significant effect on the utilization of preferences in the importing country. The sketched process of receiving preferential treatment has highlighted the importance of the importing firm and the importing customs authority in questions of preference utilization. It is the importer who decides whether to request preferential treatment and it is the importer's customs authority that ultimately decides the tariff treatment of a consignment. From the institutional perspective, this paper has established that the institutional environment or the degree of economic development in the importing country is most relevant for the implementation of preferential trade agreements.

With the spread of PTAs continuing unabated, the question of why a substantive amount of firms leave potential duty savings on the table has become more prominent and relevant to policymakers. While this paper presented a new perspective on the issue of PTA implementation, further work is required to establish causal determinants of preference utilization. In order to achieve this, I reiterate the call for more micro-level evidence, ideally in the form of customs, transaction-level data. Simultaneously, more insights from firms, as well as intermediaries that handle customs processing on behalf of firms, are necessary to advance the understanding of how firms interact with their national customs authorities and come to their decision to utilize or not utilize preferential tariff rates.

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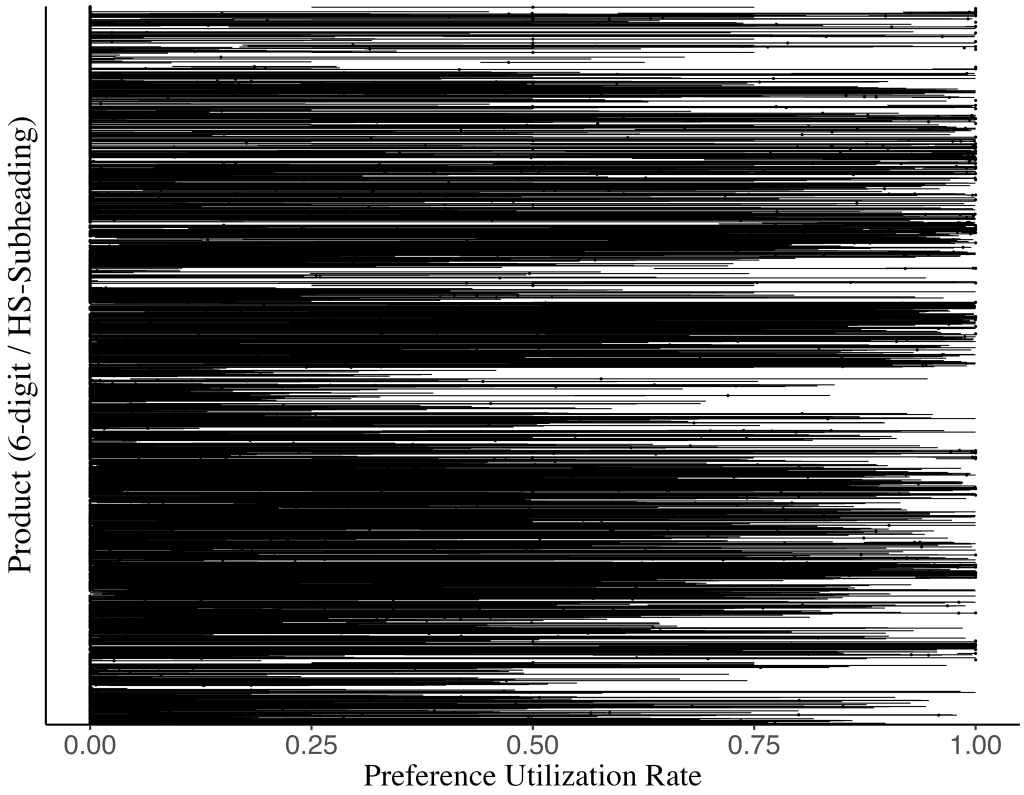
Appendix Content

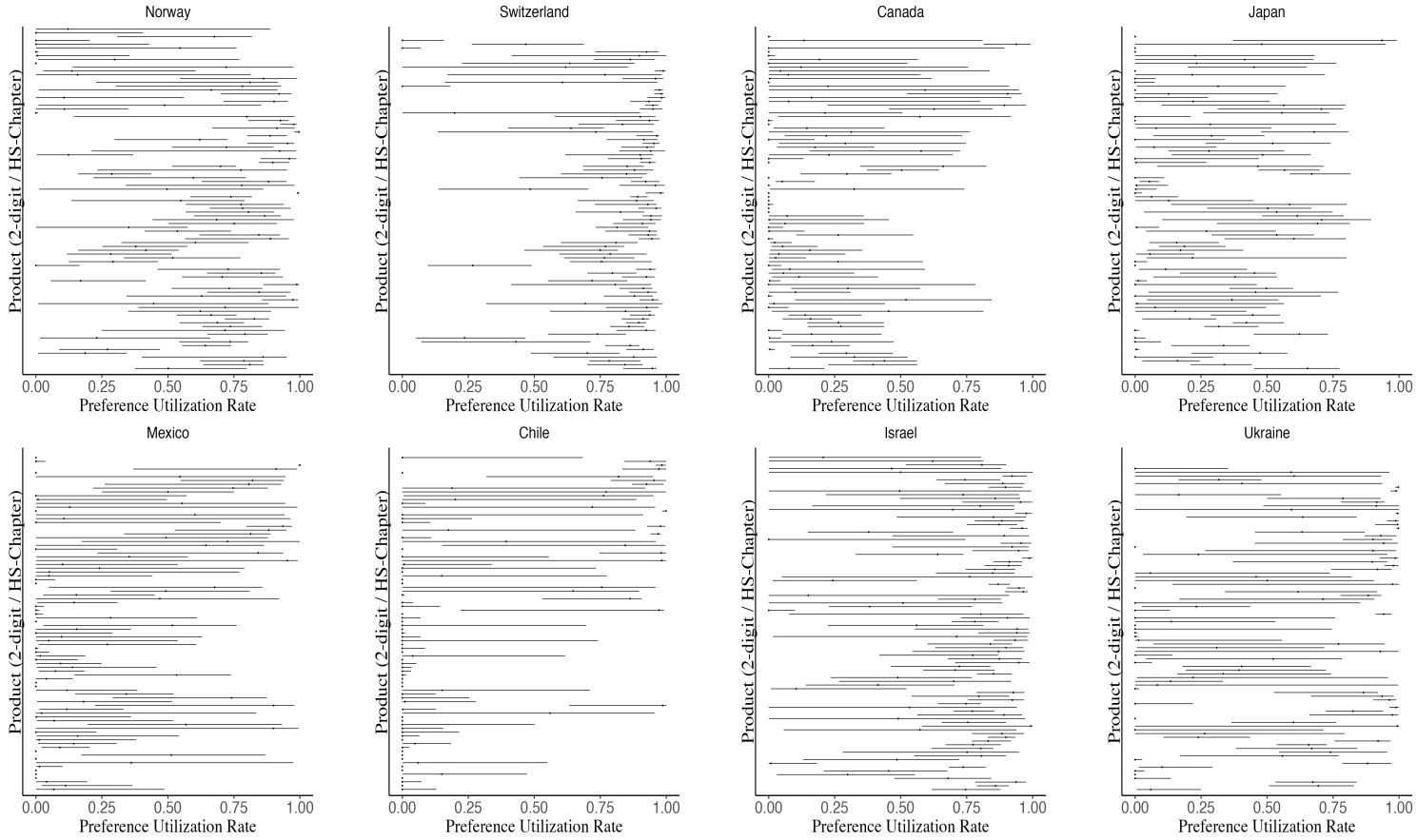
Appendix I: IQR Subheading EU-ROK Import Utilization



Interquartile Range of Import Preference Utilization across EU MS by HS-Subheading (6-digits) for EU-ROK PTA 2011-2022.

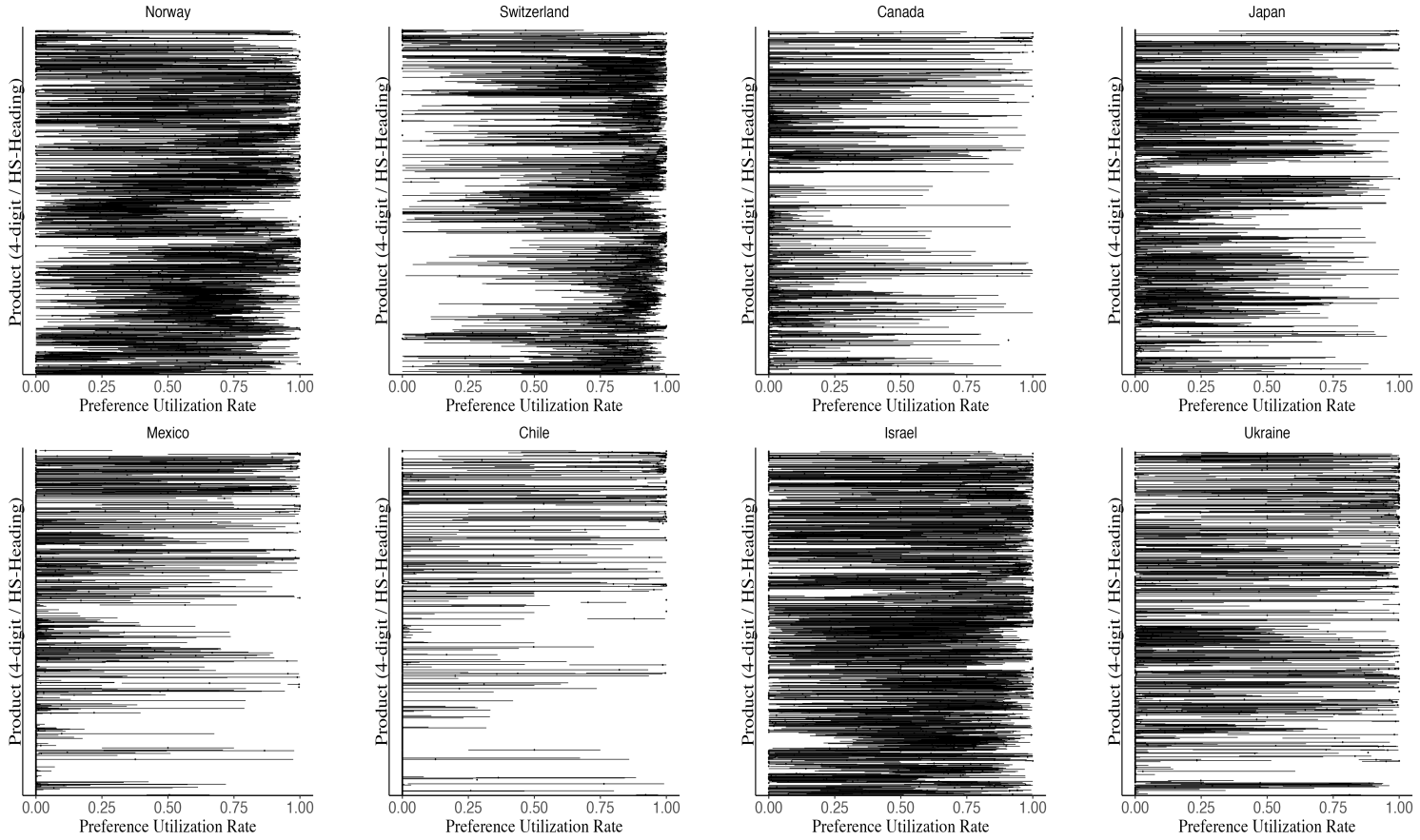
Each horizontal line represents the interquartile range of importer preference utilization for an individual product subheading across EU member states since the provisional application of the PTA in 2011 up to 2022. The left/right end of each line represents the 25%/75% quantile value. Dots represent the product's median utilization across countries. For the calculation of all values, only countries with preference-eligible trade with South Korea in the respective HS subheading were considered. Existing literature would predict variance across products (i.e. different positioning of horizontal lines between 0 and 1), but little variation within products, expressed by the length of each horizontal line.

Appendix II: IQR HS-Chapter with selected PTA partner countries



Interquartile Range of Import Preference Utilization across EU MS by HS-Chapter (2-digits) for selected PTA partners.

Appendix III: IQR HS-Heading with selected PTA partner countries



Interquartile Range of Import Preference Utilization across EU MS by HS-Heading (4-digits) for selected PTA partners.

Appendix IV: List of PTA-Partners

Partner	Agreement	Relevant Period
	Full PTAs	
Aruba	EU - Overseas Countries and Territories (OCT)	2002 - 2022
Anguilla	EU - Overseas Countries and Territories	2002 - 2022
Albania	EU - Albania	2002 - 2022
Andorra	EU - Andorra	2002 - 2022
Netherlands Antilles	EU - Overseas Countries and Territories (OCT)	2002 - 2022
French Southern Territories	EU - Overseas Countries and Territories (OCT)	2002 - 2022
Antigua and Barbuda	EU - CARIFORUM	2002 - 2022
Bulgaria	EU - Bulgaria	2002 - 2006
Bahamas	EU - CARIFORUM	2002 - 2022
Bosnia and Herzegovina	EU - Bosnia and Herzegovina	2002 - 2022
Belize	EU - CARIFORUM	2002 - 2022
Bermuda	EU - Overseas Countries and Territories (OCT)	2016 - 2020
Barbados	EU - CARIFORUM	2002 - 2022
Botswana	EU - SADC	2002 - 2022
Canada	EU - Canada (CETA)	2017 - 2022
Switzerland-Liechtenstein	EU - Switzerland-Liechtenstein	2002 - 2022
Chile	EU - Chile	2003 - 2022
Côte d'Ivoire	EU - Côte d'Ivoire	2002 - 2022
Cameroon	EU - Cameroon	2002 - 2022
Colombia	EU - Colombia, Peru and Ecuador	2013 - 2022

Continued on next page

Partner	Agreement	Relevant Period
Costa Rica	EU - Central American Common Market	2013 - 2022
Cayman Islands	EU - Overseas Countries and Territories (OCT)	2003 - 2020
Cyprus	EU - Cyprus	2002 - 2004
Czechia	EU - Czechia	2002 - 2004
Dominica	EU - CARIFORUM	2002 - 2022
Dominican Republic	EU - CARIFORUM	2002 - 2022
Algeria	EU - Algeria	2002 - 2022
Ecuador	EU - Colombia, Peru and Ecuador	2015 - 2022
Egypt	EU - Egypt	2002 - 2022
Western Sahara	EU - Western Sahara	2019 - 2022
Estonia	EU - Estonia	2002 - 2004
Fiji	EU - Pacific States	2002 - 2004
Falkland Islands	EU - Overseas Countries and Territories (OCT)	2002 - 2020
Faeroe Islands	EU - Faeroe Islands	2002 - 2022
United Kingdom	EU - United Kingdom	2021 - 2022
Georgia	EU - Georgia	2014 - 2022
Ghana	EU - Ghana	2002 - 2022
Grenada	EU - CARIFORUM	2002 - 2022
Greenland	EU - Overseas Countries and Territories (OCT)	2002 - 2022
Guatemala	EU - Central American Common Market	2013 - 2022
Guyana	EU - CARIFORUM	2002 - 2022
Honduras	EU - Central American Common Market	2013 - 2022

Continued on next page

Partner	Agreement	Relevant Period
Croatia	EU - Croatia	2002 - 2013
Hungary	EU - Hungary	2002 - 2004
Iceland	EU - Iceland	2002 - 2022
Israel	EU - Israel	2002 - 2022
Jamaica	EU - CARIFORUM	2002 - 2022
Jordan	EU - Jordan	2002 - 2022
Japan	EU - Japan	2019 - 2022
Kenya	EU - Kenya	2002 - 2022
St. Kitts and Nevis	EU - CARIFORUM	2002 - 2022
Korea, Republic of	EU - ROK	2011 - 2022
Lebanon	EU - Lebanon	2002 - 2022
Saint Lucia	EU - CARIFORUM	2002 - 2022
Lithuania	EU - Lithuania	2002 - 2004
Latvia	EU - Latvia	2002 - 2004
Morocco	EU - Morocco	2002 - 2022
Moldova	EU - Moldova	2002 - 2022
Madagascar	EU - Eastern and Southern Africa States	2002 - 2017
Mexico	EU - Mexico	2002 - 2022
North Macedonia	EU - North Macedonia	2002 - 2022
Malta	EU - Malta	2002 - 2004
Montserrat	EU - Overseas Countries and Territories (OCT)	2002 - 2020
Mauritius	EU - Eastern and Southern Africa States	2002 - 2022
New Caledonia	EU - Overseas Countries and Territories (OCT)	2002 - 2022

Continued on next page

Partner	Agreement	Relevant Period
Nicaragua	EU - Central American Common Market	2013 - 2022
Norway	EU - Norway	2002 - 2022
Palestine	EU - Palestine	2002 - 2022
Panama	EU - Central American Common Market	2013 - 2022
Pitcairn Islands	EU - Overseas Countries and Territories (OCT)	2002 - 2020
Peru	EU - Colombia, Peru and Ecuador	2013 - 2022
Papua New Guinea	EU - Pacific States	2002 - 2022
Poland	EU - Poland	2002 - 2004
French Polynesia	EU - Overseas Countries and Territories (OCT)	2002 - 2022
Romania	EU - Romania	2002 - 2006
Singapore	EU - Singapore	2019 - 2022
St. Helena	EU - Overseas Countries and Territories (OCT)	2002 - 2020
El Salvador	EU - Central American Common Market	2013 - 2022
San Marino	EU - San Marino	2002 - 2022
Saint Pierre and Miquelon	EU - Overseas Countries and Territories (OCT)	2002 - 2022
Suriname	EU - CARIFORUM	2002 - 2022
Slovakia	EU - Slovakia	2002 - 2004
Slovenia	EU - Slovenia	2002 - 2004
Eswatini	EU - SADC	2002 - 2022
Seychelles	EU - Eastern and Southern Africa States	2002 - 2022

Continued on next page

Partner	Agreement	Relevant Period
Turks and Caicos Islands	EU - Overseas Countries and Territories (OCT)	2002 - 2020
Trinidad and Tobago	EU - CARIFORUM	2002 - 2022
Tunisia	EU - Tunisia	2002 - 2022
Türkiye	EU - Türkiye	2002 - 2022
Ukraine	EU - Ukraine	2002 - 2022
St. Vincent and the Grenadines	EU - CARIFORUM	2002 - 2022
British Virgin Islands	EU - Overseas Countries and Territories (OCT)	2002 - 2020
Vietnam	EU - Vietnam	2020 - 2022
Wallis and Futuna	EU - Overseas Countries and Territories (OCT)	2002 - 2022
Samoa	EU - Pacific States	2021 - 2022
Serbia	EU - Serbia	2002 - 2022
South Africa	EU - South Africa	2002 - 2022
Zimbabwe	EU - Eastern and Southern Africa States	2002 - 2022

Appendix V: Summary of Variables

Variable	Source	Explanation
Dependent Variable		
Preference Utilization Rate$_{ijt}$	Eurostat - Comext (2023)	Share of preference-eligible imports into EU member state i from PTA-Partner j in year t entering with preferential tariff-treatment
Independent Variables		
Institutional Quality Composite$_{i(j)t}$	Kaufmann et al. (2011); Gwartney et al. (2022); Miller et al. (2021)	Composite measure of institutional quality combining indicators from the World Bank, Fraser Institute & the Heritage Foundation. Average institutional quality in year t of EU country i **or** PTA-partner country j. Normalized to range from 0 — 10, with higher numbers indicating better institutional quality.
Institutional Quality World Bank$_{i(j)t}$	Kaufmann et al. (2011)	Average institutional quality combining world bank indicators *corruption control*, *government effectiveness*, *regulatory quality* & *rule of law* in year t of EU country i **or** PTA-partner country j . Normalized to range from 0 — 10, with higher numbers indicating better institutional quality.
Institutional Quality Fraser$_{i(j)t}$	Gwartney et al. (2022)	Average institutional quality combining Fraser institute indicators *legal structure and property rights*, *freedom to trade*, *regulation of credit and business*, *access to sound money* in year t of EU country i **or** PTA-partner country j. Normalized to range from 0 — 10, with higher numbers indicating better institutional quality.

Continued on next page

Variable	Source	Explanation
Institutional Quality Heritage$_{i(j)t}$	Miller et al. (2021)	Average institutional quality combining heritage foundation indicators *property rights*, *business freedom*, *economic freedom index*, *financial freedom*, *fiscal freedom*, *monetary freedom*, *investment freedom*, & *freedom to trade* in year t of EU country i **or** PTA-partner country j. Normalized to range from 0 — 10, with higher numbers indicating better institutional quality. Data only available from 2002 - 2021.
ln(GDP p.c.)$_{i(j)t}$	The World Bank (2023b)	GDP per capita of EU country i **or** PTA-parter country j in year t in current USD.
ln(GDP)$_{i(j)t}$	The World Bank (2023a)	GDP of EU country i **or** PTA-parter country j in year t in current USD.
Trade as share of GDP$_{i(j)t}$	The World Bank (2023c)	Sum of exports and imports as share of GPD of EU country i **or** PTA-parter country j in year t in current USD.
Landlocked$_i(j)$		Binary indicator, equal to 1 if EU country i is landlocked, 0 otherwise. In regressions on exporter's institutional quality equal to 1 if PTA-partner country j is landlocked, 0 otherwise.
Post2000EU$_i$		Binary indicator, equal to 1 if EU country i joined the EU after 2000, 0 otherwise.
Common Language$_{ij}$	CEPII GeoDist database; Mayer and Zignago (2011)	Binary indicator equal to 1 if EU country i shares the same official language as partner country j.
Capital Distance$_{ij}$	CEPII GeoDist database; Mayer and Zignago (2011)	Distance in kilometres between capital city of EU member i and capital of partner country j.
Infringement Procedures$_{it}$	Berlin Infringement Database; Börzel (2021)	Number of infringement procedures opened in year t against EU member i.

Appendix VI: Correlation Matrix

Table VII

Correlation matrix of different measures of institutional quality and GDP p.c.

	Importer				
	ln(GDP p.c.)$_{it}$	**Institutional Quality Composite$_{it}$**	**Institutional Quality World Bank$_{it}$**	**Institutional Quality Fraser$_{it}$**	**Institutional Quality Heritage$_{it}$**
ln(GDP p.c.)$_{it}$	1.00				
Institutional Quality Composite$_{it}$	0.78	1.00			
Institutional Quality World Bank$_{it}$	0.79	0.96	1.00		
Institutional Quality Fraser$_{it}$	0.71	0.94	0.9	1.00	
Institutional Quality Heritage$_{it}$	0.71	0.94	0.82	0.84	1.00
	Exporter				
	ln(GDP p.c.)$_{jt}$	**Institutional Quality Composite$_{jt}$**	**Institutional Quality World Bank$_{jt}$**	**Institutional Quality Fraser$_{jt}$**	**Institutional Quality Heritage$_{jt}$**
ln(GDP p.c.)$_{jt}$	1.00				
Institutional Quality Composite$_{jt}$	0.78	1.00			
Institutional Quality World Bank$_{jt}$	0.85	0.92	1.00		
Institutional Quality Fraser$_{jt}$	0.70	0.91	0.79	1.00	
Institutional Quality Heritage$_{jt}$	0.70	0.96	0.80	0.84	1.00

Appendix VII: Baseline Regression Models including GDP p.c.

Table VIII

Preference Utilization Rates across EU MS, 2002-2022: the unit of observation is the EU Memberstate-PTA Partner pair.

	Institutional Quality Importer$_i$				Institutional Quality Exporter$_j$			
DV: Preference Utilization Rate$_{ijt}$	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Institutional Quality Composite$_{i(j)t}$	0.020+				0.073***			
	(0.012)				(0.008)			
Institutional Quality World Bank$_{i(j)t}$		0.027***				0.045***		
		(0.007)				(0.007)		
Institutional Quality Fraser$_{i(j)t}$			0.042*				0.054***	
			(0.018)				(0.007)	
Institutional Quality Heritage$_{i(j)t}$				-0.004				0.043***
				(0.011)				(0.008)
ln(GDP p.c.)$_{i(j)t}$	-0.130***	-0.162***	-0.135***	-0.096***	-0.099***	-0.100***	-0.049***	-0.049***
	(0.023)	(0.023)	(0.023)	(0.021)	(0.006)	(0.007)	(0.007)	(0.007)
ln(GDP)$_{i(j)t}$	0.035***	0.037***	0.034***	0.034***	0.037***	0.041***	0.019**	0.025***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.004)	(0.004)	(0.005)	(0.005)
Trade as share of GDP$_{ijt}$	0.010	0.016	0.010	0.004	-0.059**	-0.051**	-0.103***	-0.099***
	(0.015)	(0.015)	(0.015)	(0.015)	(0.017)	(0.017)	(0.019)	(0.017)
Common Language$_{ij}$	0.038	0.041	0.037	0.035	0.017	0.010	0.023	0.012
	(0.026)	(0.025)	(0.026)	(0.026)	(0.015)	(0.019)	(0.015)	(0.016)
Capital Distance$_{ij}$	-0.095***	-0.098***	-0.096***	-0.090***	-0.095***	-0.095***	-0.082***	-0.087***
	(0.017)	(0.018)	(0.018)	(0.017)	(0.009)	(0.009)	(0.009)	(0.009)
Post 2000 EU Accession$_i$	-0.095***	-0.099***	-0.100***	-0.079***				
	(0.021)	(0.021)	(0.022)	(0.021)				
Landlocked$_{i(j)}$	-0.099***	-0.097***	-0.095***	-0.100***	0.018	0.019	-0.001	0.008
	(0.020)	(0.020)	(0.020)	(0.020)	(0.016)	(0.016)	(0.016)	(0.016)
Num.Obs.	23145	23145	21498	23145	18725	18725	16590	17847
R2	0.377	0.378	0.373	0.377	0.183	0.175	0.136	0.145
Year FEs	✓	✓	✓	✓	✓	✓	✓	✓
Export-Partner FEs	✓	✓	✓	✓				
EU-Importer FEs					✓	✓	✓	✓
Control Variables	✓	✓	✓	✓	✓	✓	✓	✓

$+$ p$<$ 0.1, $*$ p$<$ 0.05, $**$ p$<$ 0.01, $***$ p$<$ 0.001. Standard errors are clustered at the level of the export-partner

Appendix VIII: Robustness Check - Regressions w/o Zeros including GDP p.c.

Table IX

Robustness Check - Preference Utilization Rates across EU MS, 2002-2022: the unit of observation is the EU Memberstate-PTA Partner pair. All zero values observed in PUR have been removed from the estimation. Including GDP p.c.

	Institutional Quality Importer$_i$				**Institutional Quality Exporter$_j$**			
DV: Preference Utilization Rate$_{ijt}$	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Institutional Quality Composite$_{i(j)t}$	0.011				0.009			
	(0.009)				(0.005)			
Institutional Quality World Bank$_{i(j)t}$		0.017**				0.014**		
		(0.005)				(0.004)		
Institutional Quality Fraser$_{i(j)t}$			0.020				0.011*	
			(0.015)				(0.005)	
Institutional Quality Heritage$_{i(j)t}$				-0.003				0.003
				(0.008)				(0.004)
ln(GDP p.c.)$_{i(j)t}$	-0.090***	-0.112***	-0.086***	-0.070***	-0.008	-0.019*	-0.006	-0.002
	(0.016)	(0.016)	(0.017)	(0.015)	(0.006)	(0.007)	(0.006)	(0.006)
Num.Obs.	18449	18449	17188	18449	16084	16084	14697	15733
R2	0.193	0.194	0.189	0.192	0.087	0.088	0.084	0.091
Year FEs	✓	✓	✓	✓	✓	✓	✓	✓
Export-Partner FEs	✓	✓	✓	✓				
EU-Importer FEs					✓	✓	✓	✓
Control Variables	✓	✓	✓	✓	✓	✓	✓	✓

$+$ p$<$ 0.1, $*$ p$<$ 0.05, $**$ p$<$ 0.01, $***$ p$<$ 0.001. Standard errors are clustered at the level of the export-partner

Appendix IX: Complete Regression Table

Table X

Preference Utilization Rates across EU MS, 2002-2022: the unit of observation is the EU Memberstate-PTA Partner pair.

	Institutional Quality Importer$_i$				**Institutional Quality Exporter$_j$**			
DV: Preference Utilization Rate$_{ijt}$	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Institutional Quality Composite$_{i(j)t}$	-0.031**				-0.004			
	(0.010)				(0.005)			
Institutional Quality World Bank$_{i(j)t}$		-0.013*				-0.015***		
		(0.006)				(0.004)		
Institutional Quality Fraser$_{i(j)t}$			-0.039*				0.022***	
			(0.015)				(0.005)	
Institutional Quality Heritage$_{i(j)t}$				-0.038***				0.011*
				(0.010)				(0.005)
ln(GDP)$_{i(j)t}$	0.027***	0.026***	0.026***	0.029***	0.032***	0.037***	0.011*	0.017***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.004)	(0.004)	(0.005)	(0.004)
Trade as share of GDP$_{i(j)t}$	-0.028*	-0.033**	-0.029**	-0.025*	-0.075***	-0.051**	-0.127***	-0.117***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.017)	(0.018)	(0.018)	(0.017)
Common Language$_{ij}$	0.032	0.032	0.034	0.032	0.011	0.013	0.017	0.008
	(0.026)	(0.026)	(0.027)	(0.026)	(0.017)	(0.016)	(0.016)	(0.018)
Capital Distance$_{ij}$	-0.090***	-0.094***	-0.092***	-0.088***	-0.086***	-0.087***	-0.077***	-0.081***
	(0.017)	(0.018)	(0.018)	(0.017)	(0.008)	(0.008)	(0.008)	(0.008)
Post 2000 EU Accession$_i$	-0.012	-0.010	-0.011	-0.007				
	(0.015)	(0.016)	(0.015)	(0.014)				
Landlocked$_{i(j)}$	-0.105***	-0.104***	-0.102***	-0.105***	0.045*	0.042*	0.012	0.017
	(0.020)	(0.020)	(0.020)	(0.020)	(0.017)	(0.017)	(0.017)	(0.017)
Num.Obs.	23145	23145	21498	23145	18798	18798	16622	17879
R2	0.373	0.372	0.369	0.374	0.150	0.154	0.126	0.135
Year FEs	✓	✓	✓	✓	✓	✓	✓	✓
Export-Partner FEs	✓	✓	✓	✓				
EU-Importer FEs					✓	✓	✓	✓
Control Variables	✓	✓	✓	✓	✓	✓	✓	✓

$+$ p$<$ 0.1, $*$ p$<$ 0.05, $**$ p$<$ 0.01, $***$ p$<$ 0.001. Standard errors are clustered at the level of the export-partner

Appendix X: Regression including Importer fixed effects

Table XI

Robustness Test - Preference Utilization Rates across EU MS, 2002-2022: the unit of observation is the EU Memberstate-PTA Partner pair. Estimation including partner-country fixed effects, EU-importer fixed effects, and year fixed effects.

	Institutional Quality Importer$_i$				**Institutional Quality Exporter$_j$**			
DV: Preference Utilization Rate$_{ijt}$	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Institutional Quality Composite$_{i(j)t}$	-0.022				0.038			
	(0.035)				(0.035)			
Institutional Quality World Bank$_{i(j)t}$		0.026				0.016		
		(0.019)				(0.037)		
Institutional Quality Fraser$_{i(j)t}$			0.032				0.013	
			(0.048)				(0.015)	
Institutional Quality Heritage$_{i(j)t}$				-0.034				0.027
				(0.029)				(0.023)
ln(GDP)$_{i(j)t}$	-0.027	-0.057	-0.041	-0.024	-0.026	-0.017	-0.015	-0.021
	(0.050)	(0.056)	(0.057)	(0.052)	(0.048)	(0.051)	(0.049)	(0.046)
Trade as share of GDP$_{i(j)t}$	0.039	0.049	0.042	0.029	-0.065	-0.053	-0.045	-0.028
	(0.041)	(0.039)	(0.039)	(0.041)	(0.065)	(0.064)	(0.071)	(0.064)
Num.Obs.	23145	23145	21498	23145	18798	18798	16622	17879
R2	0.393	0.393	0.389	0.393	0.355	0.354	0.286	0.302
Year FEs	✓	✓	✓	✓	✓	✓	✓	✓
Export-Partner FEs	✓	✓	✓	✓	✓	✓	✓	✓
EU-Importer FEs	✓	✓	✓	✓	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓	✓	✓	✓	✓

$+$ p$<$ 0.1, $*$ p$<$ 0.05, $**$ p$<$ 0.01, $***$ p$<$ 0.001. Standard errors are clustered at the level of the export-partner

Appendix XI: Regression including Infringement Procedures

Table XII

Robustness Test - Preference Utilization Rates across EU MS, 2002-2022: the unit of observation is the EU Memberstate-PTA Partner pair. Estimation including partner-country fixed effects, and annual number of infringement procedures against each EU MS.

	excl. GDP p.c.$_{it}$				**incl. GDP p.c.$_{it}$**			
DV: Preference Utilization Rate$_{ijt}$	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Institutional Quality Composite$_{it}$	-0.041***				0.009			
	(0.009)				(0.011)			
Institutional Quality World Bank$_{it}$		-0.017**				0.024***		
		(0.006)				(0.006)		
Institutional Quality Fraser$_{it}$			-0.057***				0.026	
			(0.015)				(0.017)	
Institutional Quality Heritage$_{it}$				-0.049***				-0.016
				(0.009)				(0.010)
ln(GDP p.c.)$_{it}$					-0.123***	-0.161***	-0.130***	-0.093***
					(0.023)	(0.022)	(0.023)	(0.021)
Infringement Procedures$_{it}$	-0.001**	-0.001*	-0.001**	-0.001***	-0.001*	0.000	-0.001+	-0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Num.Obs.	22711	22711	21064	22711	22711	22711	21064	22711
R2	0.375	0.373	0.370	0.376	0.378	0.379	0.374	0.378
Year FEs	✓	✓	✓	✓	✓	✓	✓	✓
Export-Partner FEs	✓	✓	✓	✓	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓	✓	✓	✓	✓

$+$ p$<$ 0.1, $*$ p$<$ 0.05, $**$ p$<$ 0.01, $***$ p$<$ 0.001. Standard errors are clustered at the level of the export-partner

Appendix XII: EU-ROK Utilization Descriptive Statistics

EU-ROK FTA Descriptive Utilisation Statistics by different degrees of product aggregation		
	Total Observations	%-share per category
HS-Section		
0 < PUR < 1	402	84.63
PUR = 0	66	13.89
PUR = 1	7	1.47
HS-Chapter		
0 < PUR < 1	1,306	70.75
PUR = 0	491	26.60
PUR = 1	49	2.65
HS-Heading		
0 < PUR < 1	5,587	49.83
PUR = 0	4,725	42.14
PUR = 1	900	8.03
HS-Subheading		
0 < PUR < 1	10,636	37.81
PUR = 0	14,284	50.77
PUR = 1	3,213	11.42