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Transparency in Non-Tariff Measures: Effects on Agricultural Trade

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Abstract

Can transparency mitigate the trade-distortive effects of non-tariff measures (NTMs)? This paper explores the trade impact associated with promoting greater transparency in NTMs, using a new database of transparency provisions in over one hundred Regional Trade Agreements (RTAs). The investigation surveys the incidence and scope of transparency provisions in RTAs, and econometrically assesses the trade effects of these instruments on bilateral agricultural and food trade. The findings demonstrate that transparency provisions in RTAs are associated with greater agricultural trade flows, suggesting that transparency should remain an important element of ongoing policy efforts to make NTMs less onerous for trade in agriculture.

JEL classification

Keywords

Transparency, non-tariff measures, agriculture, sanitary and phytosanitary measures, SPS, technical barriers to trade, TBTs, World Trade Organization, WTO, Regional Trade Agreements, RTA.

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1. Introduction

Transparency is an increasingly important component of policies aimed at mitigating the trade-distortive effects of non-tariff measures (NTMs). When non-tariff measures are known to governments, traders and consumers, they become less trade-impeding by virtue of palliating a range of information asymmetries that reduce trade costs and increase predictability. Moreover, public scrutiny arrests the use of NTMs as a disguised form of protectionism, and makes them liable to reform and liberalization. Indeed, transparency creates greater awareness of the costs and benefits of non-tariff measures. When the process of making non-tariff measures is open and participatory, it generates an informed debate on the trade-offs involved in NTMs, assessing the extent to which the welfare effects resulting from mitigating market failures compensates the loss in efficiency gains introduced by distortions. In this regard, the greatest returns to transparency are not just in the form of increased trade flows, but more importantly, better domestic economic policy-making that ultimately improves economic welfare – both domestically and internationally.

Although the benefits of promoting greater transparency in non-tariff measures are widely recognized, the economic effects remain surprisingly under-analyzed. Moreover, the precise meaning of transparency in the context of trade policy discussions is perceived to be somewhat elusive in practice. What do we mean by the “right to know” (Stiglitz 1999), or put differently, “the opposite of secrecy” (Fluorini 1998) in the context of international trade policy? Ostry (1998) describes the norm of transparency in the multilateral trading system as the “most opaque in the trade policy lexicon.” Reflecting this sentiment, Kaufmann (2006) calls for the need for “transparenting transparency” as a necessary step for measuring transparency and assessing its economic impact. In the absence of well-articulated, definitional parameters, the current ambivalence and frequent misuse of the term transparency is diminishing its analytical and policy utility (Michener 2012).

This paper contributes to the literature on non-tariff measures in several ways. First, it surveys the types of policies enshrined in regional trade agreements (RTAs) that are aimed at improving the transparency of NTMs beyond the existing commitments of the World Trade Organization (WTO). While a number of studies have examined transparency-related measures across the multilateral agreements (Ala'l 2008, Biukovik 2008, Steger 2008; Mitchell 2008; Delimatsis 2007; Wolfe 2003; Ostry 1998), the present paper represents the first analysis of corresponding disciplines in regional accords. Second, the paper investigates econometrically the potential trade effects of enhanced transparency provisions on bilateral agricultural and food trade. It explores whether obligations related to the improvements of transparency of NTMs, without actual reforms of these measures, can be trade-enhancing. It uses a new dataset that meticulously records the incidence and scope of WTO-plus transparency commitments in over one hundred RTAs signed over the last decade.

The remainder of the article is structured in four parts. The next section offers a brief overview of the literature on the transparency-trade nexus. Section 3 provides a taxonomy of transparency in international trade treaties and unbundles the different policy instruments that are used to foster transparency of NTMs. Following that, Section 4 surveys the main WTO-plus instruments that have been deployed to promote the transparency of agricultural non-tariff measures in RTAs. Section 5 then looks at the effects of these regional transparency mechanisms on bilateral trade flows of agricultural products. Finally, the last section provides concluding remarks, as well as suggestions for further research.

2. Literature review

While the problems stemming from imperfect information have been avidly pursued in economic research, and have stirred lively debates in monetary policy, they remain largely under-explored in the trade literature. Available evidence on the transparency-trade nexus can be grouped around three camps

corresponding to key channels through which transparency can influence trade performance, namely by creating stronger institutions, lowering market entry costs, and improving trade relations.

Transparency and Institutions

Although there is little quantitative work on transparency as such, there is a burgeoning literature on the links between trade performance and institutional quality more generally. The seminal contribution is Anderson and Marcouiller (2002), who use a gravity model to show that weak institutions impact negatively on trade performance. Their data on institutions covers the existence of impartial and transparent government policies, in addition to the strength of contract enforcement. However, they do not analyze the impact of transparency separately from other factors on good institutions.

Two subsequent papers use a gravity framework to analyze the links between institutions and trade. De Groot et al. (2004) use the World Governance Indicators—which identify six dimensions of governance—as their data source on institutional quality. In line with Anderson and Marcouiller (2002), they find that institutional quality and the existence of similar institutions in trading partners are both correlated with increased trade flows. Similarly, Francois and Manchin (2007) find that stronger institutions are associated not just with increased trade at the intensive margin (more exports of existing products), but also more trade at the extensive margin (exports of new products or trading relationships with new destinations). Their institutional focus is on political economy factors such as the size of government, freedom of trade, protection of property rights, and the extent of business regulation.

Levchenko (2007) uses rule of law data from the World Governance Indicators as his measure of institutional quality. He extends Anderson and Marcouiller (2002) by embedding cross-country differences in contract enforceability in a general equilibrium model of trade. He shows empirically that stronger institutions are associated with a higher degree of trade specialization in “complex” products, i.e. those which are the nexus of a large number of contracts. Similarly, Nunn (2007) finds that contract enforceability—as measured by a country’s judicial quality—is a key determinant of trade flows in

products that require relationship-specific investments. As in Levchenko (2007), examples of such products include those with high proportions of intermediate inputs that require external contracting and sourcing arrangements. Strikingly, he finds that contract enforcement explains more of the pattern of trade observed in the data than physical capital and skilled labor combined.

Transparency and Search Costs

Another strand of the literature focuses on the role of transparency in reducing market search costs. Rauch and Watson (2001) show that learning about foreign markets is an expensive and complex venture. The process of trading entails a costly process of discovering foreign markets. In order to export, a firm must amass a wide range of information on regulatory requirements that it needs to comply with. This search is costly, and often involves hiring technical consultants who can identify and decipher relevant regulations and their compliance costs. Market discovery costs factor into the calculations of a firm's expected profitability and influence its decision to trade. The magnitude of these costs can count towards a non-trivial part of total production costs (OECD 2007).

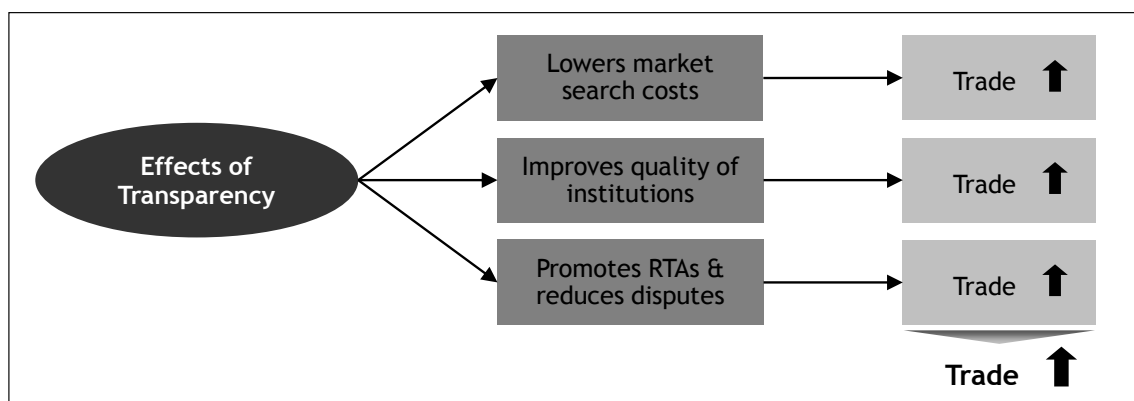
Do firms with better access to information export more? Several studies support this contention. Freund and Weinhold (2004) examine the effects of the internet on trade flows of goods, positing that the internet reduces export costs for the firm by improving their information about foreign markets. With greater use of information technology, suppliers can find information about export markets at lower costs. The study finds empirical support for this theory, showing significant effects on trade growth. In a similar vein, Rauch (1996; 1999) finds that firms with information available through kinship ties in foreign markets register a better export performance than firms which do not have access to preferential channels of information. Roberts and Tybout (1997) demonstrate in a seminal paper that the decision to export to Colombia hinges on the availability of information on the foreign market.

Transparency and Trade Relations

Another channel of influence explores ways in which transparency lubricates trade ties. Baccini (2008) shows that developing countries with stronger levels of transparency have a higher likelihood of forming an agreement with the EU. The author shows that in negotiating an RTA, the EU is likely to target countries that have high political and economic transparency relative to other developing countries. This is partly because compliance can be better monitored among countries with more transparent institutions. Similarly, the study shows that there are a greater number of provisions for flexibility in those RTAs signed with more transparent countries. Moreover, the author finds that more transparent countries enjoy more flexibilities and technical cooperation.

Conversely, lower levels of transparency lead to a greater incidence of disputes among trading partners. Ala'I (2008) shows that there has recently been an exponential increase in the number of disputes that allege transparency claims in the WTO. That complainants increasingly invoke transparency obligations suggests that non-compliance with informational and due process requirements impairs trade flows. Tracing the legal interpretation of transparency provisions in trade jurisprudence, the study documents how transparency has emerged from being considered a “subsidiary” provision to a “substantive” one creating fundamental obligations. Hence, violations of transparency among trading partners are increasingly a source of costly dispute proceedings.

Figure 1. Effects of transparency on trade



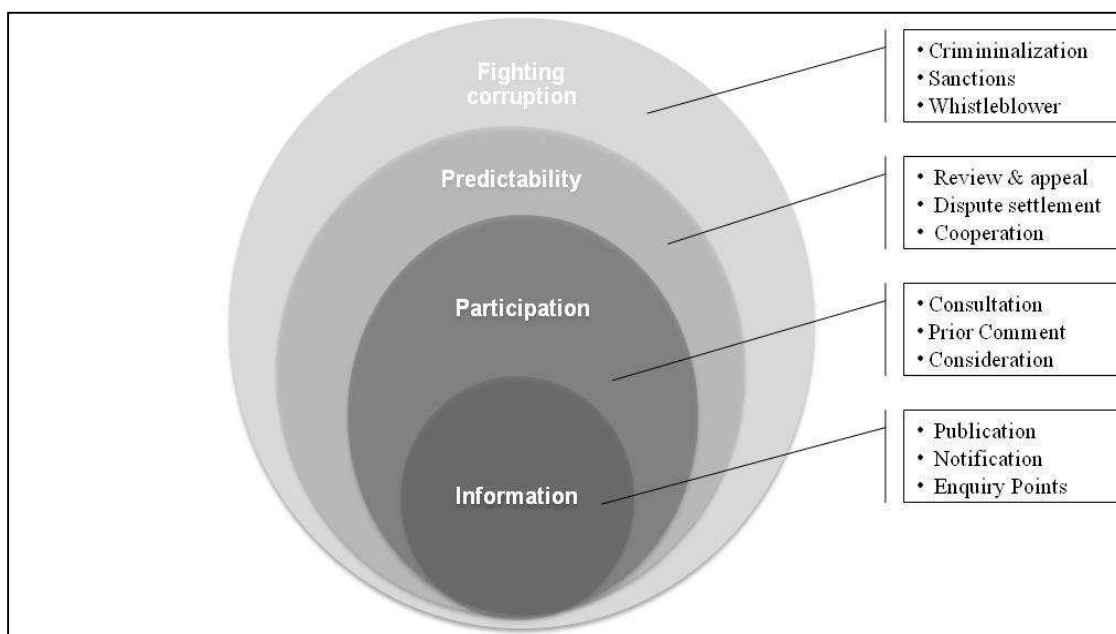
3. Taxonomy of Transparency in Trade

Along with the principles of national treatment and most-favoured nation treatment, transparency constitutes one of the central pillars of the global trading system. Yet, while the importance of transparency is widely extolled, its precise meaning is not explicit. The GATT/WTO agreements have never specifically defined the norm, so that it can be subject to multiple uses. The WTO Glossary indicates that transparency is the “degree to which trade policies and practices, and the process by which they are established, are open and predictable.” More specifically, the WTO Analytical Index closely links transparency to notifications. The term “internal transparency” generally refers to practices among WTO Members to exchange information on relevant measures. In addition, the term is also used to refer to the procedures governing the internal decision-making processes of the WTO, such as inclusion of all Members in the negotiations. At a different level, “external transparency” refers to the relations of the WTO with non-governmental organisations (NGOs) and other civil society groups. Hence, even within the WTO arena, transparency can mean different things in different contexts.

Table 1 displays several definitions and indicators that have been developed to measure transparency in trade and investment. Each of these indicators focuses on different issues of transparency, exemplifying a wide array of ingredients that are interrelated, yet distinct from one another. The connotations of transparency embedded in these trade-related indices relate to freedom of information (Islam, 2003), simplification of procedures and predictability (Helble et al. 2009), levels of corruption (Transparency International), government policy-making (World Economic Forum), and the rule of law (Kaufmann, 2005). Other transparency indicators focus on the quality of democracy, voice and accountability, and logistics performance to proxy transparency. In view of the foregoing, it is useful to scope more precisely the elements of transparency in terms of the levers that are negotiated in an international trade policy context.

One way to define the norm of transparency as it relates to international trade relations is to ask the question: What do governments negotiate when they negotiate transparency obligations for non-tariff measures? What specific instruments are governments creating, and for what purpose? The answer to this question has evolved over time, yielding four facets of transparency on non-tariff measures: disclosing information on NTMs, influencing their policy-making process, ensuring predictability in their application and minimising the expropriation risks. Not surprisingly, the evolving iterations of transparency have gone hand-in-hand with the increasing complexity of trade policy. As the trade agenda becomes primarily concerned with non-tariff measures that are predominantly of a behind-the-border, domestic regulatory nature, the commitments on transparency are becoming broader and more sophisticated.

Figure 2. Taxonomy of transparency in trade treaties



A. Publication of information: Availability, accessibility and inferability

The genesis of transparency in multilateral trade disciplines relates to the information function of governments. Article X of the General Agreement on Tariffs and Trade (GATT) (1947, remaining unchanged in GATT 1994) on the *Publication and Administration of Trade Regulations* instructs

Table 1. “Unbundling” transparency: definition and measurement

Author (year)	Definition of Transparency	Indicator on Transparency
Ala'i (2008)	A measure of the degree of which information about official activity is made available to an interested party.	---
Helble et. al (2009)	Predictability (reducing the cost of uncertainty) and simplification (reducing information costs) of procedures.	Exporter/Importer Transparency constructed from Logistics Performance Index, GCR, Doing Business data
Hollyer et al (2011)	Level of government collection and dissemination of data.	Transparency Index based on country reporting/non-reporting of 172 variables on economic policy.
IMF (1999)	Environment in which objectives of policy, its legal, institutional & economic framework, policy decisions and their rationale, data and information related to monetary/financial policies and the accountability of policy-making body are provided to the public in an understandable, accessible and timely basis.	---
Islam (2003)	Quality of information flows, i.e. how much information governments are willing to disclose.	Information Index based on existence of freedom of information laws; Transparency Index measuring frequency with which economic data are published.
Kaufmann (2005)	Increased flow of timely and reliable economic, social and political information, which is accessible to all relevant stakeholders.	Aggregate Transparency Index constructed from a wide range of variables on Economic and Institutional Transparency as well as Political Transparency.
Mitchell (1998)	Acquisition, analysis, and dissemination of regular, prompt, and accurate regime-relevant information	---
OECD (2002b)	Environment under which economic agents possess essential information about the environment in which they operate and search costs and information asymmetries do not pose an undue burden on them.	---
Price Waterhouse Coopers (2002)	Opacity is defined as the lack of clear, accurate, formal, easily discernible and widely accepted practices.	Opacity Factor calculated by averaging components of corruption, legal system regulatory regime, government policies and accounting standards, based on survey.
Transparency International (www.transparency.org)	Characteristic of governments, companies, organisations and individuals of being open in the clear disclosure of information rules, plans, processes, and actions. Principle that allows those affected by administrative decisions, business transactions or charitable work to know not only the basic facts and figures but also the mechanisms and processes.	Corruption Perceptions Index (CPI) based on perceived levels of corruption, as determined by expert assessments and opinion surveys.
World Economic Forum (2010)	Ease of obtaining information about changes on government policies and regulations that affect the economic activities of businesses.	Transparency of Government Policy-Making based on perceived access to information from executive survey.
WTO Glossary (www.wto.org)	Degree to which trade policies and practices, and the process by which they are established, are open and predictable.	---

governments to supply information on regulations, via “prompt publication” or other available means. Complementing publication, multilateral agreements have furnished two additional mechanisms to promote the flow of information among trading partners: notification requirements and enquiry points. There are more than two hundred notification requirements dispersed in WTO agreements, and each main policy area provides for enquiry points.

In Regional Trade Agreements (RTAs), countries have taken the spirit of the informational functions of Article X and have tried to enhance the effectiveness of information disclosure. It is noteworthy that the main transparency mechanism of the WTO – notification – is hardly used in regional agreements. Enquiry points are provided for in RTAs, and in some cases are not confined to inter-ministerial exchanges between the countries, but are also explicitly mandated to respond to queries from the private sector and other interested parties.

The majority of specifications that have been deepened in RTAs relative to WTO agreements are aimed at ensuring a more effective delivery of information. In particular, the design of commitments on information disclosure provides operational details for the following questions:

- What information should be made available (e.g. lists of regulations, data)?
- Who should make the information available, and to whom (e.g. industry)?
- When should it be made available (e.g. specific timeframe prior to entry into force)?
- How should such information be made available (e.g. website, translation, explanations)?
- For what purpose should it be made available (e.g. rationale for regulation)?

Underlying many of these specifications is the recognition that information should not just be available, but also accessible and inferable for governments, firms and other stakeholders to take advantage of it. Simply making information available – when it is not relevant, verifiable, accessible, timely or usable – may not contribute to enhancing the degree of transparency. Hence, RTAs strive to

ensure that information disclosure is delimited, complete, easy to locate, and can be used by traders. Finally, some RTAs broaden both the suppliers and the recipients of information.

B. Participation in decision-making: Openness, inclusiveness and influence

The second wave of transparency in multilateral agreements was motivated by the realization that beyond making the rules of the game available, it was also important to encourage that the rule-making per se be open to participation and influence from interested parties. The Standards Code of the Tokyo Round broke new ground on transparency by enabling interested stakeholders to scrutinize and provide input into the design of new technical regulations. While these practices were replicated in the TBT and SPS Agreements, stakeholder participation has not been uniformly institutionalized across all WTO agreements. In the case of services, for instance, the General Agreement on Trade in Services (GATS) does not contain procedures that give the opportunity for comments.

In many RTAs, procedures for more open and participatory decision-making are reinforced and applied horizontally across all sectors and measures covered by the agreement, including services. Generally, they afford foreign parties an opportunity to provide feedback into domestic regulations that may affect their interests. Regional commitments introduce more specific operational details to ensure that the implementation of the public comment process delivers a meaningful vehicle for interested stakeholders to influence policy-making. The following considerations are addressed in some RTAs:

- Does the government articulate a policy objective for the proposed measure?
- To what extent is the process open to all stakeholders, including foreign parties?
- How much time is allowed for the public comment process?
- How are public comments taken into account by the decision-making authority?
- Is the public discussion process open (e.g. are public comments published)?

The emphasis of RTAs on participation and inclusiveness underscores the efforts in promoting a shared understanding of costs and benefits associated with domestic measures affecting trade, stimulating a discussion of whether social objectives are being pursued with the least trade restrictive policies. More broad-based participation may also provide a counterweight to domestic sectional interests and enable governments to engage in negotiations and market opening reforms of NTMs.

C. Predictability: Review and appeal, enforcement of rules and co-operation

The third sphere of transparency is to ensure predictability in the application and enforcement of trade-related rules. Article X and various WTO agreements provide recourse in the application and enforcement of rules, including a right to review and appeal administrative decisions to independent tribunals on matters subject to WTO provisions. The dispute settlement understanding (DSU) of the WTO plays an important role in safeguarding the predictability of the global trading systems.

With few exceptions, RTAs often do not have strong and active dispute settlement mechanisms. Perhaps as a result, there is a greater reliance on other procedures to provide certainty that the rules will be adequately administered and enforced. Some of them include “soft” enforcement mechanisms, such as co-operation, peer review, or stocktaking via committee structures. The following issues are typically addressed in the design of regional instruments to infuse predictability:

- Do foreign parties have recourse to review and administrative action?
- Are commitments in the agreement subject to a dispute settlement mechanism?
- Are there other structures (committees, peer review system) to facilitate enforcement?
- Are there co-operation mechanisms (including with foreign counterparts) for implementation?

If the rules of the game are available and the rule-making process is legitimate, but the enforcement is not credible or predictable, that diminishes the utility of the first two dimensions of transparency. To a large extent, RTAs serve as legal bridges to provide certainty and predictability in

bilateral trade exchanges, so that enforcement mechanisms – hard or soft – can play an important role. These also facilitate the implementation (and utility) of these agreements.

D. Fighting corruption and bribery

One of the most remarkable manifestations of how regional agreements have pushed the boundaries of the transparency agenda in trade is the inclusion of new commitments to fight corruption and bribery. Although many multilateral rules can contribute to dissuading bribery and corruption, obligations to combat corruption do not have precedents in the agreements of the WTO.

In a wide selection of RTAs, anti-corruption and anti-bribery commitments form an integral part of the transparency chapter. This trend started with the US-Morocco agreement signed in 2004, which first introduced measures to fight corruption in a transparency chapter, and has subsequently extended to a significant number of regional agreements over the last decade. The main issues that are addressed in these provisions are aimed at encouraging compliance concerning the following questions:

- Does the country adhere or implement international conventions on anti-corruption/-bribery?
- Do laws or other national measures establish corruption as a criminal offence?
- Are there penalties and procedures to enforce criminal measures?
- Are enterprises liable to dissuasive non-criminal sanctions?
- Is there whistleblower protection for individuals who expose corruption?

That these measures are integrated into a chapter on transparency suggests that countries consider these measures an important tool to strengthen the trade policy transparency agenda, complementing the other three dimensions that also serve to reduce, but not forcefully combat, corruption. Corruption, including bribery, represents a “hidden tariff” which distorts resource allocations and creates inefficiencies. When tariffs are hidden, firm cannot incorporate them in the expected profitability calculation, and this uncertainty can be more trade-deterrent than the effects of visible trade costs.

4. Regional Agreements Vehicles for Promoting Transparency in NTMs

Regional Trade Agreements can be credited for introducing new instruments that deepen and expand corresponding trade agreements in the WTO (henceforth, “WTO-plus”). Arguably, countries are deploying trade agreements not just to liberalize or reform non-tariff measures, but to gain more visibility and predictability in their application. For instance, it is noteworthy that transparency of NTMs emerges as one of the core objectives manifested in the preambles of key chapter on non-tariff measures, such as sanitary and phytosanitary measures (SPS) (Table 2). This is in stark contrast with the preambles of GATT/WTO agreements covering agricultural NTMs, which are silent about transparency.

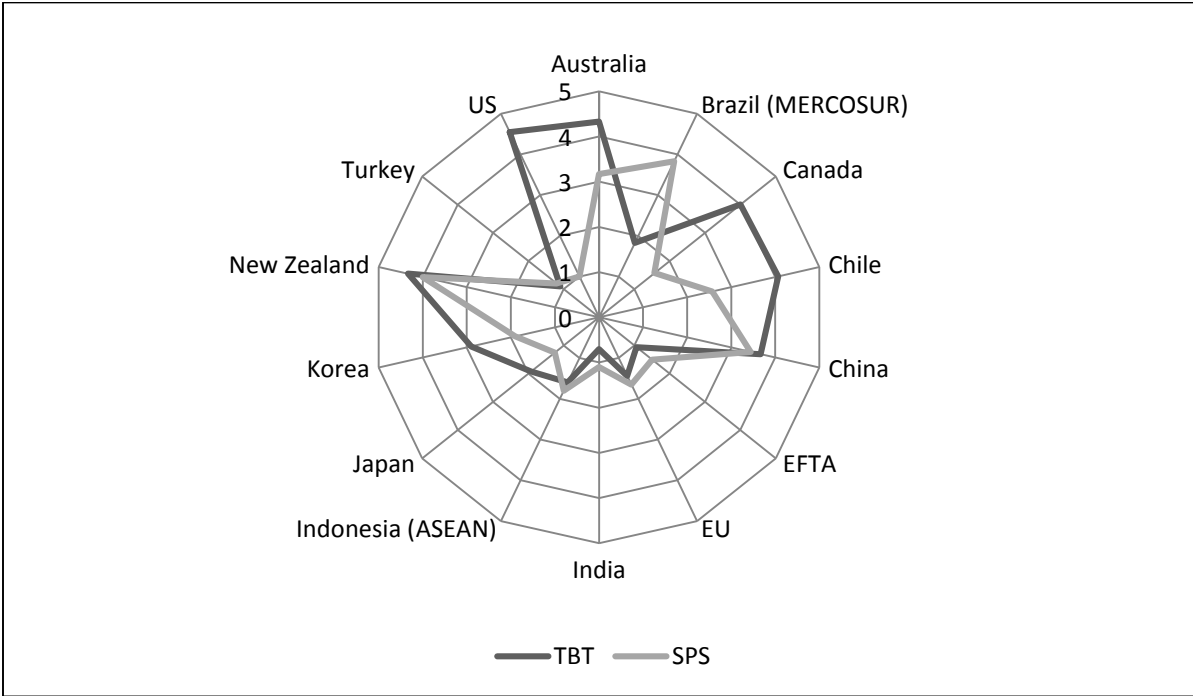
Table 2: Examples of Transparency in Preambles of SPS Chapters of RTAs

Agreement	Preamble to Treaty
GATT, AoA, SPS, TBT	No reference to transparency as objective of the agreements
Chile-Panama FTA, (2006), SPS Chapter	<i>The objective of this chapter is to establish a mechanism to strengthen transparency related to SPS measures; provide mechanisms of communication and cooperation.</i>
China-Peru FTA, (2009), SPS Chapter	<i>Strengthen mechanisms, communications and cooperation between government agencies and deepen mutual understanding of each other's regulations and procedures</i>
ASEAN-Australia-New Zealand FTA (2010), SPS Chapter	<i>Objectives of chapter are to provide greater transparency in and understanding of the application of each party's regulations and procedures relating to SPS measures.</i>

The drive for introducing WTO-plus transparency commitments has been headed by a number of OECD countries, notably the United States, Australia, New Zealand and Canada, although new emerging economies, such as China, are also adopting new transparency mechanisms in their RTAs. North-South RTAs have higher transparency commitments than North-North RTAs, seemingly reflecting that lack of transparency of NTMs in less developed countries is a key market access problem. Figure 3

records the average number of WTO-plus provisions for key NTMs affecting agriculture namely SPS and TBT measures in the RTAs signed by OECD and major emerging economies.

Figure 3: Average number of WTO-plus transparency obligations in NTMs



Preferential, or MFN?: Anti-Spaghetti Bowl Effects of Transparency Disciplines

Any reflection on the proliferation of RTAs raises the guard against the adverse effects of discrimination. A multiplicity of different regional and bilateral NTM regimes introduces a wide range of economic inefficiencies, particularly in a complex context of global supply networks. In some cases RTAs can hinder progress towards multilateral liberalization, by virtue of countries’ incentives to preserve a preferential regime. Furthermore, regional rules on NTMs can generate inconsistencies with WTO agreements that complicate the trading system. Although these concerns are reasonable for a wide range of NTMs, the nature of transparency largely dispels these risks. Measures on transparency of NTMs, rather than the NTMs themselves, are unlikely to generate “Spaghetti Bowl” problems.

A distinguishing feature of WTO-plus transparency commitments in RTAs is that they share the characteristics of public goods, particularly in that they are non-excludable and non-exhaustible. One of the main components of WTO-plus features refers to “electronic transparency,” whereby the publication of regulations has to be made via internet, and in some cases with English translations of the law or the summary. This creates a more modern and universal supply of transparency than what is provided in the WTO, where publication requirements can be fulfilled with a domestic gazette that could be hard to access for foreign parties. Revealingly, some RTAs also provide that information be delivered to foreign parties at no cost, so that there are no implicit sources of discrimination on the basis of the costs of acquiring information. Furthermore, public comment and other participatory decision making procedures are open to any interested domestic and foreign party, including those in non-RTA countries. Similarly, WTO-plus measures concerning the predictability in the application of the rules, such as appeal procedures and anti-corruption laws, entail far-reaching domestic reforms and institutions that serve all market participants in the country, and not just parties to the RTA. Therefore, it is not feasible or practicable to implement these WTO-plus transparency mechanisms on a discriminatory basis. In sum, even if WTO-plus transparency obligations in RTAs may be considered to be *de jure* preferential by virtue of being inscribed in an RTA, they are *de facto* extended on a most-favored nation basis

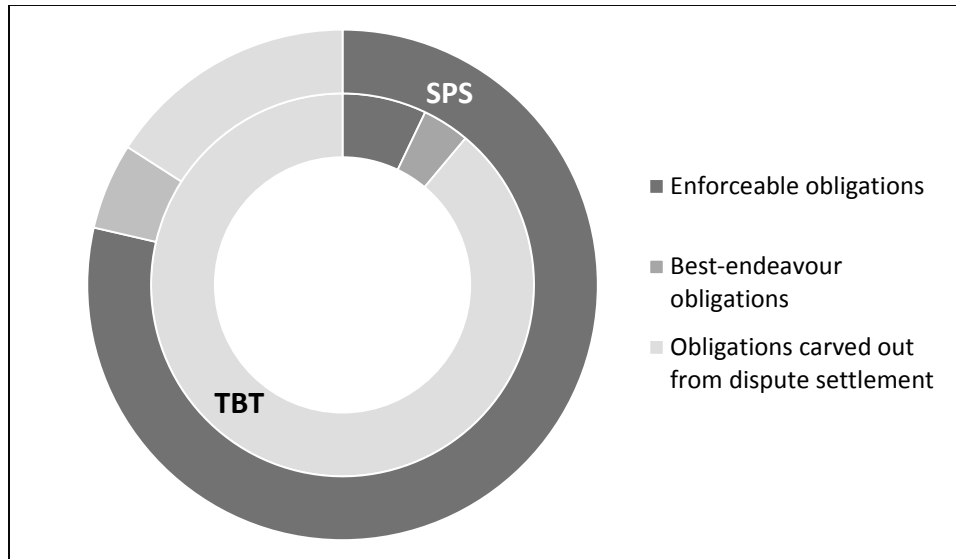
More than Lip Service: Enforceability of WTO-plus Transparency Commitments in RTAs

While the provisions contained in RTAs promise to deliver greater doses of transparency on NTMs, the question arises as to what extent WTO-plus procedures are being implemented in practice. In other words, are governments merely paying lip service to transparency, or are they credibly committing to institutionalizing these mechanisms domestically? One way to assess the likelihood of implementation of WTO-plus transparency provisions is to examine their legal enforceability. If countries are only weakly committed to instituting enhanced procedures for transparency, and

corresponding WTO-plus provisions cannot be appropriately enforced, their implementation may remain elusive. Accordingly, we record whether each WTO-plus transparency provisions creates a clear binding obligation for the parties, on the one hand, or whether it is cast in best-endeavor terms, on the other. In either case, if WTO-plus transparency provisions are contained in treaties or sections of treaties that are not subject to a dispute settlement mechanism, we consider that their implementation is uncertain. In the case of North-South agreements, if there is special and differential treatment governing the application of WTO-plus transparency commitments, we similarly record that it is not certain that such procedures have been put in place on the part of the less developed party.

Remarkably, transparency provisions for non-tariff measures on agricultural products show a relatively high likelihood of implementation. It bears recalling that agricultural products can be governed by both sanitary and phytosanitary measures, (SPS) and technical barriers to trade (TBTs), and hence there is no clear-cut correspondence between the type of these NTMs and product; notwithstanding this fact, nearly all SPS measures apply to agricultural products, while a relatively higher share of TBTs apply to non-agricultural goods. In this regard, there is a stark contrast between the level of enforceability of transparency provisions for SPS and TBT, respectively. Over two-thirds of WTO-plus transparency provisions for SPS create legally binding obligations that are liable to dispute settlement. In contrast, while there is a higher number of WTO-plus transparency TBTs relative to SPS, they are often carved out from the dispute settlement mechanism provided for in the agreement. In both areas, however, there is a very low incidence of transparency provisions cast on a best-endeavor, voluntary basis. Less than 5 per cent of the RTAs have special and differential treatment for less developed trading partners with respect to the WTO-plus transparency commitments.

Figure 4: Enforceable Transparency Provisions for NTMs



That countries consider the enforcement of transparency obligations a priority for SPS measures relative to TBTs may be explained by the health-related risks associated with non-compliance. In effect, failure to provide timely, accurate and clear information on SPS risks is likely to entail dire consequences for human and animal health, whereas the costs of non-transparency in TBTs are of a different order. Indeed, most of the WTO-plus measures on SPS issues appear to pertain to transparency and procedural issues, rather than to the measures themselves. Furthermore, countries not only think that transparency measures need to be strengthened, but they signal a low degree of latitude in tolerating non-compliance with these requirements. The active role that many regional SPS committees devote to promoting transparency, and the technical assistance that is channeled to improving mechanisms for the exchange of information, attests to the importance countries are attaching to operationalising procedures to increase the transparency of non-tariff measures.

3. Empirical Impact of Transparency Commitments in RTAs

What are the effects of WTO-plus transparency provisions on trade flows? Increasing the levels of transparency on non-tariff measures may well be desirable, but it entails costs – financial, administrative and political. Hence, it is reasonable to question whether governments should spend their negotiation capital introducing transparency arrangements in RTAs, which will potentially render the negotiation and operation of trade agreements more lengthy and cumbersome. As noted above, the empirical relationship between transparency and trade flows has not been widely explored, although the few previous results (Helble et al., 2009) suggest that increasing trade-related transparency is associated with higher trade flows within APEC countries. Even if a positive relationship between trade and transparency were generalizable, one may still ask whether RTAs would be the appropriate instrument for generating trade-enhancing transparency. Are transparency mechanisms in RTAs effective vehicles for promoting agricultural trade flows between the countries?

In order to gain insights on the economic impact of negotiating transparency mechanisms in regional accords, we explore whether a greater number of transparency provisions in RTAs is associated with stronger bilateral trade flows. Do country pairs that include a greater number of transparency provisions in their RTAs trade more? We proxy the “transparency-intensity” of trade agreements by a frequency count of transparency provisions for non-tariff measures included in each RTA. That is to say, RTAs with a greater number of transparency clauses are considered to be more transparency-enhancing. It is important to recall that our analysis is based on the legal texts of the agreements, and does not evaluate the implementation of transparency commitments contained in an RTA. Still, given that most transparency requirements generate legally binding obligations that are enforceable via dispute settlement, it is reasonable to assume that these measures are generally being implemented. Moreover, we only look at RTAs signed by OECD and major emerging economies, which have a greater likelihood of

implementing transparency procedures. Finally, all transparency commitments are treated equally, since it is difficult to discern which types of provisions may be more transparency-enhancing. In any case, since we only cover RTAs of OECD and selected emerging economies, there is a high degree of similitude between the transparency provisions across these RTAs.

Description of data

We use a new dataset of transparency provisions signed by OECD countries and five major emerging economies (Brazil, China, India, Indonesia, and South Africa) over the last decade, spanning from 2001 to 2011. A total of 112 RTAs have been signed by OECD countries and these five emerging economies, both among themselves and with other trading partners. Under RTAs we include all free trade agreements, economic partnership agreements, and other preferential trade treaties. We focus however on bilateral RTAs, implying that the sample does not incorporate customs unions such as MERCOSUR, but does cover bilateral agreements signed between a customs union and another party (e.g., MERCOSUR-Peru FTA).¹ Roughly, our sample represents less than half of total RTAs worldwide

While there is widespread coverage of trading partners and regions in the sample, it is largely biased towards the most affluent economies. There is a large representation of 125 countries from all regions of the world among the trading partners represented in the RTAs of OECD countries and emerging economies; all but ten of the countries are Members of the WTO. In terms of level of income, about 35% of total trading partners of OECD countries consist of other high-income economies. Most of the rest of the countries in the sample are middle income economies, with 33% being upper-middle income and 22% being lower middle income economies. Less than 10% of the trading partners in this sample are low income economies, and in most instances, these countries are party to an RTA through a

¹ In the dataset, each member of a customs union appears as a single observation, so the observational unit remains the country dyad. However, we do not observe transparency scores for customs unions, so intra-customs union trade—such as intra-EU trade—is dropped from the sample. Expansion of the transparency dataset to include customs unions is a possible avenue for future research.

regional grouping (e.g., ASEAN, or CARIFORUM). All in all, there is a very low representation of low-income economies, and the results our analyses can generate should be interpreted accordingly.

Specification and Estimation

We use a standard gravity model augmented with data on transparency to assess the impact of including transparency provisions on agricultural trade, compared with an implied counterfactual scenario in which an RTA between two trading partners does not contain transparency provisions. The analysis looks at different trade-related transparency clauses across the RTA (e.g., related to SPS/TBT, rules of origin, etc.), to discern which ones have a greater impact on agricultural trade. The fact that we limit our estimation sample to countries that already have an RTA in place means that we are able to identify the impact of including transparency commitments relative to their non-inclusion.

The gravity model is the workhorse of empirical international trade. In addition to strong explanatory power, the gravity model now also has sound microeconomic credentials in the form of a number of underlying theories that give rise to gravity-like equations. The standard benchmark in the literature is currently the “gravity with gravitas” model of Anderson and Van Wincoop (2003). Their gravity equation takes the following form:

$$(1) \log(X_{ij}) = \log(E_j) + \log(Y_i) - \log(Y^W) + (1 - s) \log(t_{ij}) - (1 - s) \log(P_j) - (1 - s) \log(\Pi_i) + e_{ij}$$

where: X_{ij} is exports from country i to country j ; E_j is expenditure in country j ; Y_i is production in country i ; Y^W is total world production; t_{ij} is bilateral trade costs; s is the intra-sectoral elasticity of substitution (between varieties within a sector); and e_{ij} is a random error term satisfying standard assumptions. The P_j and Π_i terms represent multilateral resistance, i.e. the fact that trade patterns are determined by the level of bilateral trade costs relative to trade costs elsewhere in the world.

Inward multilateral resistance $(P_j)^{(1-s)} = \sum_{i=1}^N (\Pi_i)^{(s-1)} w_i (t_{ij})^{(1-s)}$ captures the dependence of country j 's imports on trade costs across all suppliers. Outward multilateral resistance $(\Pi_i)^{(1-s)} = \sum_{j=1}^N (P_j)^{(s-1)} w_j (t_{ij})^{(1-s)}$ captures the dependence of country i 's exports on trade costs across all destination markets. The w terms are weights equivalent to each country's share in global output or expenditure.

To operationalize the model, a specification is needed for the trade costs function t_{ij} . It is common in the gravity literature to include a range of data on geographical and historical factors that are believed to influence trade costs, and we follow that approach here. We include international distance as a proxy for transport costs, and dummy variables for countries that are geographically contiguous, those that share a common official language, those once in a colonial relationship, and those that were colonized by the same power. Although we have also estimated models in which the trade costs function includes effectively applied tariffs, missing entries in the TRAINS database mean that the sample size is greatly reduced and results are correspondingly less precise and often lack statistical significance. We therefore report results based on models without tariffs in order to preserve sample size and obtain the most precise estimates we can with the available data.

Based on the evidence reviewed above, we hypothesize that transparency provisions in RTAs have the potential to influence trade costs. We therefore also include in the trade costs function various measures of transparency drawn from the dataset described above. For expositional clarity, we simply refer to a generic transparency measure *Transparency* in the equations. Bringing together the various elements of the trade costs equation gives:

$$(2)t_{ij} = b_1 \text{Transparency}_{ij} + b_2 \log(\text{Distance}_{ij}) + b_3 \text{Contig}_{ij} + b_4 \text{CommonLanguage}_{ij} \\ + b_5 \text{Colony}_{ij} + b_6 \text{ComCol}_{ij}$$

Since the data we are primarily interested in, *Transparency*, vary in the country pair dimension, we can follow the recent gravity literature in using fixed effects to control for unobserved multilateral resistance, as well as expenditure and output. By including a full set of fixed effects by exporter and by importer, these effects are fully accounted for in the model without the need to directly estimate the relevant terms from the structural model. Combining (1) and (2) and replacing relevant terms with fixed effects gives our estimating equation:

$$(3) \log(X_{ij}) = c_0 + \sum_{i=1}^N f_i + \sum_{j=1}^N f_j + c_1 \text{Transparency}_{ij} + c_2 \log(\text{Distance}_{ij}) + c_3 \text{Contig}_{ij} \\ + c_4 \text{Comlang}_{ij} + c_5 \text{Colony}_{ij} + c_6 \text{ComCol}_{ij} + e_{ij}$$

where c_0 is a constant term, the f_i terms represent exporter fixed effects, the f_j terms represent importer fixed effects, and the reduced form coefficients $c_k = (1 - s)b_k$. Data and sources for each variable in the model are described in full in Table 3. Bilateral trade data are for 2009 and cover all trading relationships included in the RTA database.

Traditionally, models like (3) have been estimated by ordinary least squares (OLS). However, recent research has called this approach into question. Santos Silva and Tenreyro (2006) show that it suffers from two important defects. First, multiplicative heteroskedasticity in the original non-linear model can result in biased parameter estimates under log-linearized OLS. Second, taking logarithms excludes observations for which $X_{ij} = 0$. To deal with both problems, we follow Santos Silva and Tenreyro (2006) in using the Poisson Pseudo-Maximum Likelihood estimator. It is important to note that Poisson gives consistent parameter estimates regardless of the actual distribution of the data—they need not follow a Poisson distribution at all—and has been shown in simulations to perform well against feasible alternatives when the pattern of heteroskedasticity is unknown and the proportion of zeros in the bilateral trade matrix is potentially large (Santos Silva and Tenreyro, 2011). Although some authors

(e.g., Martin and Pham, 2008) have argued that Poisson can perform poorly in the presence of large numbers of zeros, their simulation approach is flawed for the reasons set out by Santos Silva and Tenreyro (2011): in particular, their data generating process is inconsistent with a constant elasticity model like gravity. The published research currently strongly favors Poisson as a workhorse quasi-maximum likelihood estimator, as opposed to feasible alternatives. A different approach is taken by some authors, namely the Heckman sample selection model (Helpman et al., 2008). That approach also makes it possible to include zeros in the estimation samples, by assuming that positive and zero trade observations are drawn from different but related models. The main disadvantage of this approach is that it requires strong distributional assumptions in order to be consistent, whereas Poisson is consistent under much weaker assumptions. We therefore prefer Poisson here.

Results and Discussion

Table 4 reports results using alternative measures of transparency applied to agricultural and food trade. Column 1 is our baseline model, in which we use the total number of transparency provisions in an RTA (on agriculture and related non-tariff measures) as our measure of transparency. All control variables have coefficient signs and magnitudes that accord well with the previous literature. Only the common colonizer dummy has a coefficient that is statistically insignificant, probably due to the very small number of observations for which that variable is equal to unity. Overall, the model performs very strongly, accounting for around 84% of the observed variation in the dependent variable. Most importantly, our transparency indicator has a positive and 10% statistically significant coefficient, which indicates that a greater number of transparency provisions in an RTA is associated with stronger agricultural trade flows between countries. Concretely, adding an extra transparency provision in an RTA increases agricultural trade by 1.6%.

The remaining columns of Table 4 present results using alternative, more disaggregated measures of transparency. Of the 12 measures tested, four result in positively signed and statistically significant coefficients, which is consistent with a positive impact of those types of transparency measures on bilateral agricultural trade. In particular, the inclusion of horizontal transparency measures in a separate, transversal chapter in an RTA tends to be associated with higher flows of agricultural trade; revealingly, horizontal measures have greater trade-boosting effects than agriculture-specific transparency measures, namely those contained in the chapter on agriculture, SPS, and TBTs, which are not statistically significant. From a policy perspective, crafting transparency mechanisms for all non-tariff measures may be more effective than regulating transparency by sector or type of non-tariff measure. In the same vein, two other significant coefficients relate to transparency measures that are more horizontal in nature: strengthening the dispute settlement resolution and administrative functions. Those provisions aim at ensuring predictability in the application of the rules by proper administration and at enforceability mechanisms. Finally, transparency related to trade remedies emerges as an element that can boost agricultural trade.

4. Concluding remarks and future research

The results suggest that transparency should remain an important agenda item for addressing NTMs. Although the analysis is based on RTAs, it is likely that transparency norms more broadly are trade promoting. As such, there is a clear interest for new generation trade agreements to include comprehensive disciplines on transparency for NTMs. The empirical analysis demonstrates that transparency provisions in RTAs are indeed associated with greater trade flows. The empirical results demonstrate that horizontal provisions, as opposed to agriculture-specific SPS/TBT provisions, are associated with the largest trade effects.

The results also point to avenues for further research. Given the focus on RTAs signed by OECD and large emerging economies, it is not possible to generalize these findings to South-South RTAs, even though a small number of such agreements were included in the sample. Hence, it may be useful for future work to examine a wider selection of RTAs among developing countries. Second, it is possible that the effects of transparency provisions on trade flows vary across sectors. Further work may benefit from a wider disaggregation of sectors, in order to investigate if trade in particular types of agricultural and food products is more sensitive to transparency than others. Third, from the point of view of discerning trade creation effects of it would be relevant to distinguish the effects of transparency on boosting existing trade flows (the intensive margin) from the creation of new trade (the extensive margin). This would require modeling an explicit process of the decision to export, and would necessitate the use of other econometric estimation methods, such as sample selection models.

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Table 3: Variables and sources

Variable	Description	Source
Colony	Dummy variable equal to unity for countries that were once in a colonial relationship.	CEPII.
ComCol	Dummy variable equal to unity for countries that were colonized by the same power.	CEPII.
CommonLanguage	Dummy variable equal to unity for countries that share a common official language.	CEPII.
Contig	Dummy variable equal to unity for countries that share a common land border.	CEPII.
Distance	Great circle distance between the main cities of two countries.	CEPII.
Imports	Bilateral imports of agricultural products. 2009.	WITS- Comtrade.
Transp. Admin.	Total number of transparency provisions on administration of the agreement in an RTA.	OECD.
Transp. Chapter	Dummy variable equal to unity if an RTA contains a chapter on transparency.	OECD.
Transp. Coop.	Total number of transparency provisions on cooperation and strategic partnerships in an RTA.	OECD.
Transp. Customs and TF	Total number of transparency provisions on customs and trade facilitation in an RTA.	OECD.
Transp. Disputes	Total number of transparency provisions on dispute settlement in an RTA.	OECD.
Transp. General Provisions	Total number of general transparency provisions in an RTA.	OECD.
Transp. Goods	Total number of transparency provisions on goods in an RTA.	OECD.
Transp. Goods All	Total number of transparency provisions affecting goods markets in an RTA. Sum of Transp. General Provisions, Transp. Goods, Transp. ROO, Transp. TBT/SPS, Transp. Customs and TF, Transp. Remedies, Transp. Disputes, Transp. Final Provisions, Transp. Coop., and Transp. Admin.	OECD.
Transp. Remedies	Total number of transparency provisions on trade remedies in an RTA.	OECD.
Transp. ROO	Total number of transparency provisions on rules of origin in an RTA.	OECD.
Transp. TBT/SPS	Total number of transparency provisions on SPS and TBT measures in an RTA.	OECD.

Table 4: Gravity model regressions using trade in agricultural products and various transparency measures.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Transp. Total	0.016*												
	(0.009)												
Transp Horizontal Chapter		0.328**											
		(0.145)											
Transp. General Provisions			-0.035										
			(0.030)										
Transp. Goods				-0.065									
				(0.068)									
Transp. Agriculture					-0.344								
					(0.253)								
Transp. ROO						0.073							
						(0.062)							
Transp. SPS & TBT							0.030						
							(0.020)						
Transp. Customs & TF								-0.011					
								(0.028)					
Transp. Remedies									0.083**				
									(0.036)				
Transp. Disputes										0.158**			
										(0.064)			
Transp. Final Provisions											-0.002		
											(0.082)		
Transp. Cooperation												0.017	
												(0.013)	
Transp. Admin													0.30
													(0.1
Log(Distance)	-1.258***	-1.320***	-1.199***	-1.252***	-1.138***	-1.222***	-1.237***	-1.213***	-1.270***	-1.192***	-1.217***	-1.225***	-1.3
	(0.086)	(0.105)	(0.087)	(0.102)	(0.115)	(0.086)	(0.087)	(0.087)	(0.086)	(0.081)	(0.089)	(0.086)	(0.1

Contig	0.248 (0.209)	0.195 (0.206)	0.224 (0.213)	0.183 (0.213)	0.268 (0.220)	0.208 (0.211)	0.244 (0.211)	0.220 (0.215)	0.238 (0.210)	0.283 (0.211)	0.219 (0.214)	0.227 (0.215)	0.17
Colony	0.807*** (0.171)	0.843*** (0.166)	0.834*** (0.169)	0.855*** (0.170)	0.834*** (0.167)	0.849*** (0.167)	0.818*** (0.169)	0.845*** (0.168)	0.826*** (0.169)	0.776*** (0.169)	0.846*** (0.171)	0.833*** (0.168)	0.81
ComCol	-0.075 (0.592)	-0.105 (0.583)	-0.051 (0.581)	-0.056 (0.577)	-0.038 (0.587)	-0.066 (0.586)	-0.068 (0.589)	-0.062 (0.584)	-0.077 (0.587)	-0.011 (0.592)	-0.062 (0.588)	-0.065 (0.585)	-0.0
CommonLanguage	0.292* (0.162)	0.268* (0.150)	0.267* (0.155)	0.214 (0.164)	0.303* (0.161)	0.241 (0.151)	0.279* (0.158)	0.244 (0.153)	0.281* (0.155)	0.339** (0.159)	0.246 (0.159)	0.256* (0.154)	0.22
N	2160	2160	2160	2160	2160	2160	2160	2160	2160	2160	2160	2160	216
R2	0.837	0.833	0.835	0.834	0.840	0.836	0.838	0.835	0.836	0.843	0.835	0.834	0.83

*Note: The dependent variable is imports in all cases. Estimation is by Poisson Pseudo-Maximum Likelihood with importer and exporter fixed effects. Robust standard errors corrected for clustering by country pair appear in parentheses. Statistical significance is indicated as follows: * (10%), ** (5%), and *** (1%). R2 is calculated as the square of the correlation coefficient between the actual and fitted values of the regression.*