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Determinants of SPS notification submissions for Latin American WTO members

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ABSTRACT

The general objective of this paper is to examine what the main determinants are of the submission of SPS notifications from Latin American countries to the World Trade Organization. For this, a logistic regression was estimated where the dependent variable was the number of SPS measures informed during the period 1995-2012 by twenty Latin American WTO members, while the explanatory variables were related to the country's: i) trade policy, ii) external sector, iii) macroeconomics, iv) legal capacities, v) health concerns, vi) agricultural production and vii) scientific capacities. The results obtained evidence that legal and scientific capacities are major factors in what concerns the number of notifications presented by Latin American countries. On the other hand, it seems difficult to support the idea that local producer pressure is a dominant influence in this case.

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Introduction

International trade regulation has been recently characterized by an increase in the visibility of non-tariff measures (Hoekman & Nicita, 2008; Nicita & Gourdon, 2013; Santana & Jackson, 2012). Some of these measures are enforced to have an impact on the quality of traded products (WTO, 2012). The example studied here is the case of sanitary and phytosanitary measures (SPS), which aim to protect food safety, animal and plant health.

In order to rationalize the impact of SPS on import/export flows, the WTO fostered the signing of an international agreement on SPS, as a result of the Uruguay Round. The main objective of this agreement is to ensure that members can adopt and enforce SPS without this being used for protectionist purposes. For this, countries shall justify their measures through a risk assessment in which they will consider the consequences of the entrance into force of the SPS, also allowing for reflection on adequate stringency levels.

Additionally, the SPS Agreement encourages countries to use (if possible) international sanitary and phytosanitary regulation, rather than imposing their own, and to recognize as equal the measures of other members, in an attempt to stimulate legal homogeneity and compatibility. Another principle within the SPS Agreement is transparency, according to which members shall notify the initiation of (or changes to) SPS measures. This obligation aims, *inter alia*, to allow other countries to present comments and amendments to measures before they enter into force, in an attempt to reduce possible future disputes.

However, it is not only WTO regulation that addresses sanitary and phytosanitary measures. Many recent trade agreements also include a chapter dedicated to SPS. In most cases it reinforces the different parts' commitment to the WTO SPS Agreement, but in some cases it also promotes for example institutional joint cooperation in this regard. The very recently signed Trans Pacific Partnership (TPP) establishes its own Dispute Settlement body to which parts can appeal for disputes that involve scientific or technical issues.

The growing importance of SPS measures has led to the development of a significant amount of research focused on using econometric models to estimate their effects on international trade flows, especially for agrifood products (Boza, 2013). Much of this research concludes that SPS measures constrain international trade, even when respecting

the SPS Agreement that was not the intention (e.g. Beghin & Melatos, 2012; Disdier & Marette, 2010; Disdier & Fontagné, 2010; Hoekman & Nicita, 2008; Penello, 2014). However, some authors suggest that SPS measures may actually constitute a stimulus for exports for those producers who are able to meet requirements (e.g. Crivelli & Gröschl, 2012; Ferro, Otsuki & Wilson, 2015; Song & Chen, 2010; Wilson & Bray, 2010).

However, there is very scarce research on the determinants of the different countries' SPS regulatory paths and their use of World Trade Organization mechanisms for safeguarding their trade interests. In this sense, the WTO (2012) states that the mitigation of market failures such as externalities or information asymmetries may bring about not only the raising of a non-tariff measure, but also other intentions such as the manipulation of terms of trade, profit shifting to the national industry and the protection of pressure groups.

On the same topic, Aisbett and Pearson (2012) showed, after applying an econometric model, that lower tariff levels negotiated by a country are related to the raising of additional SPS measures. However, in this sense, we suggest that the relationship mentioned can respond, rather than to a causal link, to the coincidence of the reduction of tariffs and the proliferation of non-tariff measures, as processes generalized in the international trade framework. Additionally, environment associated variables, such as regulation stringency or governance level, were also evidenced by Aisbett and Pearson (2012) as being significant. These results differ from those obtained by Besedina and Coupe (2015) in the case of Russia, where the most significant factor for SPS notifications is political pressure from stakeholders. Meanwhile, after reviewing the evolution of SPS notifications, Boza and Fernandez (*in press*) propose the existence of a link with a country's level of development, as high income countries are much more participative than the others.

Finally, Ghodsi (2014) emphasized the importance of the country's scientific level in relation to technical barriers to trade (TBT). This kind of measure also belongs to the category of technical non-tariff measures, but differs from sanitary and phytosanitary measures in terms of the diversity of the objectives addressed, among other factors, including not only safeguarding health, but also quality assurance, protection of the environment and national security, as well as the prevention of deceptive practices. The number of TBTs informed has increased dramatically in recent years, surpassing twenty

five thousand by the end of 2015 and the number of concerns presented before the TBT Committee reaching five hundred. In this last instance, the relative participation of high income countries has been particularly marked (Boza & Fernandez, 2014; 2015).

The aim of this paper is to examine what the main determinants are for the submission of SPS notifications to the WTO for Latin American countries. The success of this research will contribute significantly to existing literature on the link between SPS measures and trade, with a special focus on Latin America, where there are still many facets to explore. All of this will represent a constructive background for policymakers that could facilitate the conception of adaptation strategies in response to the current demanding scenario facing the food sector, and will also constitute a framework for further research.

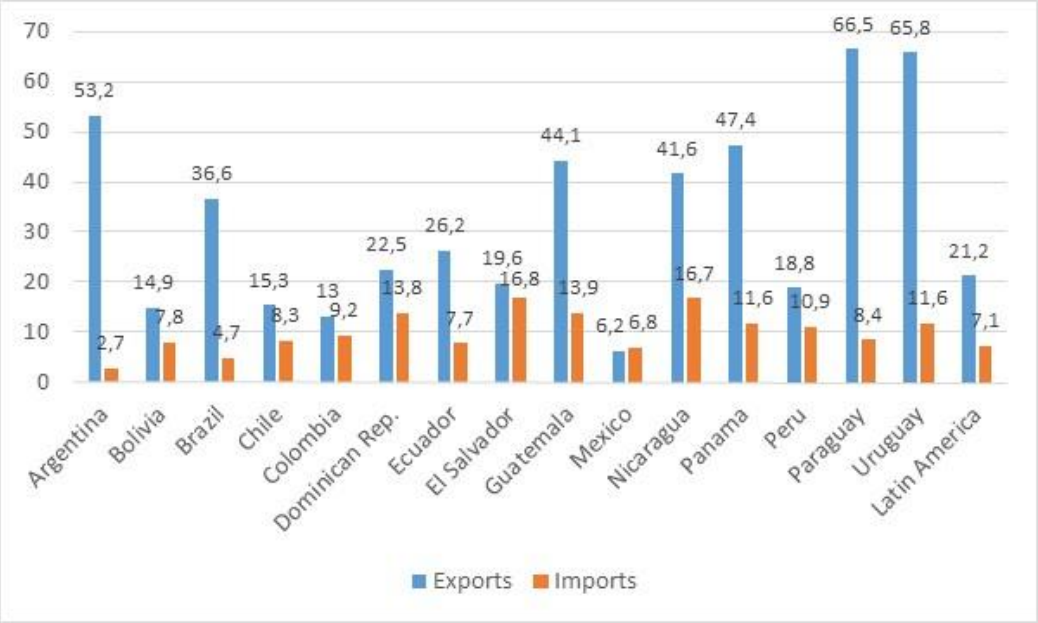
General background on the role of Latin America in global food trade

Latin America is one of the regions with the highest participation rate in global food trade. In fact, Latin America is the largest net food exporter in the world, and it is predicted to hold that position over the next decade (OECD & FAO, 2015).

More specifically, in accordance with information from the World Bank WITS database for 2014, 21.29% of the total value of Latin American exports corresponds to food products, compared with only 7.16% in the case of imports[1] (Graph 1). In fact, all countries in the region present largely positive surplus in their agriculture balances of trade, with the exception of Panama.

[1] Products in chapters 1 to 24 in the Harmonized System and the Latin American countries with information available in the World Bank WITS database were considered.

Figure 1. Participation of agri-food products in import/exports in Latin American countries (% of total value, 2014)



Source: Boza, Sánchez & Rozas, *in press*, based in WITS

In this context, Brazil, Argentina and Mexico, accounted for over 70% of the value of regional agricultural exports. For Brazil and Argentina, exported meat (HS-02), oil seeds (HS-12), residues from food industries and animal feed (HS-23) represent half of the total export value; while in Mexico this is true for edible vegetables and legumes (HS-07), edible fruit and nuts (HS-08), beverages, spirits and vinegar (HS-22).

Table 1. Main agri-food exports from Latin American countries in accordance with HS chapters (% of total value of agri-food exports, 2014)

Argentina			**El Salvador**		
HS23	Residues and waste from the food industries; prepared animal fodder	35,4	HS17	Sugars and sugar confectionery.	24,4
HS10	Cereals	14,4	HS19	Preparations of cereals, flour, starch or milk; pastry cooks' products	13,7
HS15	Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes.	12,2	HS9	Coffee, tea, maté and spices.	10,8
Bolivia			**Guatemala**		
HS23	Residues and waste from the food industries; prepared animal fodder	36,2	HS17	Sugars and sugar confectionery.	21,9
HS15	Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes.	18,8	HS8	Edible fruit and nuts; peel of citrus fruit or melons.	21,2
HS10	Cereals	11,2	HS9	Coffee, tea, mate and spices.	19,0
Brazil			**Mexico**		
HS12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and fodder.	28,5	HS7	Edible vegetables and certain roots and tubers.	21,8
HS2	Meat and edible meat offal	18,7	HS8	Edible fruit and nuts; peel of citrus fruit or melons.	16,9
HS17	Sugars and sugar confectionery.	11,7	HS22	Beverages, spirits and vinegar.	16,6
Chile			**Nicaragua**		
HS8	Edible fruit and nuts; peel of citrus fruit or melons.	49,1	HS23	Residues and waste from the food industries; prepared animal fodder	22,6
HS22	Beverages, spirits and vinegar.	16,2	HS19	Preparations of cereals, flour, starch or milk; pastrycooks' products	19,4
			HS12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and fodder.	11,7
Colombia			**Panama**		
HS9	Coffee, tea, maté and spices.	35,4	HS8	Edible fruit and nuts; peel of citrus fruit or melons.	38,8
HS6	Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage.	19,4	HS23	Residues and waste from the food industries; prepared animal fodder	11,9
HS8	Edible fruit and nuts; peel of citrus fruit or melons.	12,9			
Dominican Republic			**Paraguay**		
HS24	Tobacco and manufactured tobacco substitutes.	26,7	HS12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and fodder.	38,1
HS8	Edible fruit and nuts; peel of citrus fruit or melons.	18,3	HS2	Meat and edible meat offal	21,3
HS18	Cocoa and cocoa preparations.	10,2	HS23	Residues and waste from the food industries; prepared animal fodder	17,8
Ecuador			**Peru**		
HS8	Edible fruit and nuts; peel of citrus fruit or melons.	40,3	HS8	Edible fruit and nuts; peel of citrus fruit or melons.	21,2
HS16	Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates.	18,7	HS23	Residues and waste from the food industries; prepared animal fodder	21,0
HS6	Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage.	11,9	HS9	Coffee, tea, maté and spices.	11,8
			Uruguay		
			HS2	Meat and edible meat offal	27,8
			HS12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and fodder.	27,0
			HS10	Cereals	14,4

Source: Adapted from Boza, Sánchez & Rozas, *in press*, based in WITS

In relation to imports, according to WITS data for 2014, Mexico, Brazil, Chile and Argentina concentrate more than 75% of the region's total value, but with relevant differences between the countries mentioned. While clearly import values are much lower than export values, they are relevant for this research given their relationship with the sanitary and phytosanitary measures established by Latin American WTO members.

For Mexico, meat (HS-02), cereals (HS-10), oil seeds (HS-12), dairy products (HS-04) and residues from food industries and animal feed (HS-23) represent more than half of the total value of food imports. In the case of Brazil, food imports are concentrated for cereals (HS-10), animal and vegetable fats (HS-15), edible fruits and nuts (HS-08), beverages, spirits and vinegars (HS-22) and milling industry products (HS-11). In Chile, imported meat (HS-02), cereals (HS-10) and residues from food industries and animal feed (HS-23) are very significant; while in Argentina this is true for edible fruits and nuts (HS-08), miscellanea of edible preparations (HS-21), unprocessed cocoa and cocoa preparations (HS-18).

More than 30% of said imports come from other countries in the region, while the leading destination markets for Latin American food products are the United States, the European Union and, increasingly, China. In this sense, Asia is a net importer of basic food products, the same as Africa; trends that are expected to continue in the coming years and which represent a major commercial opportunity for Latin America (FAO, 2015).

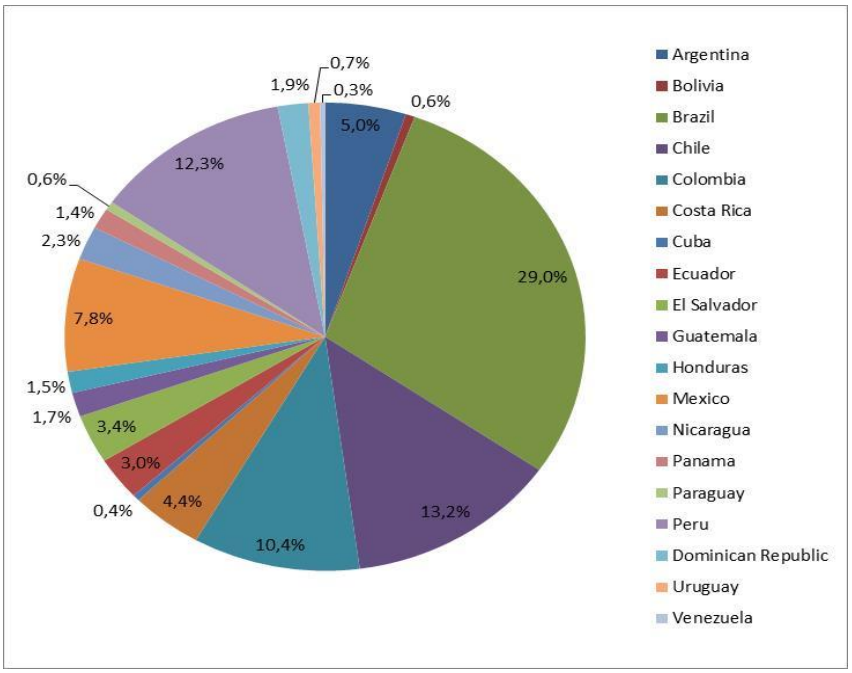
In general terms, intra-regional trade have a complementary role in satisfying the domestic demand for food in Latin American countries. With regard to intra-regional trade, various studies show that food exporters consider the most stringent technical requirements to be those imposed by trade partners within the region (World Bank, 2008; Mimouni, Averbeck & Skorobogatova, 2009; UNCTAD, 2010). Consequently, SPS measures imposed by Latin American countries seem to especially affect the region's internal food trade.

Involvement of Latin American countries in WTO-SPS mechanisms

i) Notifications

From 1995 to 2012, a total of 14,864 SPS envisaged measures were informed to the WTO Secretariat. Of these, 3,489 were presented by the United States, being the most active "notifier" in this regard. Eight Latin American countries, Brazil, Chile, Peru, Colombia, Mexico, Argentina, Costa Rica and El Salvador, were among the twenty members of the WTO with the highest number of notifications in the indicated period.

Figure 2. Participation of Latin American WTO members in regional SPS notifications (% of total amount, 1995-2012)

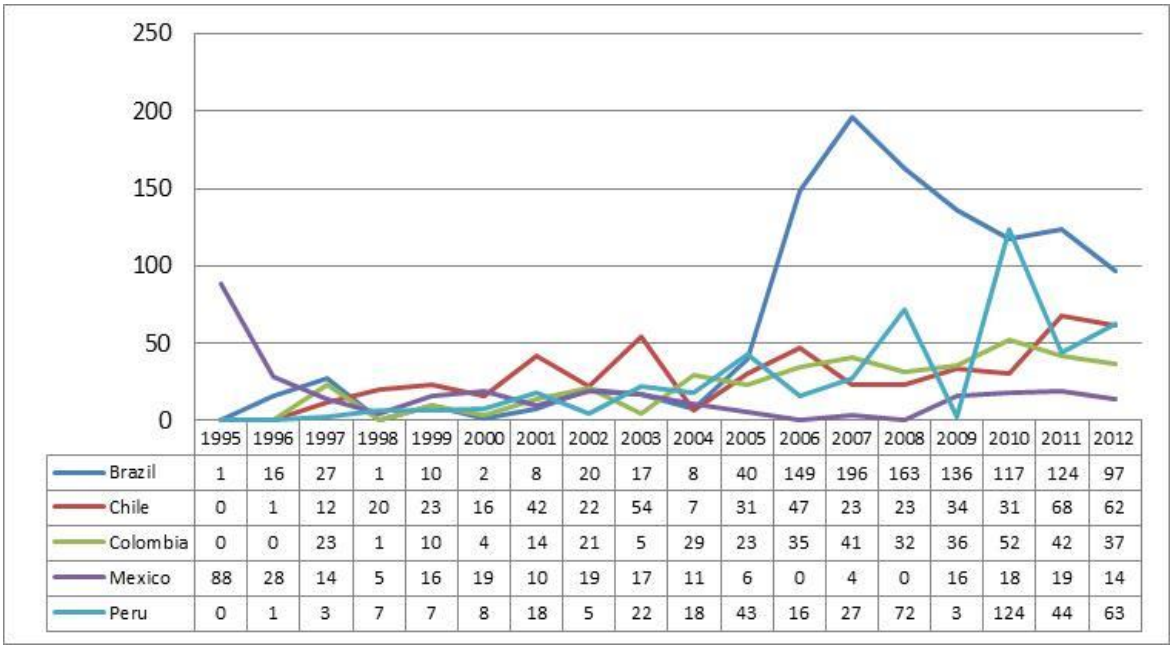


Source: Compilation based on WTO SPS-IMS database

In fact, the eight Latin American countries already mentioned concentrate 85.6% of the 3,898 regional SPS notifications between 1995 and 2012. The most prominent case is that of Brazil, third worldwide only after the US and Canada with 1,132 notifications. In this regard, a study by Da Almeida, Monteiro da Silva and De Lima (2010) concluded that the growth of the Brazilian economy has been the main determinant of the evolution of SPS notifications, suggesting the increasingly demanding market requirements as the cause.

Besides Brazil, other countries with an important participation in regional SPS notifications are, in this order: Chile (516), Peru (481), Colombia (405) and Mexico (304).

Figure 3. Evolution of the number of SPS notifications presented by the five Latin American countries with the highest participation (1995-2012)



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Brazil	1	16	27	1	10	2	8	20	17	8	40	149	196	163	136	117	124	97
Chile	0	1	12	20	23	16	42	22	54	7	31	47	23	23	34	31	68	62
Colombia	0	0	23	1	10	4	14	21	5	29	23	35	41	32	36	52	42	37
Mexico	88	28	14	5	16	19	10	19	17	11	6	0	4	0	16	18	19	14
Peru	0	1	3	7	7	8	18	5	22	18	43	16	27	72	3	124	44	63

Source: Compilation based on WTO SPS-IMS database

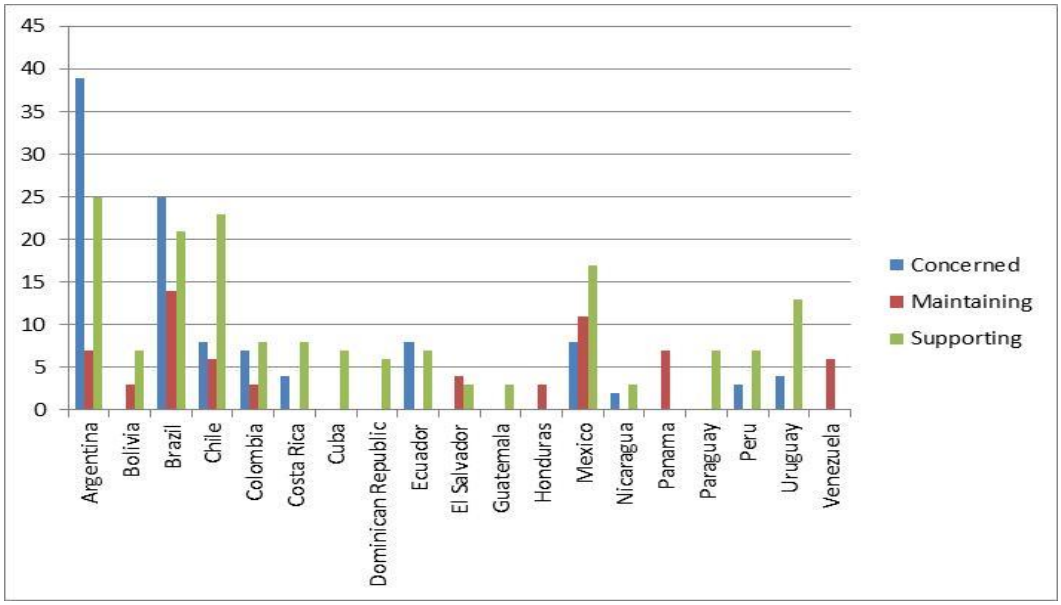
ii) Concerns

As previously mentioned, when members have concerns about the SPS measure raised by other members they can express them at the SPS Committee. The different members' participation in said concerns attends to these three categories: concerned, maintaining and supporting country, in accordance with their role in the presentation of the STC.

From 1995 to 2012 a total of 344 STCs were raised, of which 102 were solved. As regards concerned countries, the two most important are the United States, with 80 STCs, and the European Union, with 71 STCs. They are followed by some middle income countries, including Argentina (39) and Brazil (25). On the other hand, as regards maintaining countries, the European Union and United States are once again the most present, with 67 and 40 STCs; in Latin America, Brazil (14) and Mexico (11) stand out. As supporting countries of the SPS STCs the European Union and the United States are also the most

active. However, some Latin American countries such as Argentina (25), Chile (23), Brazil (21) and Mexico (17) are also in prominent positions (Boza & Fernandez, *in press*).

Figure 4. Participation of Latin American WTO members in STCs (1995-2012)



Source: Compilation based on WTO SPS-IMS database

iii) Disputes

As previously mentioned, the SPS Committee is not able to formally settle the matter causing an STC, so members' "concerns" are moved to the WTO Dispute Settlement when they strongly believe that another country is not respecting the SPS Agreement.

From 1995 to 2015, Latin American members of the WTO were complainants in 117 disputes and respondents in 94. As complainants, Latin American countries invoked the SPS Agreement (Table 1) in only 7 cases. Herreros and Garcia-Millan (2015) suggest that this low number of SPS cases, despite the importance of agricultural trade for the region, may be due to the high technical nature of the argument required to address a dispute of this kind. However, this doesn't seem to be a limitation only for Latin American countries, given that from the 501 disputes initiated in the WTO until the end of 2015, only 43 invoked the SPS Agreement. Besides, in those cases high income members, such as the United States and the European Union, had a majority stake as both complainant and

respondent (Boza & Fernandez, *in press*). Complementarily, the number of SPS disputes in which a Latin American country participates as a respondent is even lower: only two cases.

For disputes where the TBT Agreement is invoked, for 51 totals between 1995 and 2015, a Latin American member was the complainant in 16 cases. Likewise, for a total of 77 disputes under the Agreement on Agriculture in the same period, in 19 of them a Latin American member was the complainant and in 14 it was the respondent.

Table 2. Participation of Latin American countries as complainant and/or respondent in WTO disputes invoking the SPS Agreement (1995-2015)

Dispute number	**Year**	**Complainant**	**Respondent**	**Product/Issue**
DS203	2000	US	Mexico	Live pigs
DS237	2001	Ecuador	Turkey	Fresh fruit
DS284	2003	Nicaragua	Mexico	Black beans
DS293	2003	Argentina	EC	Biotech
DS386	2008	Mexico	US	Origin labelling
DS447	2012	Argentina	US	Animal products
DS448	2012	Argentina	US	Lemons
DS484	2014	Brazil	Indonesia	Poultry products

Source: Compilation based on WTO Dispute Settlement Gateway

However, some Latin American countries, such as Brazil, Colombia, Argentina and Mexico, have made a significant contribution to SPS disputes as third parties; this means as members other than the complainant(s) and respondent that want to monitor and influence the proceedings (Busch & Reinhardt, 2006); presumably due to an interest in the case.

Identification of determinants for SPS notifications

Once described the participation of Latin American countries in WTO SPS mechanisms, we will focus on addressing the determinants of the submission of notifications.

For this, a Poisson regression was estimated, where the dependent variable is the number of SPS measures reported by Latin American members[2] to the WTO from 1995 to 2012. The use of a Poisson model is very common when the dependent variable is a count variable, which assumes few nonnegative values, zero included (Wooldridge, 2003)[3].

For the definition of explanatory variables, first analogous studies (already mentioned) were considered (Aisbett & Pearson, 2012; Ghodsi, 2014; Besedina & Coupe, 2015); as they address the same issue as this research, although for other countries.

However, as this similar literature is still reduced, research on the determinants of the participation of countries in WTO Dispute Settlement was also reviewed (Horn, Mavroidis & Wijkström, 1999; Holmes, Rollo & Young, 2003; Besson & Mehdi, 2004; Bown, 2004; 2005; Fadiga & Fadiga-Stewart, 2005; Guzman & Simmons, 2005; Bohl, 2009; Davis & Blodget, 2009; Götz, Heckelei & Rudloff, 2010; Sattler & Bernauer, 2011). Unfortunately that research did not distinguish between disputes in accordance with the invoked agreement, therefore not giving specific results for those related to SPS measures.

Given the above, it was decided that the explanatory variables in the model should be divided into the following categories: i) trade policy, ii) external sector, iii) macroeconomics, iv) legal capacities, v) health concerns, vi) agricultural production and vii) scientific capacities. They are specifically defined in the table below.

[2] Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela.

[3] In econometrics, logistic models (such as Tobit) focus on the estimation of the probability of a determined response (or value of the dependent variable) in accordance to a set of explanatory variables. They are used very commonly when the dependent variable has a restricted number of possible values (limited dependent variable). Examples of this are "count variables", i.e. variables for which observations can only take positive integer values. The number of notifications that a country reports to the WTO in a given year corresponds to a count variable, as it only takes a limited number of integer values equal or bigger than zero.

Table 3. Description of explanatory variables in the estimated model

Variable	Data	Source
Agriculture sector contribution	Value added (% of GDP) by agriculture sector	World Development Indicators. World Bank.
Relevance of agriculture imports	Value of agricultural imports/Value of total imports	World Integrated Trade Solution. World Bank.
Research and Development resources	Research and Development expenditure as percentage of GDP	Red de Indicadores de Ciencia y Tecnología (RICYT).
Tariffs for agriculture imports	Weighted average tariff for agricultural products	World Integrated Trade Solution. World Bank.
Legal capacities	Regulatory quality index	Worldwide Governance Indicators. World Bank.
Health concerns	Health expenditure *per capita* in 2010 international dollars PPP	World Development Indicators. World Bank.

The outcomes for the estimation of the proposed Poisson model with the variables described as explanatory and the number of SPS measures informed by each Latin American country as dependent are presented in the following table.

Table 4. Determinants of notifications from Latin American countries: Poisson Model

Explanatory variables	Parameter estimate	Incidence Rate Ratio
Agriculture sector contribution	-0.0939*	0.9103
	(0.0098)	(0.0089)
Relevance of agriculture imports	-0.0448*	0.9561
	(0.0082)	(0.0079)
Research and Development resources	2.0899*	8.0845
	(0.0704)	(0.5698)
Tariffs for agriculture imports	-0.0204*	0.9797
	(0.0039)	(0.0038)
Legal capacities	0.3078*	1.3604
	(0.0389)	(0.053)
Health concerns	0.000031	1.0000
	(0.0000)	(0.0000)
Constant	2.999	
	(0.1612)	
Number of observations	152	
LR chi^2	2,806.01	
Pseudo R^2	0.5031	

Dependent variable: Number of notifications presented in year *t* by country *i*. Standard errors are in parenthesis. An asterisk (*) denotes significance at the 1% level.

The results obtained show that, except health expenditure, all the other variables considered are significant. However, there are important differences in the sense and level of impact of each variable. For instance, although *a priori* it seems a counterintuitive outcome, the agricultural sector level of participation in the economy is negatively related to the number

of SPS notifications. This suggests several possible conclusions: i) the "richest countries" within the sample, where the relative weight of agricultural production in their economies is lower, have greater resources and capacities in order to generate SPS measures, ii) differences in participation of the agricultural sector in the economy are also reflected in the composition of food imports, which conditions safety concerns and iii) the years when the agricultural sector growth slows pressuring the public sector to hinder foreign product competition. This last argument seems to be ruled out by the negative relation between the relevance of agricultural imports and the number of SPS notifications evidenced by the model. Conversely, the first argument seems to have more support in the model estimation. Higher legal capacities and, in particular, scientific resources are positively related to the number of notifications presented by Latin American countries; and both variables show in this specific case a positive correlation with their GDP per capita.

In fact, if we observe the incidence rate ratio associated to each explanatory variable in the model, it is evident that the one with a higher impact in SPS notifications is the country's Research and Development expenditure. A Latin American country with 1% higher R&D expenditure to GDP than another will notify eight times more SPS measures. This result is coherent with the fact that, according to the SPS Agreement, sanitary and phytosanitary measures shall rely on scientific evidence that supports a risk assessment analysis.

On the other hand, considering the results obtained, we previously partially discarded that, at least in this case, local producer pressure be a determinant factor for the imposition of SPS measures. However, it is worth mentioning that if we look at disputes, for some Latin American countries such as Brazil, the participation of local industry is very strong in practical terms. Meanwhile, model estimation shows a negative relation between tariff levels for agricultural products and the number of SPS notifications. That might suggest, at first, some kind of deviation of trade protectionism from tariff to non-tariff instruments. Nevertheless, we think there is not enough evidence for the above to be categorically stated, as it can respond to the coincidence in time of two generalized processes: reduction of tariffs, in many cases from the signing of Trade Agreements, and the proliferation of non-tariff measures. Such reduction of tariffs has been much more pronounced for the case of

plant products than for animal products. In any case, the incidence rate ratio associated to the tariff level for agriculture, shows a low impact in the number of SPS notifications.

Concluding remarks

Food safety concerns are increasingly present in international trade. However, it is little the existing evidence about the factors that affect a country's sanitary and phytosanitary regulatory process. This, despite the identification of the previously mentioned factors, constitutes very interesting input with which to eventually support corrective actions.

Considering the above, this article has aimed to address the issue declared for the specific case of Latin American countries, identifying the main determinants of the number of sanitary and phytosanitary measures informed to the WTO Secretariat by each region member from the entry into force of the SPS Agreement (1995) to 2012.

The results obtained evidence that legal and especially scientific resources and capacities are major factors in terms of the number of notifications presented by Latin American countries. On the other hand, it seems difficult to maintain that pressure from local producers for protectionist purposes is a dominant influence, as countries with a higher relevance of imported agricultural products have imposed less SPS measures. Additionally, though the tariff level appears to have a relation with the number of SPS measures, the impact is quite negligible.

From the point of view of public action, these results suggest that given the importance of technical skills for SPS regulatory capabilities, the extension of assistance intensity seems an appropriate measure if the objective is to generate higher equity between WTO members. However, it is unlikely to think that just strengthening the existing cooperation initiatives in the WTO to improve the SPS capacities of developing countries, or replicating them at a regional level, is enough to close the gap with high income countries.

On the other hand, there is a worrying gap in the ability to establish sanitary and phytosanitary measures, and even more so in the ability to respond to those imposed by other countries, both as regards compliance by local producers or, when it is considered appropriate, to raise a concern or initiate a dispute.

Finally, it is worth mentioning that one of the main limitations of this article is that the SPS measures considered in the model were not disaggregated by the type of product(s) involved. This may have enriched the results, since it is likely that the behavior of SPS regulations for plant and animal products differ, as does its relation to food safety.

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