

Virtual protectionism: Overview of MFN tariffs and bound tariffs in South America

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Abstract. The aim of this paper is to analyze the performance of the weighted averages of MFN tariffs and bound tariffs in South America. We compiled data from the WTO's databases with the purpose of recognizing some areas and products with higher levels of protectionist tariff barriers. We concluded that MFN tariffs have dropped considerably among the countries after they participate in rounds of negotiations within a multilateral trading system. However, in special cases, some countries could significantly increase tariff barriers on some goods due to GATT provisions and this situation could also imply virtual tariff protectionism was significant.

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1. INTRODUCTION

Due to globalisation and the increasing influence of multilateral institutions the dynamics of countries' trade policies has changed. Before the 1980s states developed tax policies based on social and economic requirements in their societies (Hernández, 2011).

Therefore, commercial protectionism, especially in the form of tariffs, has been a complicated issue for the societies in which the international trading system has tried to develop many rules to promote free trade and market openness (Bowen, 2015). Through rounds of negotiations the World Trade Organization (WTO) and previously the General Agreement on Tariffs and Trade (GATT) have aimed at maintaining

tariff reductions and free trade overall. Their intention has been to guarantee trade performance and to help achieve high growth and economic development among countries (De la Reza, 2015).

It is important to note that customs tariffs were the primary issue addressed during these rounds of negotiations. However, it is important to note that other issues were also involved in shaping free trade, such as the WTO managing trade regulations so as to harmonize global trade policies (OMC, 2015; IMF, 2001; CEPAL, 1997).

From the WTO point of view there are huge concerns to control protectionism as such. This protectionism is usually represented in the form of tariff barriers (TBs) and non-tariff barriers (NTBs). In relation to TBs, full members of the WTO have worked towards keeping very low tariffs and following the principles of transparency they are bound to report and predict them. These rules are published in documents known as “schedules of concessions” (WTO, 2017).

In their turn, NTBs are one of the most complex matters on the WTO agenda because of their remarkable opacity. It can be difficult to determine which of these barriers are the most common, and what are their direct (and indirect?) effects upon international trade (WTO, 2012). In any case, it is truly important to emphasize the role of TBs in trade policy due to these customs tariffs having effect of increasing the real prices for goods; as well as providing an important source of tax revenues for governments. Therefore, TBs clearly are a useful tool helping national industries compete against foreign competition (Daniels, Radebaugh & Sullivan, 2004).

With this in mind, this paper analyzes the influence of the two most important categories of tariffs within the multilateral trading system. The first case is the Most Favoured Nation (MFN) tariffs where countries apply customs duty on the imports from other WTO member states however the same tariff will cease to be charged to the imports if there is a trade agreement between the countries carrying out commercial transactions (ALADI, 1980). The second case concerns Bound Tariffs, in which case member states of the WTO establish specific commitments associated with the maximum limits allowed for tariffs in each imported product. These measures are usually adopted for urgent cases related to national industry issues (World Bank, 2010; Cardona, 2017).

Some studies argue that a very important relationship exists between customs taxes and hidden protectionism due to many WTO countries strategically adopting these TBs. For instance, in the case of Bound Tariffs, these customs taxes are usually remarkably higher than MFN or tariffs actually applied. This situation can be interpreted as a trade policy strategy adopted by mainly developing countries which usually set tariffs on the highest possible level to guarantee protectionist measures without breaking the agreed commitments under the WTO or GATT provisions (Millet, 2001; Millet & García-Durán, 2009; Beshkar, Bond & Rho, 2015).

As a consequence this article aims, first of all, to identify the levels of protectionism in South America in the form of TBs and secondly to compare MFN tariffs with Bound Tariffs. This would help identifying the virtual protectionism that the states could implement under special circumstances. This article uses tariff categories from the WTO's online database, Tariffs Analysis Online (TAO).

2. LITERATURE REVIEW

2.1. Some theoretical approaches about the role of Tariff Barriers (TBs) in international trade

Historically countries have had to adapt to new market conditions which are determined by the effects of globalization in international trade. Therefore trade openness and trade liberalization have involved the adoption of more competitive environment among enterprises that must develop their products with

increased quality and accessible prices (Zhang & Jin, 2015). From the point of view of economic policy and public administration, governments in many cases tend to regulate trade flows, for instance, imports are regulated by customs taxes as well as other measures. All of this has the purpose of protecting national industry from concerns of foreign competition (Navas, 2010).

This explains why inside the rounds of WTO and GATT negotiations the main subject covered has been the “customs tariffs”; in fact, it is possible to affirm the multilateral trading system has reached the remarkable achievement of regulating “custom tariffs” at a multinational level instead of the traditional level of individual states. Despite the increased multilateralism even today custom tariffs remain a strategic tool in many governments trade policy, especially in periods of economic crisis (Irwin, 1998; Baena, Montoya & Torres, 2017). With customs taxes it is necessary to highlight that the most used type of tariff is “ad-valorem”, which is collected as a percentage of the value of the imported goods, and this is an essential feature that facilitates the measurement between MFN tariffs in relation to Bound Tariffs (Bchir, Jean & Laborde, 2006).

Also, some studies carried out by Santos-Paulino (2002) show mathematically how restrictions based on customs tariffs for imports usually influence trade flows and is able to measure how custom tariffs reduce import growth. Furthermore, the effects of these TBs may vary by region and the economic policy approach of each country. On this basis the WTO (2017) defines TBs as customs taxes adopted by governments which interfere with the competitiveness of foreign products and give a huge advantage towards national industry as well as generating state revenues.

Customs tariffs have restricted the evolution of the world economy, and therefore economic liberalization can be understood merely as a key strategy for promoting economic growth, development and even poverty reduction at international level. In fact, some studies suggest that international trade has registered annual growth rates of 6% in the last years due to many governments deliberately not attempting any critical adjustments on their economies (IMF, 2001; Ortiz, 2014).

Because of the WTO and the multilateral trading system many states have applied free trade policies and thereby reduce trade barriers including TBs. This has the effect of allowing states to participate more actively in international trade and this has allowed benefits such as higher international for the global economy, among other benefits (IMF, 2001; Baena & Fernández, 2016).

For its part, Andersson (2012) adds that this outstanding growth in international trade was previously thought and planned as the original purpose of the GATT; however, following the creation of the WTO in 1995 and the failure of the Doha Round (the only Round in the WTO’s existence) there are still many vital issues that need resolving. This is because the Doha Round did not reach the expected success in decreasing NTBs which remain a challenge for the entire Multilateral Trading system.

It is possible to affirm that one crucial contribution of GATT was the regulation of customs taxes. Contracting Parties subject to this agreement carried out an arrangement or commitment known as “schedules of concessions”. This feature meant that it was no longer allowed to impose any tariff over a previous tariff value that had been reported to the WTO previously. As well as the controls on custom taxes brought about by GATT a unique feature known as Bound Tariffs help likewise to promote tariff reduction between member countries due to the requirement of full members to publish this information (Oyarzun, 1993; Bhala, 2008; Kaul & Jha, 2018).

It is important to note that the MFN tariffs are used by states to apply tariffs when there does not exist any kind of trade agreement based on Article I of GATT. Additionally, bound tariffs allow states to know the maximum limit that a state can use for each product according to Article II of GATT. In both cases ad-valorem is the most popular form to collect and restrain trade flow TBs (WTO, 2016) but in any event, it is necessary to recognize that the world protectionism are ruled by non-tariff measures (GTA, 2018). Customs tariffs are regulated by GATT under Article I General Most-Favoured-Nation Treatment

and Article II Schedules of Concessions. These tariffs categories are, in general, ad-valorem it is worth highlighting that in international trade, other tariff forms (see Figure 1) are used for the restriction of imports (World Bank, 2010a).

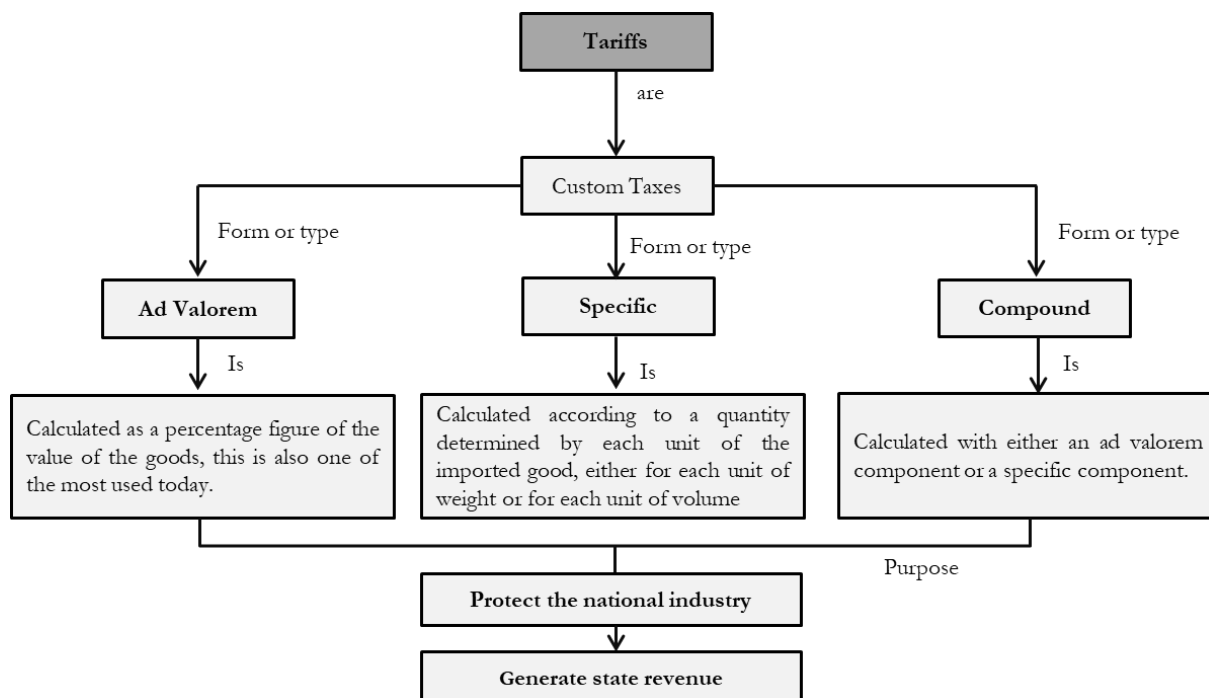


Figure 1. Customs tariffs used for importing in the international trade

Source: Own elaboration based on WTO (2015) and World Bank (2010a).

It is possible to show that the process of globalization is leading to states and societies across the world to integrate through trade liberalization because of trade agreements that aim to generate tariff benefits and tariff preferences among all parties to the agreement. This allows developing countries to participate in international markets creating stronger and more favourable markets for new investment and also creating commercial strategies for increasing the competitiveness of these countries (Welford, Meaton & Young, 2003; Zhang & Jin, 2015).

Because the issue of tariffs is such a determining factor in international trade, even with the efforts of GATT and the Doha negotiations in the WTO, that states set up trade agreements to lower trade barriers. These agreements have created customs unions which guarantee, amongst their own members, a way to reduce tariffs which in turn promotes the joint development between the signatory parties (Martin & Winters, 1997; Bagwell, 2011). According to the World Bank (2010), custom taxes raised among participating states in a trade agreement usually are applied/appealed (JB) “preferential duties” whose form or types are ad-valorem, specific, and compound (see Graph 1); due to the way they are collected.

Preferential duties are an exceptional customs tariff as they can make an exception to standard MFN tariffs. This is due to the way that full members of the WTO can collect a customs tax at a level below the MFN tariff without violating Article I of the GATT General Most-Favoured-Nation Treatment. Only an existing trade agreement allows for the collection of lower customs tariffs or even their total elimination. In fact, this particular situation and achievement were reached during the Tokyo Round in 1979 where it was adopted as an amendment called “enabling clause” to the GATT which changed their previous position that full members can apply customs tariffs below MFN only if there is a trade agreement among

countries members implicated in the multilateral trading system (Bartels & Häberli, 2010; Van den Bossche & Zdouc, 2013; WTO, 2018).

Last but not least, customs tariffs and/or TBs concerning imports are currently essential for international trade however the statistics since the global economic crisis of 2009 reveal that there are 1620 measures concerning custom tariffs and/or TBs compared to the overall total of around 9970 measures. In other words, of the total measures that can be considered protectionism across in the world, only a 16.25% are import tariffs while 83.75% correspond to rest of the global protectionism measures (GTA, 2018). For this reason, the WTO (2012) affirms that new dynamics of the international trade environment have modified the patterns of protectionism between countries. The use of NTBs is currently increasing proportionately to TBs, although this does not mean that TBs are not relevant especially when many countries in the multilateral trading system can, in extraordinary circumstances, augment their MFN tariffs until they reach the limit of the bound tariffs.

2.2 The WTO point of view about TBs and NTBs in the international trade

According to García-Matamoros (2010), the end of the Second World War allowed for the development of new initiatives in the struggle against excessive protectionism including the removal of the many different obstacles that constitute NTBs however there was a particular focus on TBs due to the wide impact of custom taxes.

The GATT was developed as a normative provision which aimed to generate an unprecedented regulatory framework for international trade among countries which consented to be part of this regime. Therefore, at the empirical level, these rules laid the foundations for promoting global development through a forum for negotiating reductions to any trade barriers, especially between the developed and emerging economies as these rules became a new strategy to reduce distortions created by restrictive trade policies that were employed by many countries (Anderson, 2016).

Therefore from the beginning of the GATT regime in 1947, until 1994, there were eight rounds of negotiations (See Table 1) where many different trade issues were discussed amongst Contracting Parties. During this time TBs have been the main issue and there have been many relevant developments in their reduction between the first round of negotiations in Geneva until the last in Uruguay. This last round was possibly the most ambitious because this took into account many different matters such TBs, NTBs, services, intellectual property among other issues. Also discussed in this last round was the creation of the WTO after the signing of the Marrakech Agreement which ended the GATT regime but in any case also ended up complementing the GATT provisions with legal texts that derive from about 60 agreements and decisions (OMC, 2015; Baena, 2018; 2019).

Subjects Addressed								
GATT	The GATT enters into force and works on reducing tariffs as a strategic issue	Tariff Reduction	Tariff Reduction	Tariff Reduction	Tariff Reduction	Tariffs and anti-dumping measures	Tariffs, non-tariff measures, "framework" agreements	Tariffs, non-tariff measures, rules, services, intellectual property, dispute settlement, textiles, agriculture, creation of WTO, etc
	Ginebra Round 1947	Annecy Round 1949	Torquay Round 1951	Geneva Round 1956	Dillon Round 1961	Kennedy Round 1967	Tokio Round 1979	Uruguay Round 1986
	23	13	38	26	26	62	102	123
Member Countries								
								WTO
								Doha Round 2001
								142

Figure 2. The rounds of GATT and the currently WTO negotiations

Source: Own elaboration based on WTO (2015) and WTO (2016).

Thus it might be said that these rounds led to a ninth meeting known as the Doha Round. It could be said that this was really the first round of the international trading system. In this new round the full members of the WTO had a main objective of continuing to work with many different issues including agriculture, services, intellectual property. The WTO members aimed to create a new set of economic policies that reformed the international trading system and finally set in place particular provisions for reducing the trade barriers. During the Doha Round, China and Taiwan were included as full members of the WTO (García-Matamoros, 2010).

The main topic of the Doha Round was the trade in goods (including agricultural products) but additionally export subsidies and domestic support were also discussed. Market access TBs and NTBs came up as secondary objectives and trade facilitation, customs and free movements of goods were third objectives. Finally, anti-dumping measures and other important issues relating to developing countries, trade agreements, technology transfers and technical cooperation were also included (Condon, 2007).

Many of these matters were not concluded and are still pending results within the WTO; in fact, although these were taken up in the Doha Round, unfortunately there was not any compromise that solved them. Due to the negotiating agenda which was ambiguous in some crucial areas Doha can be regarded as a big failure in the multilateral trading system as it was intended to improve a troubled world economy; indeed some have concluded that this failure is merely the result of a lack of political will (Francois, Van-Meijl & Van-Tongeren, 2005; Donizeti, 2009; Fernández, 2009; Jones, 2010).

The trend of globalization has continued to create new dynamics where trade agreements continue to be an increasingly important tool not only for economic growth but also an essential instrument for establishing new rules. However, these new rules have the potential to have a degree of incompatibility with the WTO and GATT provisions (Nomura, 2013; De la Reza, 2015).

Calo & Méndez (2004) argue the signing of trade agreements among countries has been carried out as a strategy for reducing TBs and to increase trade flows. However in the last few decades since the promotion of free trade in the international trading system there have appeared NTBs such as technical standards which increase trade complication. Being part of the remarkable struggle against covert protectionism has led to some nations abusing the technical requirements regulating and requiring

dynamic trade flows. Meanwhile their ability to export their produces came under increasing pressure due to their inability to produce goods of the same quality and standard.

Negotiations within the international trading system relating to market access, is only possible with political will among the full members of the WTO. Likewise, it is necessary to develop special figures for regulating protectionism just like the regulations concerning the MFN tariffs and the bound tariffs in the GATT provision “Article I General Most-Favoured-Nation Treatment” and “Article II Schedules of Concessions” respectively. These particular rules have controlled the use of TBs in protectionism within the WTO due to the commitment of their entire full members to ensure free and fair trade (WTO, 1994; Mohamed, Jean & Laborde, 2005; Matsushita, Schoenbaum, Mavroidis & Hahn, 2015).

Some studies from the World Bank (2013) highlight the role of TBs in the imports for countries; however all these measures have decreased significantly, for the above reason, and therefore it is possible to argue that countries around the world have controlled their TBs but this not mean that protectionism will cease.

Finally, Heredero (2002) argues that the trend of the new international environment is characterized by substantial changes in the trade policies of countries as they seek a common objective to adapting to the legal provisions of the multilateral trading system. Thus in this sense, this system or paradigm tries to provide guidelines that promote a dynamic expansion of world trade; where currently there have been substantial changes in the role played by BA and BNA as trade policy. Moreover, there is no doubt that these policies can improve the economic development rates while there is stability, predictability, and transparency for full members.

3. METHODOLOGY

3.1 Literature review process

According to Amat & Rocafor (2017) a systemic review and/or meta-analysis allows for the identification of the main theoretical contributions which increases the rigor of a research study. Based on this approach a review of the literature was conducted using many different papers from databases, primarily Elsevier's Scopus and Clarivate Analytics' Web of Science. Thus, with this information, it was possible to analyze the role of the of Tariff Barriers (TBs) as trade policy and also go further and consider the WTO point of view about TBs and Non-tariff barriers (NTBs) in the international trade and therefore their implications in the multilateral trading system.

3.2 Data and variables

Using secondary sources published by the WTO, it was possible to identify South American countries that use MFN tariffs and bound tariffs in their trade policies to restrict the entry of goods into their customs territory. Additionally, the Tariff Download Facility (TDF) online tariff analysis database is then used. This platform allows the identification of the previously mentioned types of tariffs in a detailed manner, including by tariff line or merchandise within the multilateral trading system, as well as information on imports for each line. In some cases where it was not possible to obtain this information, the official information system of the United Nations (UN) trade statistics "Comtrade database" was used.

It should be noted that this study evaluates the performance of MFN tariffs in South American countries between 1996 and 2016. This study follows the methodology applied by Foletti, Fugazza, Nicita & Olarreaga (2011), but in this case, the imports per tariff line were used as the weight. In this case, the tariffs weighted average by imports is shown by the following equation:

$$MFN_{ict} = \frac{\sum_{i=1}^n M_{ict} T_{ict}}{M_{it}}$$

Where M_{ict} is the value of imports on good i in country c at time t , and T_{ict} is the MFN applied tariff on good i in country c at time t . The gap is estimated by:

$$Water_{ict} = Bound_{ict} - MFN_{ict}$$

3.3 Empirical strategy

The construction of the data panel econometric models to validate the transfer effect of an economic crisis in the MFN tariffs of the South American countries is based on the empirical works of Foletti et al. (2011), and Beshkar et al. (2015). In these works the dependent variable, MFN tariffs, are assumed to be determined by the existence of an economic crisis and other control variables of the country that impose the restrictive measures.

Because of the heterogeneity that exists over time between countries and tariff lines and the way of measuring the effect that an economic crisis can have on the tax level the use of logarithmic transformations in the variables (log-log) is proposed.

The GDP, imports and the tariff gap (between MFN and bound tariffs) are used as control variables, as well as interaction variables for each of these concerning the economic crisis.

Based on the methods used by Foletti et al. (2011), the log-log equation to be estimated by country i in the period t is defined as:

$$MFN_{it} = \alpha_i + \alpha_t + \beta_1 Crisis_{it} + \beta_2 GDP_{it} + \beta_3 Imports_{it} + \beta_4 Water_{it} + \beta_5 GDP_{it} * Crisis_{it} + \beta_6 Imports_{it} * Crisis_{it} + \beta_7 Water_{it} * Crisis_{it} + \varepsilon_{it}$$

$i = 1, 2, \dots, 10, t = 1996, 1997, \dots, 2016$

In this study, different variants of the panel model are analyzed, such as the random effects model (random). In this model the parameters are allowed to vary through the sampling units and time, that is, it is considered that there is heterogeneity between the experimental units and time. For this, White's transformation is used to control heteroscedasticity and autocorrelation between errors. Also, either a fixed-effect model or a random-effects model can be estimated to account for the existing heterogeneity and the unobservable characteristics associated with each country (Baltagi, 2008).

Finally, the information was processed in Software R using the PLM package for the estimation of data panel models (Croissant & Millo, 2008). Five functional forms were estimated: ordinary least squares, fixed effects, temporal effects, fixed effects and random effects using the vector error correction model.

4. EMPIRICAL RESULTS AND DISCUSSION

4.1 Descriptive statistics

It is possible to observe that there is great variability, (see Figure 3), for MFN tariffs across South American countries. The black line in the boxes represents the median value of tariffs. In this sense, when comparing the countries, boxes overlap, but not both medians, as is the case in Bolivia, Chile, and Peru. While, in the temporality analysis case, (see Figure 4), boxes overlap with both medians. Thus in the first case, there is a difference between some countries, while in the second case there is no difference across the time of analysis.

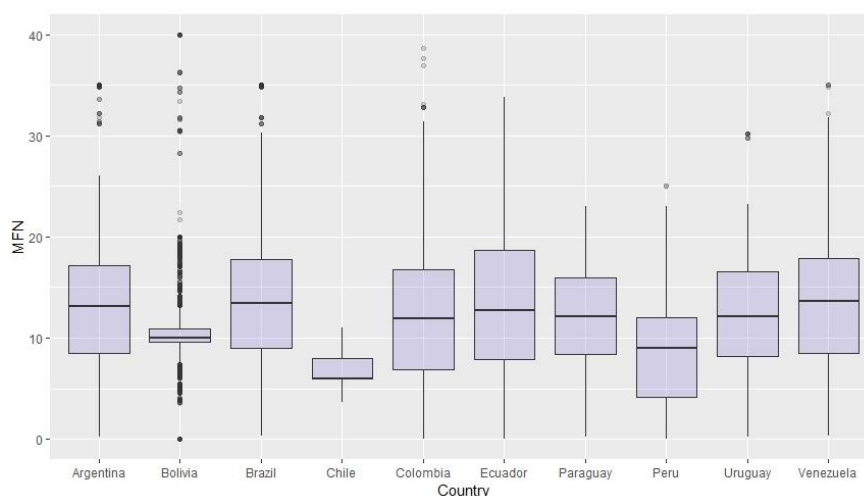


Figure 3. Heterogeneity in MFN tariffs across countries and years

Source: Own elaboration based on WTO and UNCOMTRADE data.

Likewise, it is important to remark the presence of outlier values, (see Figure 4), is most noticeable after 2008 because of the great recession which encouraged countries to adopt and increase trade policies that included protectionism as a strategy for redirecting their economies in this complex and uncertain time when the international trade was severely affected.

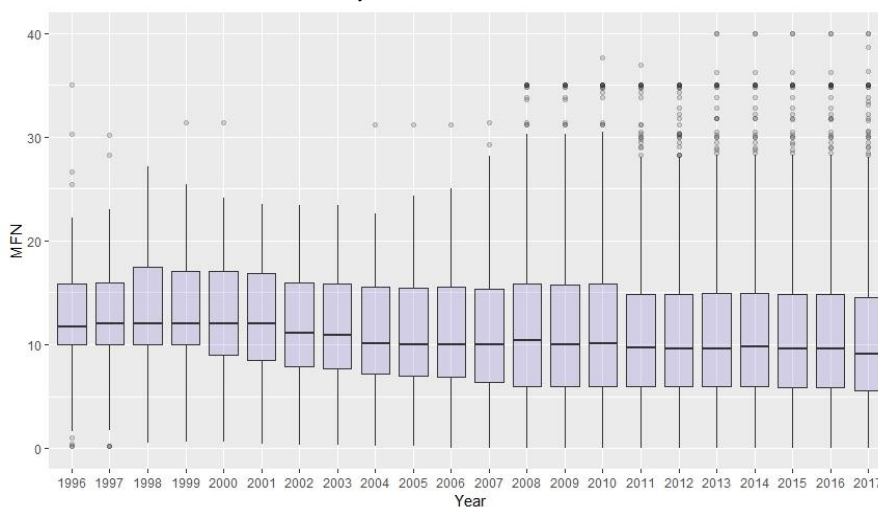


Figure 4. Heterogeneity in MFN tariffs across years

Source: Own elaboration based on WTO and UNCOMTRADE data.

4.2 General findings

This section presents the results of the estimates of tariff gaps for the South American countries based on the data collected (see Figure 5). Firstly, the historical analysis of MFN and bound imports and tariffs data is shown. Thus, for all the countries studied, the years 2002 and 2003, are presented as the point of inflection of the growing trend of imported value. The bound tariff remains constant most of the time, while the MFN shows a slight downward trend for almost all the countries considered in this study.

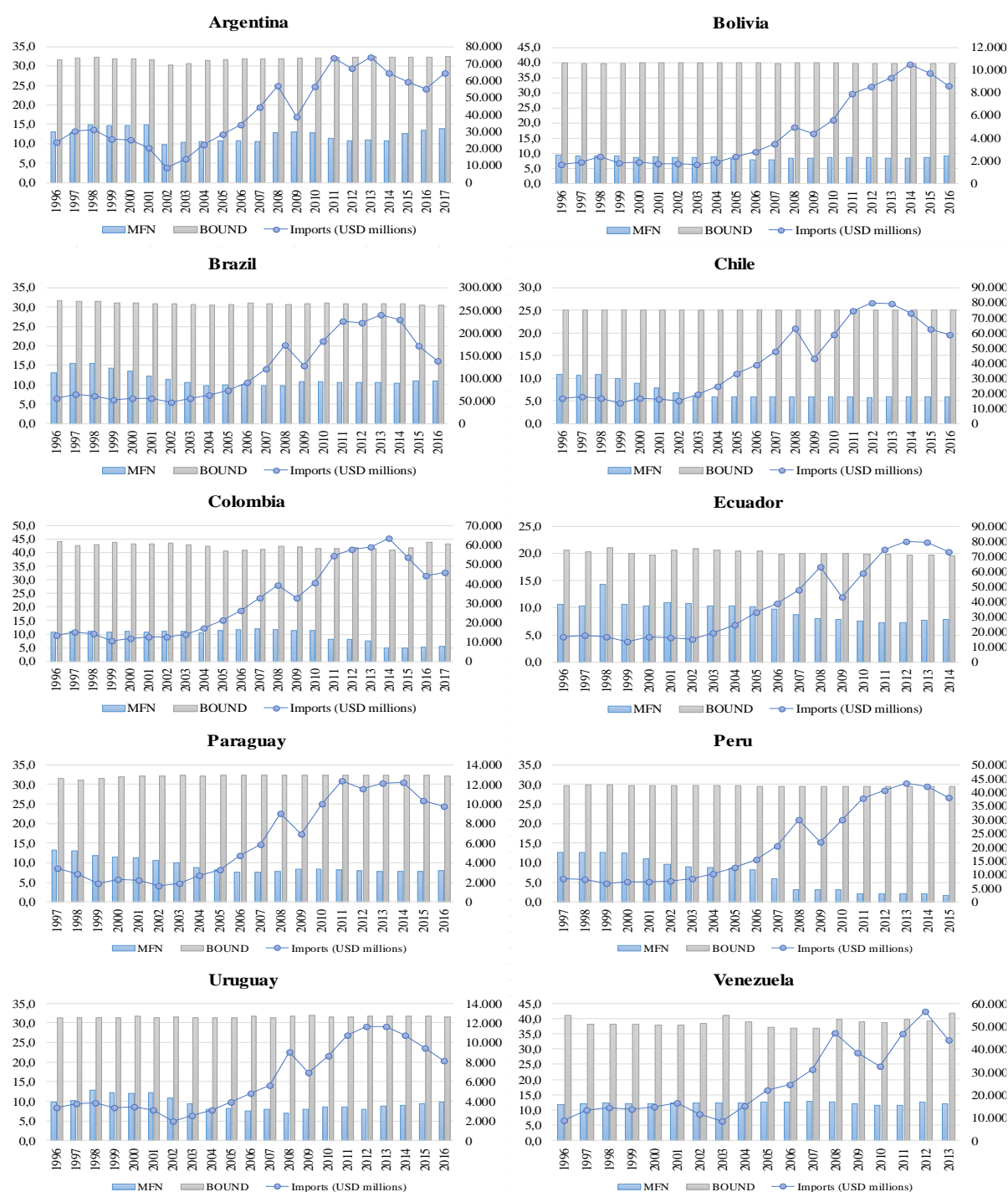


Figure 5. Imports, MFN and bound tariffs by country

Source: Own elaboration based on WTO and UNCOMTRADE data.

In this way, the results show that, (Figure 6), on average the highest MFN tariffs are found in Argentina, Venezuela, and Brazil, with an average value of 12.41, 12.35, and 11.69 respectively. In turn, the lowest tax thresholds are found in Peru (6.97), Chile (7.13) and Bolivia (8.77). However, in the case of tariff bound, Colombia, Venezuela, and Bolivia record higher levels; all due to the estimated gaps which have the highest values of 32.70, 31.18 and 26.50 respectively. Thus, these results follow the same trend as others documented by the academic literature, although these differences are slightly higher since import

weights are not used by chapters, but simple averages. In fact, Foletti et al. (2011) found a greater consolidation differential in these countries of 36.0, 36.0 and 22.0 respectively.

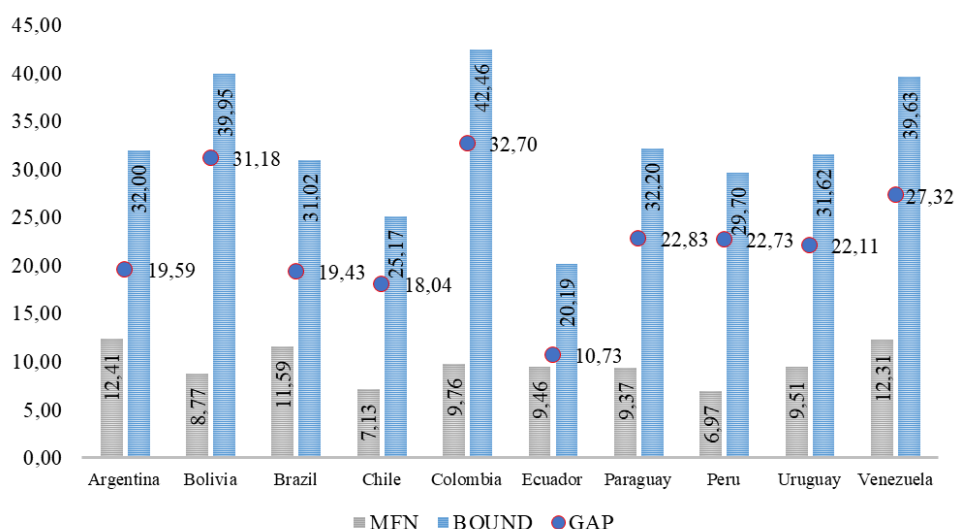


Figure 6. Estimated gap between MFN and bound tariffs by country

Source: Own elaboration based on WTO and UNCOMTRADE data.

According to Table 1, at the level of tariff sections, the consolidation space is widely dispersed. The groups of products that exhibit greater volatility correspond to the first categories that present the highest deviations, such as animals and animal products (14.0), vegetable products (26.1), edibles (18.6). It is worth noting that, in these last two sections, they register the highest values for the cases of Colombia and Venezuela, with gaps of 104.9 and 74.8 for the first country respectively; while for the second they are of the order of 66.3 and 50.4. On the other hand, the most homogenous classifications are wood and its products, textiles, metals, and machinery and electrical, which show deviations of less than five percentage points.

Table 1

Estimated gap protection applied by tariff section and country

Tariff section	Argentina	Bolivia	Brazil	Chile	Colombia	Ecuador	Paraguay	Peru	Uruguay	Venezuela
01-05 Animal & Animal Products	21.4	28.3	26.1	18.8	59.8	6.4	23.6	24.3	26.6	45.5
06-15 Vegetable Products	24.9	29.5	33.5	19.8	104.9	13.2	25.7	31.3	27.4	66.3
16-24 Foodstuffs	17.7	27.8	20.7	22.5	74.8	11.9	13.4	25.2	17.8	50.4
25-27 Mineral Products	33.8	32.1	32.9	18.7	31.5	12.1	32.8	26.6	34.5	28.5
28-38 Chemicals & Allied Industries	14.8	31.6	14.3	18.5	31.4	5.2	23.1	25.0	13.8	25.6
39-40 Plastics / Rubbers	13.1	30.1	13.3	18.5	25.6	8.2	22.9	25.6	13.2	20.4
41-43 Raw Hides, Skins, Leather & Furs	17.8	18.7	17.8	18.4	22.4	4.5	18.1	22.6	24.3	19.7
44-49 Wood & Wood Products	21.4	29.6	20.0	18.4	25.1	11.7	20.4	22.8	19.4	20.6
50-63 Textiles	13.2	22.4	11.1	18.5	25.6	12.5	16.3	17.4	16.5	15.4
64-67 Footwear / Headgear	6.9	24.8	7.7	18.6	22.3	10.4	14.8	16.0	8.1	13.9
68-71 Stone / Glass	23.0	28.6	23.4	18.4	25.7	11.7	22.9	24.9	21.6	20.0
72-83 Metals	20.6	30.7	19.3	18.4	27.6	12.6	22.1	26.6	20.2	20.6
84-85 Machinery / Electrical	22.7	34.6	18.1	18.4	23.7	14.5	26.3	23.1	26.2	22.9
86-89 Transportation	14.8	31.6	13.1	19.0	24.1	11.5	19.9	26.5	19.3	17.4
90-97 Miscellaneous	18.9	27.0	17.5	18.5	24.4	10.6	18.3	22.9	18.1	20.3
Grand total	19.8	31.2	19.9	18.8	33.4	11.4	23.7	24.9	22.7	26.7

Source: Own elaboration based on WTO and UNCOMTRADE data.

4.3 The model

Different types of estimations were carried out, (see Table 2), to test the proposed relationships, which include ordinary square minimums, that is, the basic multiple linear regression model and data

panel; which consider the temporal and country effects. In the first scenario, it is shown that an economic crisis and GDP have a positive impact on the most favored nation tariffs, while imports and the tariff gap do so negatively (column 1). Thus, intuitively it could be said that when an economic crisis occurs, countries tend to be tempted to increase tariffs, while countries that depend on imports, because they do not have a developed national industry, do not usually increase tariff barriers so as not to stop the supply of foreign products.

Table 2

Estimated gap protection applied by tariff section and country

Dependent variable: Log(MFN)					
	Pooling	OLS Country	Year	Within	Panel Random
	(1)	(2)	(3)	(4)	(5)
Crisis	0.4300*	0.4289***	-0.9457***	13.049	0.9489
	(0.2413)	(0.1127)	(0.2473)	-10.319	(0.7726)
Log(GDP)	0.0247***	-0.6713***	0.0225***	0.7196*	0.0078
	(0.0043)	(0.0129)	(0.0042)	(0.3986)	(0.0185)
Crisis*Log(GDP)	0.0012	0.0034	-0.0400**	0.0805***	0.0712***
	(0.0194)	(0.0048)	(0.0192)	(0.0193)	(0.0189)
Log(Imports)	-0.0347***	0.0071*	-0.0252***	-0.0047**	-0.0056***
	(0.0022)	(0.0022)	(0.0022)	(0.0019)	(0.0019)
Crisis*Log(imports)	0.0012	0.0055**	-0.0400**	0.0805***	0.0712***
	(0.0194)	(0.0027)	(0.0192)	(0.0193)	(0.0189)
Log(Water)	-0.3503***	-0.5783***	-0.3353***	-0.5330***	-0.5226***
	(0.0079)	(0.0077)	(0.0078)	(0.0093)	(0.0090)
Crisis*Log(Water)	0.0012	0.0892***	-0.0400**	0.0805***	0.0712***
	(0.0194)	(0.0092)	(0.0192)	(0.0193)	(0.0189)
Observations	19,968	19,968	19,968	19,968	19,968
R2	0.1216	0.0853	0.1642	0.1690	0.1644
Adjusted R2	0.1213	0.0850	0.1630	0.1272	0.1641
Residual Std. Error	0.6264		0.6113		
F Statistic	394.6610***	394.6610***	145.0679***	569.5133***	582.8914***

Note: *p<0.1; **p<0.05; ***p<0.01

Source: own elaboration using the PLM package for R.

Then, from the statistical point of view, the interaction terms are not found in the acceptance thresholds, which show that the effects of cross-sectional units and time series would be essential to be included, that is why it was into account models of fixed effects where it is considered that the independent term is different for each country and year.

Thus, when estimating temporarily fixed effects all variables are statistically significant and have negative signs (except for GDP) (column 3), meanwhile when the estimates take into account the level of protectionism exhibited by countries, all except the crisis variable continue with their statistical significance (minus the interaction effect of GDP). In this sense, it can be said that when the production of a large country increases, it is logical to assume that tariffs increase to protect the national industry. In

the case of small economies, tariffs do not increase at the same level as large economies because of an issue of supply, given that an increase in tariff barriers would curb imports. On the issue of tariff gaps (Water), it is found that a more significant breach between the MFN tariff and the bound ones allows countries to apply a restrictive trade policy only up to the consolidated ceiling for each product, since the non-compliance may lead to violation of Article II of the GATT "Schedules of Concessions".

Turning to the analysis of fixed effects by country, Argentina is taken as a reference to avoid multicollinearity with dummy variables. It is found that, in the absence of explanatory variables, the average MFN rates for this country would be 21.1%.

Two different reference cases are observed. Only the Colombian case did not present statistical significance, which shows that given equal statistical values, Colombia and Argentina would have the same average reference MFN tariff.

In the case of Brazil, the results show a positive sign, which shows that it would have a higher reference average MFN tariff of 0.888. In the other countries, negative signs are observed denoting statistical values lower than Argentina, with fluctuating ranges between -0.0417 and -1.6410, concluding that Paraguay is the country with the lowest value in its average MFN tariffs compared to Argentina, and Venezuela the closest to those reference values.

On the other hand, the effects over time show that for 1997 and between 1999 and 2001 no significant differences were observed in the MFN averages; while between 2002 to 2016 the effects have been decreasing, that is to say, year after year, average rates of MFN tariffs are lower, reaching a comparative minimum of -0.4710 in 2016.

5. CONCLUSION

In general terms, it can be said that as time has progressed since the creation of the multilateral trading system with the WTO, the average MFN tariffs in the countries analyzed has gradually and uniformly decreased until the economic crisis of 2008. Since this moment, an important change in the tariff protectionism of the South American countries that were used in the study was noticeably determined since there has been a notable dispersion or variability in the data of sensitive industries such as textiles, footwear, meat products in general among others. All this is possibly explained through the excessive and deliberate cap on consolidated tariffs since many countries at the time contemplated this situation in order to deal with extraordinary cases in which the national industry was threatened by imports.

Therefore, in some instances the economic crisis may generate a significant increase in the increase of tariffs and/or BA; however this increase may show nuances depending on the economic size as well as its volume of imports. This is the case with the countries of South America that are analyzed in the present study. It is also possible to point out that the countries that currently have a greater gap between the MFN tariff and the bound tariff tend to increase their tariff protectionism in a greater proportion than those countries with smaller gaps in the face of an economic crisis.

Likewise, although it is true that after the configuration of the WTO there has been greater predictability and transparency in the application of protectionist trade policies, specifically those of tariff order, it is quite striking that countries can still increase their tariffs at extraordinary levels in a legal manner which supposes a complex panorama that also could be understood like virtual protectionism considering in addition that international trade is currently conditioned also for non-tariff barriers that are latent.

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