ARCHIVOS DE ECONOMÍA

A note on the tariff structure of Colombia

Camilo RIVERA PEREZ
Lida Milena QUINTERO RODRIGUEZ
José Bernardo GARCÍA GUZMÁN
Luisa Fernanda OYUELA RIVERA
Julian David ZULUAGA TORRES
Francisco VARGAS MORALES

Documento 528
Dirección de Estudios Económicos
24 de mayo de 2021

A note on the tariff structure of Colombia

Abstract

The note presents a general outlook of the tariff policy setting in Colombia liberalization reforms of the 1990´s. It presents a historical perspective on the evolution over time of the tariff policies in place; as well as an analysis of the adequacy of the tariff policy in force in Colombia, in terms of general levels, dispersion and the real effects of tariff protection[1]. Lastly, it presents a series of policy recommendations regarding the tariffs policy of Colombia. Among the principal findings, Colombia shows higher tariff restrictions than regional peers, and recent trend towards higher levels and dispersion. The Andean Community's Price Band System (SAFP) protects agricultural products from international competition and exacerbates their protection and dispersion of tariffs. Finally, any tariff reform should pursue a low dispersion, simplicity, and transparency, much like the original Structural Tariff reform (REA) implemented in 2010.

Keywords: tariffs, trade policy, protection, liberalization, free trade agreement, imports, internationalization, Andean Community, dispersion, Price Band System.

JEL codes: F13, O24

Introduction:

During the last decades, Colombia has maintained stable macroeconomic conditions and has sign numerous trade agreements. Colombia has 16[2] trade agreements in force now, being one of the countries with more agreements in Latin America. This network of agreements gives preferential access for Colombian products to around 65% of world's GDP.

However, these policies have not yet materialized in Colombia's full export and investment attraction potential and the country's level of internationalization remains low**,** exposure to trade of goods and services has remained relatively low over time**.** Exports represented 15,8% of GDP in 2019, slightly below the level of 50 years ago. Imports have increased relative to GDP but remain relatively low, increasing 7 percentage points in the same period to 21,9% in 2019. This contrasts with dynamics

[1] In mid-2020 the Government of Colombia launched an "Internationalization Mission" formed by top scholars and private sector representatives, the Vice-president of the Republic and the Ministry of Trade, Industry. The present report is one in a series of reports and policy notes covering different areas and subjects prepared for the mission. However, the opinions contained in this document are the sole responsibility of the authors and do not commit the Mission Commissioners nor the Department of National Planning of Colombia or its board of directors.

[2] Andean Community, Canada, Caribbean Community, Costa Rica, Cuba, European Union, Chile, European Free Trade Association, Republic of Korea, México, Mercosur; Salvador Guatemala, Honduras; Pacific Alliance, United States, United Kingdom and Venezuela.

seen in most advanced and emerging economies, where the role of trade has increased significantly over the last 50 years (OECD, 2019).

Given these developments, the National Government of Colombia in mid-2020 launched the initiative of an Internationalization Mission (the Mission), formed by top national and international scholars, the Vice-president of the Republic and the Ministry of Trade, Industry and Tourism of Colombia. The Mission seeks to generate new insights and provide implementable policy recommendations for an effective integration of Colombia's economy into the world, maximizing the economic and social benefits of trade for the country and its population.

As part of the support for the efforts of the mission, the present report is one in a series of reports and policy notes covering different areas and subjects prepared by the technical secretariat, and researchers of the Steering Committee of the Mission. The technical secretariat was delegated to the Department of National Planning; the Ministry of Trade, Industry and Tourism of Colombia, with the support of the World Bank, The Swiss Economic Cooperation Agency-SECO and the Inter-American Development Bank.

The report presents a general outlook of the tariff policy setting in Colombia, and its institutional framework. It presents a historical perspective on the evolution over time of the tariff policies in place, including special regimes like the Andean Price Band System, which determines variable tariffs for some agricultural products. Moreover, the report presents an analysis of the adequacy of the tariff policy in force in Colombia, in terms of general levels, dispersion and the real effects of tariff protection. Finally, the report presents general conclusions and provide policy recommendations.

Finally, the opinions contained in this document are the sole responsibility of the authors and do not commit the Department of National Planning of Colombia or its board of directors.

Background of the tariffs policy in Colombia.

In Colombia the National Government sets the tariffs of merchandises. The article 189.25 of the Political Constitution of the Republic of Colombia assigned to the Government the function of modifying tariffs and rates. Also, the Constitution confer to the Congress the function of dictating the general rules and criteria that the Government must follow to modify tariffs (Article 150.19.c). The Customs Framework Law (Law 1609 of 2013) was issued by Congress establishing the general principles that the Government must follow when setting tariffs and the Government establishes the Most Favored Nation (MFN) tariffs or implementing trade agreements, through a decree following these principles of the law or the laws adopting a trade agreement by the Congress.

The Ministry of Trade, Industry and Tourism, is the leader of tariffs related policy in the National Government, under the guidance of two advisory bodies.

The main policy council of the Government is the Superior Council of Trade, created by the Trade Framework Law (Law 7 of 1991), as governing body for principles and general policies for trade, foreign investment and competitiveness, chaired by President of the Republic and is integrated by the minister cabinet, and directors of main agencies related to trade and investment, members and some functions are presented in the Annex 1. The main functions of the Superior Council of Trade are taking decisions regarding international organizations, international trade matters, international trade agreements, and safeguard measures. The Committee on Customs, Tariffs and Trade is a technical and advisory body chaired by the Vice Minister of Trade of the Ministry of Trade, Industry and Tourism and integrated by vice ministers and deputy directors of the main agencies involved in the trade of goods; tariffs, rulings and procedures (Annex 1). The main functions of this committee are recommending adoption of tariff and customs policies, updating of nomenclature of merchandises, and the adoption of safeguard measures. The Ministry of Trade, Industry and Tourism applies the policies and measures defined by the Superior Council of Trade or recommended by the Committee on Customs, Tariffs and Trade.

Tariff policy in Colombia was for several decades determined by its membership to the Andean Community (CAN by Spanish acronym). The CAN was first called the "*Pacto Andino*" when it was established in 1969 through the Cartagena Agreement. One objective in the Agreement was the creation of a free trade area, simultaneously seeking for common tariffs between CAN countries, looking for the formation of a customs union. Bolivia and Ecuador, as countries with a lower degree of development relative to their partners, would receive preferential treatment (Garay, 1998). Today the CAN has 4 members (Bolivia, Colombia, Ecuador and Peru), 5 associated countries (Argentina, Brazil, Chile, Paraguay and Uruguay) and 2 observer countries (Spain and Morocco).

The Common External Tariff (CET) was a key aspect of the establishment of an Andean Free Trade Zone with the objective to achieve a common market. The CET implied the establishment of the same tariff regime among members of the Andean Community applied to imports from third countries. The CET was adopted by the Andean Decision 370 in 1995 by Bolivia, Colombia, Ecuador, and Venezuela and had a structure of four ad valorem tariff levels that were established according to the degree of processing of imported products: inputs and raw materials (5%); semi-finished products (10% and 15%); and final consumer products (20%) (Garay, 1998)

Since its beginnings, the implementation of CET was not fully complied for all members and presented high levels of distortions. According to the Andean Decision 370 Colombia, Ecuador and Venezuela agreed to use common tariff levels, while Bolivia could maintain its own tariff under the supervision of the Andean Community. Furthermore, the non-application of the CET by Peru, alongside with the distortions created by the establishment of mechanisms to support national industries such as the Andean Price Band System (ABPS), and tax refunds, led to

difficulties in the implementation of the Free Trade Zone (Echavarría, Gamboa, & Guerrero, 2000).

The implementation of the CET was postponed several times, and finally was eliminated in 2015. In 2002 the Andean Community tried to reform the CET through the Decision 535; however, the implementation was postponed until January 31, 2006 through different CAN Decisions[3]. During this period, Bolivia, Colombia, Ecuador, and Venezuela continued to apply the CET by Decision 370, while Peru continued to use its own tariff scheme. Subsequently, Decision 669 of 2007 eliminated the obligation of members to apply the CET until 2008, a period that was extended by different decisions[4], until 2015 (Decision 805) when finally the CET was dismissed by the CAN members (Nieto, 2015).

Colombian commitments under CET were only in force until 2007 and since 2008 the country has been exempted from the application of the CET. This allowed Colombia to perform a much more active trade policy since the CET was a constrain for the modification of tariffs, since Colombia complied with it and the other members did not. According to (Nieto, 2015), an analysis of regulatory modifications related to tariffs between 2001 and 2011 shows that from the moment in which Colombia did not have the obligation to comply with the CET, national government was able to carry out an active trade policy through modifications to the nominal tariff. Furthermore, the modifications made have had an important effect on the distribution of the Customs Tariff, making more than 50% of the tariff lines have a level of 0% in the last three years of the period studied. In addition, the average nominal tariff shows a decreasing trend since 2008 to an average level of 6% in 2014, a rate similar to the average of the economies of America with which Colombia has its main commercial exchanges.

Under the Andean Community framework, Colombia implements the Andean Price Band System (SAFP) variable tariffs setting on some agricultural products. The SAFP, was stablished by CAN Decision 371 of 1994, and its objective was to stabilize the import costs at the border of 13[5] agricultural products that are characterized by highly unstable international prices (MinAgricultura, 2020). The system implies a base MFN tariff that applies when international prices are “stable”, higher MFN tariffs when prices fall below a defined level (the floor of the price band) and reduced MFN tariffs when international prices increases over a defined level (the ceiling of the price band). The products covered are divided into two categories: *marker products* and *related products*. The marker products are those whose international prices are used to calculate the price “bands”, while related products are those related to the production chain or substitute products like the marker product. (Comunidad Andina de Naciones, 1994).

---

[3] Decisions 569 of 2003, 577 of 2004, 580 of 2004, 612 of 2005, 620 of 2005 and 626 of 2005.

[4] Decision 679 of 2008: until July 20, 2008; Decision 688 of 2008: until September 20, 2008; Decision 693 of 2008: until October 20, 2008; Decision 695 of 2008: until October 20, 2009; Decision 717 of 2009: until December 31, 2011; Decision 771 of 2011: until December 31, 2014; and Decision 801 of 2014: until April 30, 2015.

[5] Price bands apply to the following products: rice, barley, yellow corn, white corn, soybeans, wheat, crude soybean oil, crude palm oil, white sugar, raw sugar, milk, chicken cuts and pig meat.

The SAFP bands works with a ceiling price, a floor price, and a reference price for each of its 13 products. If the reference price of each product (the current price) is lower than the floor price, the tariff will increase with a maximum in the bound tariff defined by Colombia at the GATT-WTO, nominal MFN tariffs on agricultural products average 16% but could be as high as 209% for poultry, 194% for maize and 189% for rice. The increase in the tariff will be equal to the difference between the reference price and the floor price multiplied by one plus the CET, or the national MFN base tariff defined. On the other hand, if the reference price (current price) is higher than the ceiling price, the tariff will decrease and could eventually become zero. The decrease will be equal to the difference between the reference price and the floor price multiplied by one plus the CET. Finally, if the reference price is between the ceiling and floor prices of the band, the tariff will be equal to the CET. Therefore, stabilization is achieved by applying additional duties or tariff reductions to the base CET tariff, depending on the behavior of international prices, based on floor and ceiling (the band) prices set annually for each agricultural product (See Annex 2 for a complete description of the SAFP).

The application of the SAFP was justified by the Andean Community members under 7 considerations. 1. The international prices of agricultural products tend to be unstable and subject to distortions like subsidies. 2. This instability in prices is reflected in a greater reliance on some agriculture products. 3. The processes of direct restrictions on imports have been replaced by tariff mechanisms among CAN members. 4. The price band promote the inclusion of local farmers in international markets. 5. With the price band system, the amounts of tariffs can be harmonized in a way that reduce the distortions generated in the markets of the CAN members (Comunidad Andina de Naciones, 1994).

Compliance with the SAFP is not mandatory for CAN member countries. CAN decision 669 of 2007 ruled that member countries were not required to comply with the implementation of the SAFP, until January 31, 2008. Subsequently, trough decisions 679, 695 and 801, the terms were consecutively extended until 2015. Finally, the decision 805 of 2015 resolved the non-mandatory nature of the application of the SAFP for member countries, without setting a deadline. Thus, since 2008, due to a succession of decisions by the Andean Community, the application of the SAFP is not imperative for the countries participating in the agreement, however Colombia have applied the system on a general basis, although there are some restrictions and suspension for specific products.

The SAFP has been questioned since in practice few tariff items are affected. (Ocampo, 2018) highlighted that of the 13 price bands that exist, only 7 are operational. Furthermore, of these 7 bands, only 5 agricultural products are actually stabilized by the action of the SAFP (2 from the vegetable oil band, 2 from the sugar band, 1 from the soybean band, 1 from the yellow corn band and 1 from the chicken cuts). This is due to the tax reduction schedules from trade agreements, as well as the elimination of price bands for imports from the US. Moreover, these tax relief schedules will continue to reduce the stabilizing capacity of the SAFP as commercial agreements are fulfilled. This argument is also supported by Fedesarrollo, showing

that even though the SAFP currently operates for 13 marker products and around 160 related products, some products have permanent restrictions or suspensions (Fedesarrollo, 2018). This is the case of the SAFP suspension for wheat, or the setting of a fixed tariff of 98% on milk, 94% on whey, 80% on rice.

The SAFP could turn into a protectionist policy on agro-industrial products. Fedesarrollo (2018) found that the SAFP not only works as a price stabilization mechanism, but also could reinforces protectionist policies in some products of the agro-industrial sector. This is because when comparing the nominal tariff, with the tariff from the SAFP, a significant difference was found in the sectors of conservation, transformation, and production of meat and fish. The most prominent example of this is found in the chicken cuts, where the tariff has frequently been higher than 20% and has even reached a level higher than 200%. The same happens in pig meats, beef and animal derivatives and dairy products, where the tariff resulting from the SAFP is usually much higher than the nominal tariff.

There have been proposals for the SAFP changes or elimination from some products. Leibovich & García (2014) in an analysis of the SAFP for raw sugar and white sugar, propose a set of modifications or eliminating the instrument. The main argument stems from the fact that, the Producer Support Estimate for the sugar producers was around 99% compared to 12% for the OECD average in the period 2000-2004, but also the periods and parameters used in the calculations of the price bands that do not reflect the cycles of prices. The excessive protection reduced the competitiveness of higher value-added industries demanding sugar intensively. In addition, they argue there are market instruments such as futures and options that agents can use to stabilize the price of imports instead of using tariffs. On the other hand, they claim that distorting support policies for agriculture (one of the justifications for developing the SAFP) has been decreased on the international markets. Reina & Zuluaga (2011) illustrate the negative effects of the SAFP on market distortions, company competitiveness and labor productivity, decreasing the level of internationalization of some productive sectors, especially those that use basic goods as inputs like the food and beverage industry

Historical perspective of tariffs since the trade liberalization reforms of the 1990´s.

Between 1989 and 1990 the foundations of the commercial opening were built. In 1989, the government began to work on a proposal that would favor the replacement of para-tariff restrictions on trade with tariffs. Moving towards this objective, in the first months of 1990, 861 tariff positions were transferred to the free import regime. This decision changed the proportion of the pre-license list from 60% to 46% of the tariff universe. 55.4% of the position that makes up the tariff universe remained in the free import regime. On the other hand, for 1989, the tariff structure including the surcharge was distributed as follows: consumer goods registered an average tariff of 43.5%, intermediate goods 23%, and capital goods 22% (Garay, 1998).

Trade liberalization occurred in an accelerated manner between 1990 and 1994. In 1990, the tariff regime was subject to three reforms. In the first, the following were carried out the reduction from 23 to 13 tariff levels, the definition of an equal tariff for similar goods, and the correction of negative protections. With this, the average tariff rate went from 26.6% to 23.5%. In the second reform, the level of tariffs charged on imports of capital goods and inputs not produced domestically and used by the industry was reduced. Similarly, the tariff rates applied to pharmaceutical industry substances and those charged to finished goods in the sector were reduced. With these modifications, the average tariff rate fell from 23.5% to 22.1%. Finally, with the third reform, the tax relief planned for 1992 was brought forward in June and the one planned for 1994 in August. This measure was intended to eliminate uncertainty and avoid the postponement of investment decisions by economic agents. With the new modifications, the average nominal protection was 11.7%, the effective protection for domestic production stood at 26.2% (Garay, 1998).

The textile and metalworking sectors benefited from tariff reductions in the period from 1994 to 1997. Since 1994, sectoral competitiveness agreements were promoted as part of the export strategy through which they sought to counteract the fall in exports. Said trade agreement advanced tariff reductions for raw materials and capital goods for the metalworking and textile sectors. In this period, the sectors that maintained higher average nominal protection levels with respect to the industrial total were: clothing (19.8%), footwear (19.1%), wooden furniture (18.8%), plastics (18.1%), beverages (18.1%) and manufacturing of food products (18.0%) (Garay, 1998).

The Common External Tariff decreed in the CAN dictated the main tariff changes in the period between 2002 and 2007. In 1996, with the Cartagena Agreement, the Andean community of nations (CAN) began. The CAN gave way to the Free Trade Zone (ZLC). The central aspect of the ZLC was the definition of a Common External Tariff (CET), which implied establishing the same tariff regime for imports from other countries. Between the years 2002 to 2007, the average tariff had constant behavior. To explain this, it is important to note that, during these years, due to the CET, the Colombian government could not make discretionary use of the nominal tariff as an instrument of trade policy. During this period, most of the tariff subheadings had a 5% tariff) (Nieto, 2015).

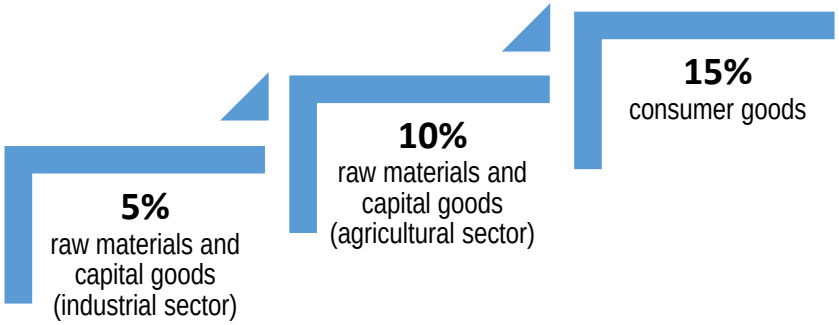
Compliance with the CET was no longer mandatory since 2008, which allowed Colombia greater flexibility in terms of trade policy for the period 2008 to 2014. As mentioned since 2008, a succession of CAN decisions allowed the freedom to adopt or not the CET to CAN members. From the moment in which Colombia did not have the obligation to comply with the CET, the national government was able to carry out a more active commercial policy through modifications to the nominal tariff. When comparing the tariffs of 2011 with those of 2006, it is observed that all the sections had a reduction of the nominal tariff. On average, tariffs were reduced by 3.6 percentage points and the five sections that had the greatest reductions were: Textile materials and their manufactures (-7.9 percentage points), Manufactures of stone, cement, ceramic products; glass and glass manufactures (-6.3 percentage

points), Plastic and its manufactures; rubber and its manufactures (-6.1 percentage points) (Nieto, 2015).

In 2010 the Government implemented a Structural Tariff Reform (REA, for its Spanish acronym). With this reform, the general tariff of 3,981 lines was reduced, mainly on raw materials and capital goods and the tariff was maintained of final consumer goods in levels comparatively higher to favor the cost structure of the national producer, and was issued through Decrees 4114 and 4115 of 2010. Subsequently, adjustments were made on 536 additional tariff lines through Decrees 492 and 511 of 2011. Such adjustments were able to reduce the average nominal tariff from 12.23% to 8.30% (DNP, 2011).

REA's design and implementation had the following guidelines[6]:

a) It was transversal to the entire productive apparatus of the country.
b) Goods were classified according to their use or economic destination according to the CEPALs classification (CUODE, for its Spanish acronym) and tariff levels of 15% were defined for consumer goods; 10% for raw materials and capital goods in the agricultural sector (according to the World Trade Organization – WTO- classification); and 5% for raw materials and capital goods from the industrial field.



c) No product had tariffs increased and, either no product would have a reduction of more than 10 percentage points.

- **Agricultural exceptions**:
  Sensitive agricultural products were excepted from the general criteria: these are those that belong to the SAFP, except for raw and white sugar bands, wheat and barley flours whose tariffs were equalized in 15%. Additionally, the products that belong to the SAFP whose band is suspended, these are: rice, milk and white corn. Likewise, beef, meat offal, beans, cocoa and frozen potatoes were not part of the REA either. These last three goods are peasant economy.

- **Industrial exceptions**: Products that belong to the Andean Automotive Agreement were excluded from the general criteria, which by the time was

[6] Taken from Technical Secretariat's report of the Committee on Customs, Tariffs and Foreign Trade ("Triple A" Committee) in January 2012.

being negotiated with Ecuador. However, for the rest of the goods of Chapter 87 (vehicles and some auto parts) of the National Customs Tariff, with tariffs higher than 5%, the tariff was reduced by 5 percentage points.

- **Adjustments:** In August 2011, because requests from the private sector regarding production not included in the national production register, it was agreed to raise the tariffs by 5 percentage points of semi and manufactured raw materials (last digit of CUODE[7] 2 and 3) and capital goods produced in the country from the industrial scope, which with the REA had a reduction of 10 percentage points and that do not belong to the scope of Large-Scale Mining - MGE (for these tariffs lines it increased from 5% to 10%).

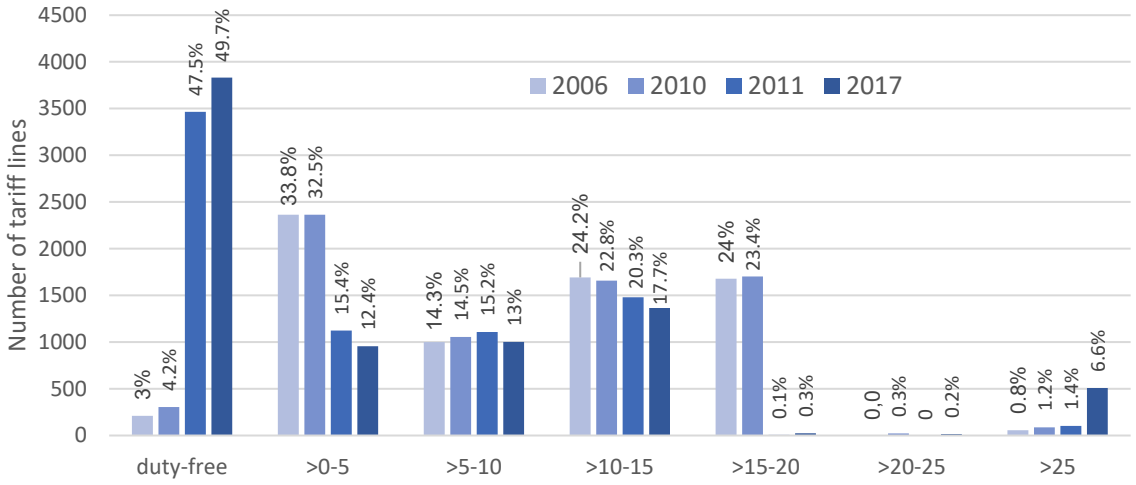
- **Temporary adjustments**: The permanent adjustments to the REA were accompanied by temporary adjustments by August 2011, because the economy was going through a period of strong appreciation of the peso that reduced the competitiveness of domestic production. To mitigate this adverse effect, tariffs were lowered to zero for some raw materials and capital goods not produced in the country. With these movements, an estimated saving of around US $390 million per year for local producers. The average tariff fell to 6.36% from 8.3% and dispersion increased to 9.02% from 7,7%.

- **Temporary adjustments became permanent**: Tariff zero for raw materials and capital goods not produced in the country, was included as a part of plans for economy's reactivation: "*Plan de Impulso a la Productividad y el Empleo*" (PIPE by Spanish acronym) in 2013, PIPE 2.0 in 2015, and "*Colombia Repunta*" in 2017, this measure was made permanent on 2018 (Decree 272 of 2018).

Despite the liberalization process, the maximum applied rate rose from 80 per cent in 2006 to 98 per cent in August 2011. Although only a few tariff lines have applied rates of over 20 per cent, their proportion has increased since 2006. Nonetheless, there has also been a significant increase in the percentage of duty-free tariff lines, from 3 per cent of the total in 2006 to 47.3 per cent in August 2011. This mainly reflects the temporary reduction in tariffs implemented in August 2011, which included a zero rate of duty on raw materials and capital goods not produced in Colombia, which in normal circumstances pay a tariff of 5 per cent (WTO, 2012).

[7] End-Use classification of products created by the UN-Economic Commission for Latin America and the Caribbean.

Graph 1. Frequency distribution of most favored nation (MFN) tariff rates 2006, 2010, 2011, and 2017



* Total number of tariff lines: 6993 in 2006; 7.273 in 2010; 7.292 in 2011 and 7708 in 2017.
Note Figures indicate the percentage of the number of tariff lines
Source: WTO Secretariat calculations, based on data provided by the Colombian authorities. Taken from (WTO, 2012) and (WTO, 2018).

Agricultural products continued to enjoy greater protection than non-agricultural goods, and the disparity has widened as a result of the temporary tariff reductions, which mainly affected the industrial sector. The average tariff for agricultural products (WTO definition), which in 2010 was 18.3 per cent, dropped to 14.5 per cent in August 2011, while the average tariff on nonagricultural products fell sharply from 11.3 per cent to 4.9 per cent. Also, in August 2011, the highest average tariff per WTO category was applied to agricultural products, specifically animals and products of animal origin, and dairy products, with tariffs of 25.2 per cent and 55.5 per cent, respectively, compared to 32.4 per cent and 58.9 per cent in 2010. This represents a substantial increase on the tariffs applied in 2006, which were 23.6 per cent and 21.2 per cent, respectively. The highest tariff in 2010 was 119.1 per cent, applied to seven lines of HS heading 02.07 “meat and edible offal, of poultry”, whereas the maximum tariff in 2011 was 98 per cent (both in the first seven months of the year and after August), applied to 14 lines of the HS heading 04.02 “concentrated milk and cream”, (See Annex 3 for more details based on tariff profiles from the WTO).

According to Fedesarrollo for the year 2000, Colombia partially complied with the basic conditions of a sound tariff structure. These conditions were first framed by little dispersion in the levels of effective protection so that there are not excessively protected or damaged sectors; second simplicity; and third transparency, so that there is no room for pressure or special treatments. By 2000, despite the fact that the precept of simplicity of rates was met, since there were only four types of rates (5%, 10%, 15% and 20%), there were many exceptions to these that ended in considerable distortions to trade of these assets and contributed to a high dispersion in effective protection (Echavarría, Gamboa, & Guerrero, 2000).

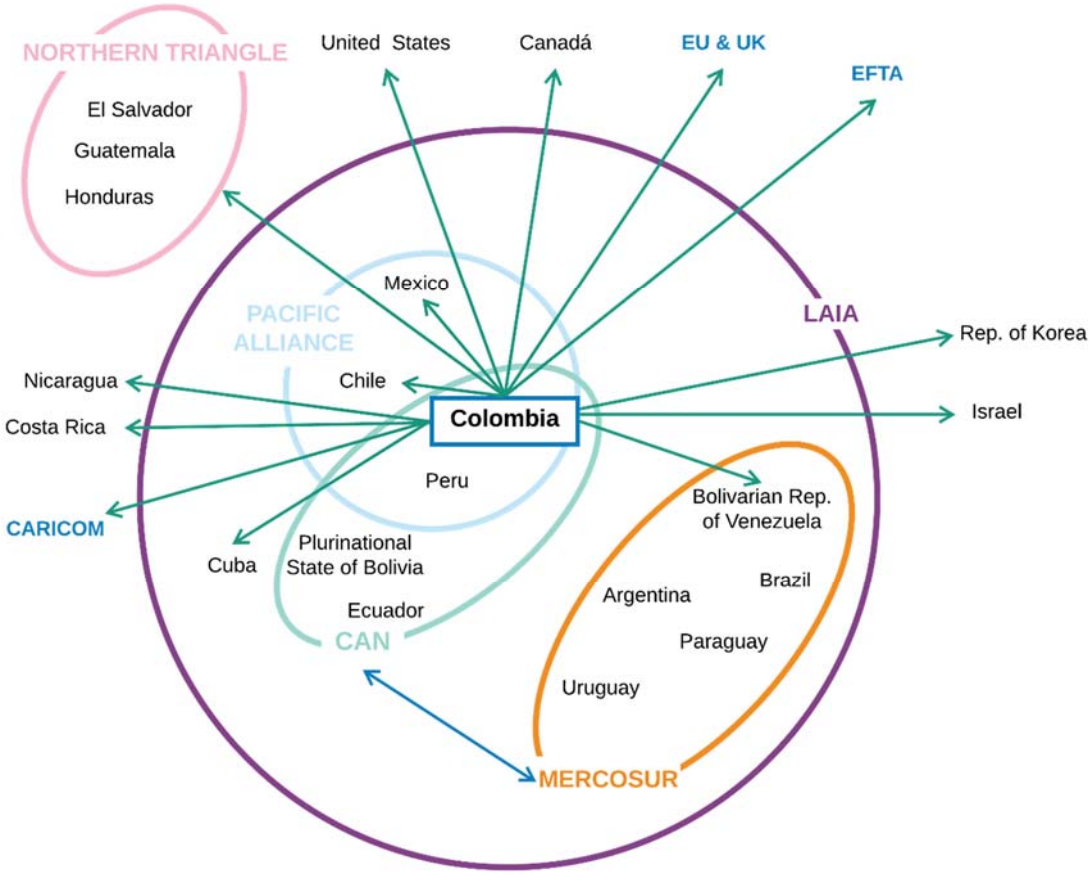
The REA allowed a significant reduction in the dispersion of the Effective Protection Rate (EPR). According to (Torres & Romero, 2013), over-protection with the REA was reduced in the average range from 17-30 pp. to 14-25 pp, and also reducing the number of sectors in the economy with effective protection levels higher than 100%. Similarly, the number of sectors that have negative protections dropped considerably. The result was a decrease of 3.87 pp. in the EPR, from 12.29% before the REA, to 8.42% after REA. Torres & Romero (2013) found that although the nominal tariffs for agricultural sector, are higher than 15%, the EPR level (based on applied tariffs) does not reach 10%. This gap occurs because imports of some agricultural goods are subject to price stabilization mechanisms, special tariff regimes or trade agreements signed by Colombia, which significantly reduces the applied tariff and, in general, the effective protection of this sector.

Regional Trade Agreements.

During the last decades, Colombia has maintained stable macroeconomic conditions and has signed numerous trade agreements. Colombia has 16[8] trade agreements in force, being one of the countries with the most agreements in Latin America. Concerning regional trade agreements, it is important to highlight that Colombia is a member of the Latin American Integration Association (LAIA), a founding member of the Andean Community of Nations (CAN) and of the Pacific Alliance and participates in several bilateral and plurilateral trade agreements Chart 1. Furthermore, Colombia has signed preferential trade agreements with Panama in 2013 and with the United Kingdom in 2019, and in early 2018 was engaged in negotiations with Japan and Turkey. In the framework of the Pacific Alliance, negotiations began in 2017 on a free trade agreement with Australia, Canada, New Zealand, and Singapore, which are candidates for associate membership of the Pacific Alliance.

[8] Andean Community, Canada, Caribbean Community, Costa Rica, Cuba, European Union, Chile, European Free Trade Association, Republic of Korea, México, Mercosur; Salvador Guatemala, Honduras; Pacific Alliance, United States, Venezuela, Israel.

Chart 1. Regional trade agreements in force in Colombia (2020)



Source: Author's update based on Colombia´s "Trade Policy Review – Report by the Secretariat". (WTO, 2018)

Colombia implemented preferential tariff eliminations based on the entry into force of regional trade agreements. As reported in the country Trade Policy Review of 2018 (WTO, 2018) Colombia began implementing new tariff elimination programs based on the entry into force of regional trade agreements with the Pacific Alliance, Costa Rica, the Republic of Korea, the United States, and the European Union (EU). These agreements also include non-tariff measures to facilitate trade and other measures to encourage investment flows. Free trade agreements (FTA), such as the one that entered into force in May 2012 with the United States, has sought to progressively reduce the tariff of some 'sensitive' agricultural products over a period of 19 years, starting in 2012. In the same way, a tariff quota mechanism came into operation, through which a certain amount of product free of duty can be imported per year.

Table 1. Features of the new regional trade agreements implemented by Colombia since 2012

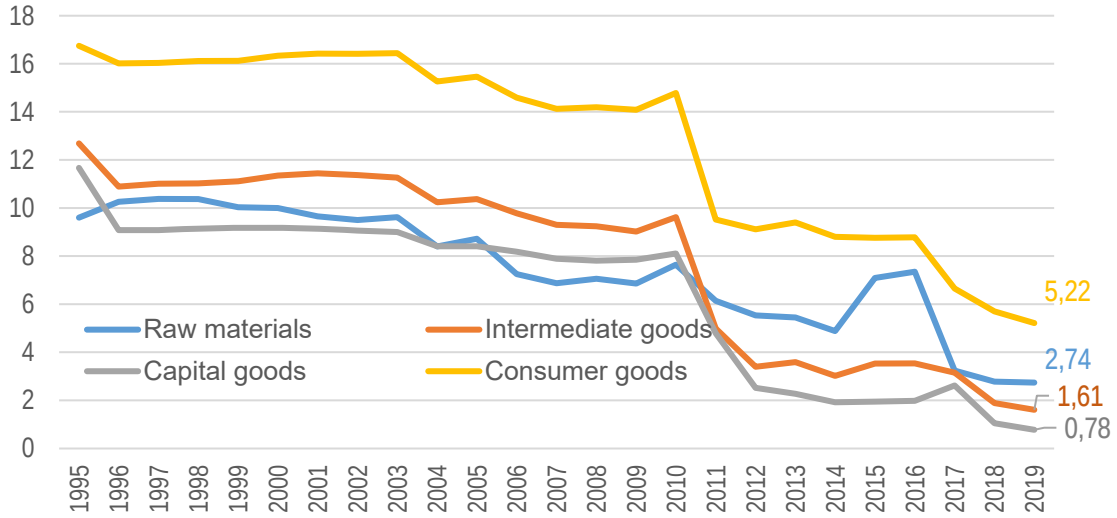
	Pacific Alliance	Costa Rica	Rep. of Korea	USA	EU
Date of entry into force	2016	2016	2016	2012	2013
Coverage	Goods and services	Goods and services	Goods and services	Goods and services	Goods and services
Foreign trade in 2016	(% of total)				
Colombian exports (f.o.b.)	8.5	0.7	1.3	31.9	15.8
Colombian imports (c.i.f.)	11.0	0.2	1.9	26.4	14.1
Tariff elimination programme					
End of the tariff elimination period	2030	2030	2034	2030	2028
	(% of total tariff lines)				
Duty-free lines	99.6	94.6	99.3	100.0	96.1
Immediate access	95.6	68.9	59.6	75.5	61.1
Less than ten years	2.7	15.6	28.3	8.5	25.7
Ten years	0.3	9.8	8.8	15.2	9.1
More than ten years	0.8	0.2	2.7	0.8	0.2
Lines still subject to tariffs	0.4	5.4	0.7	0.0	3.9

Source: Taken from Colombia´s "Trade Policy Review – Report by the Secretariat". (WTO, 2018)

Analysis of the actual tariff structure in Colombia.

The actual tariff structure reflects a historical trend to protect raw materials vis a vis intermediate and capital goods. Although there has been a consistent reduction of tariffs since the 90´s, MFN average tariffs were reduced from 12.4% in 2000 to 6.2% in 2019. Nevertheless, Colombia holds the fourth highest average tariff in Latin America, after Venezuela, Argentina, and Brazil and average tariffs are five times higher than in Chile. The highest tariffs are in manufacturing and agricultural products for consumption (Ramírez & Gómez Gaviria, 2013). Even using applied tariffs from UNCTAD-TRAINS, the greatest differences in tariff levels compared to Pacific Alliance (P.A.) countries are in raw materials where the average for P.A. countries was 1,3% in 2019, less than half the tariff applied by Colombia. Regarding consumer goods, P.A. countries applied 2,74% in 2019, meanwhile 2,5 percentage points lower than Colombia; in a similar way when compared to OECD averages. According to the OECD (2019), despite recent progress in reduce the cost of capital goods, there is still room to promote greater competition in the sectors producing these goods, which could improve the competitiveness of Colombian producers.

Graph 5. Applied tariffs by main products

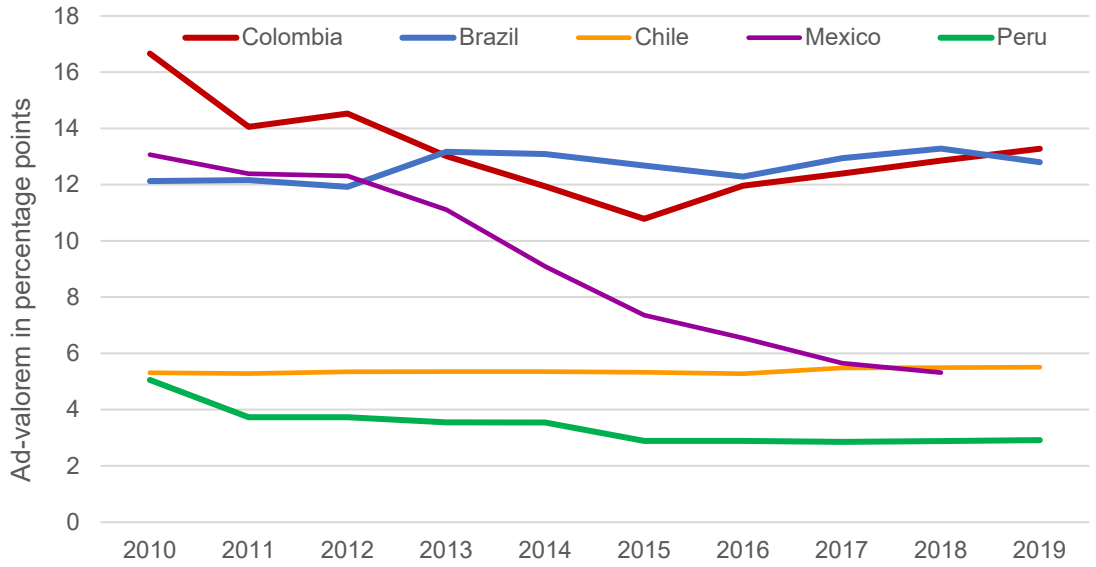


Source: UNCTAD-TRAINS (the tariffs of the SAFP are not considered)

Colombia presents levels of tariff protection twice as high than regional peers, and the surge since 2015 is explained entirely by the increased dispersion of tariffs. As explained in Annex 4, simple or weighted averages of tariffs could be misleading measures of the level of restrictiveness of trade policy, because they are biased, and has no social welfare relation, when different tariff levels are imposed on each product. Anderson & Neary (1996) propose the use of Trade Restrictiveness Indexes -TRIs-, which measure *"the uniform tariff which is equivalent (in welfare sense) to a given protective structure",* as a better way to average tariffs. Using TRIs, we estimate that Colombia shows a MFN tariff protection level similar to Brazil[9] of 13,3%, increasing form 2015 and more than twice the level of Chile (5,5%) and Mexico (5,3% for 2018). During the period 2010-2019 Chile and Peru presented low levels of protection, Mexico had similar levels to the ones of Brazil for 2010 but with a downward trend towards levels similar to Chile. As exposed by Kee, Nicita, & Olarreaga (2008), TRIs can be decomposed in three main components: 1) the squared of the import weighted average tariffs, 2) the tariff variance and 3) the covariance between the tariff squared and import demand elasticities; the recent increase in TRI for Colombia between 2015 and 2019, is mainly explained by the covariance between the tariffs squared and import demand elasticities (97,6% of the increase) and the variance of tariffs (2,8%), meanwhile the import weighted average tariffs fell, explaining a reduction of -0,44% of the total TRI increase in the period.

[9] TRIs calculated using MFN tariffs at 6 digits of the HS 1988-92 nomenclature, using simple averages from national tariff lines using UNCTAD-TRAINS data. See Kee, Nicita, & Olarreaga (2008) equations 28 to 33 on how to calculate TRIs.

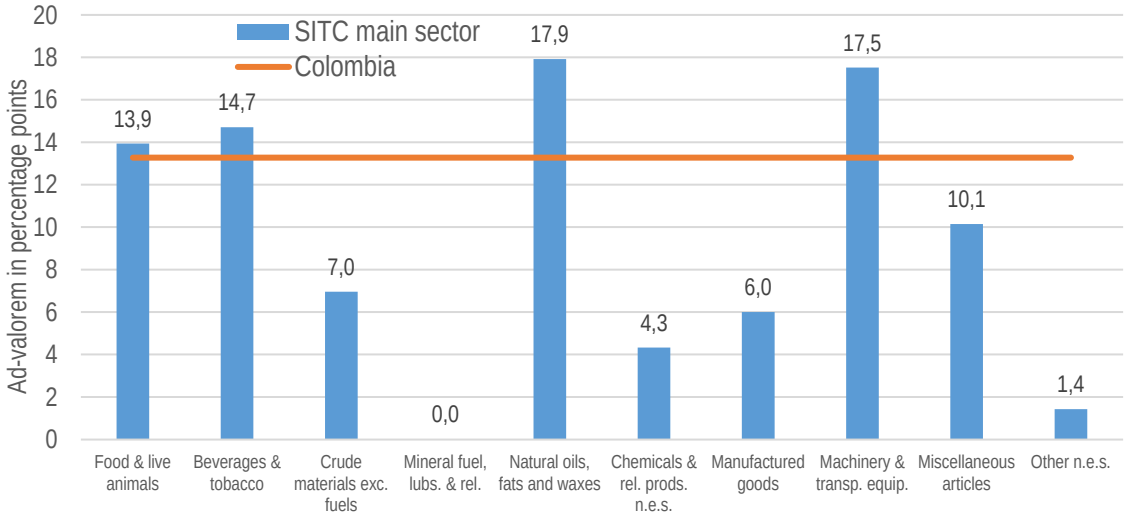
Graph 2. Trade Restrictiveness Indexes for selected Latin-American countries - MFN tariffs



Source: Author's elaboration based on TRAINS, COMTRADE, using the elasticities and methodology by (Kee, Nicita, & Olarreaga, 2008). Note: The TRI represents the uniform tariff that would maintain welfare at its current level given the existing tariff structure (Anderson & Neary, 1996), using the methodology proposed by (Feenstra, 1995) and elasticities estimated by Kee, Nicita, & Olarreaga (2008).

The TRIs calculated at the sectoral level shows that primary sectors like food and live animals, beverages, natural oils and the automotive sector are more protected than the average, meanwhile; fuel, manufacturing, and chemical products are less protected. As mentioned earlier, the automotive sector was one of the exclusions form the REA tariff reform and therefore maintained tariffs up to 35% for final goods, as well as the "sensitive" agricultural products. Moreover, some of the modifications introduced to the REA in the second half of 2011 implied increases in tariffs for semi-elaborated inputs and capital goods produced in the country from 5% to 10%. Finally, the posterior reforms applied since august 2013, in which the tariffs for raw materials and semi-elaborated inputs were reduced to zero for non-produced goods, which increased the tariffs deviation considerably. In manufacturing textile and apparel, footwear and the automotive sectors have the highest tariffs (35%-40%), as they are frequently excluded from reforms looking for lower tariffs (Echavarría S., Giraldo S., & Jaramillo M., 2019; OECD, 2019).

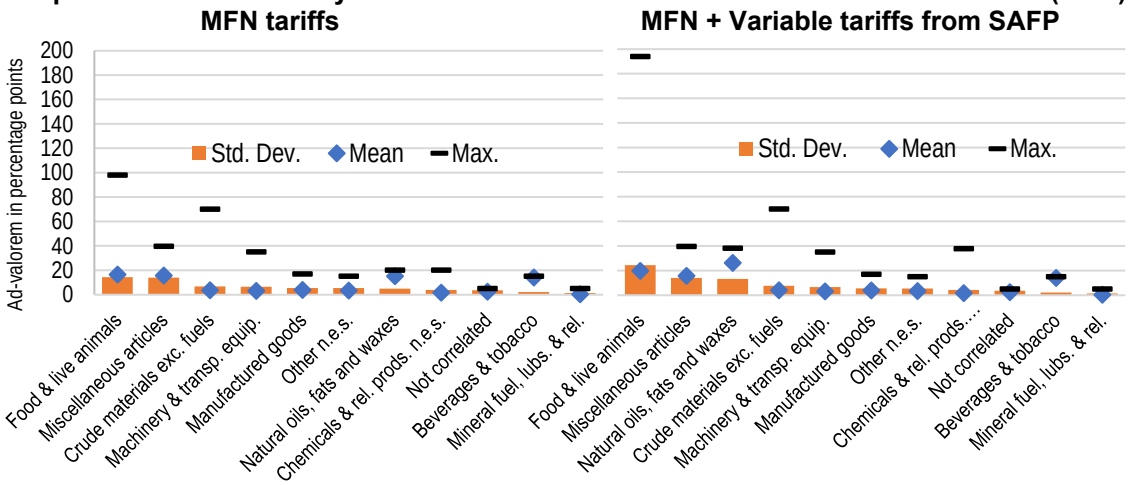
Graph 3. Colombia sector Trade Restrictiveness Indexes - MFN tariffs by SITC 4 main categories



Source: Author's elaboration based on TRAINS, COMTRADE, using the elasticities and methodology by (Kee, Nicita, & Olarreaga, 2008). Note: The TRI represents the uniform tariff that would maintain welfare at its current level given the existing tariff structure (Anderson & Neary, 1996), using the methodology proposed by (Feenstra, 1995) and elasticities estimated by Kee, Nicita, & Olarreaga (2008).

There is a high level and dispersion of tariffs for most protected sectors, which are exacerbated by the SAFP variable tariffs. The sectors previously identified as the ones more protected on average, are the ones that present the higher mean level of tariffs as well as the ones with higher ranges of tariffs and standard deviations, this is evident in agricultural products with maximum tariffs close to 100%. The effects of the variable tariffs induced by the SAFP, implies higher levels of protection and greater volatility of tariffs, an important effect on sectors like natural oils and food. The average tariffs of natural oils increased 11 percentage points in 2019 with respect to only base tariffs, and its tariffs standard deviation was 2,7 times higher. For food and live animals, the average tariffs increased 3 percentage points with respect to base tariffs, and the standard deviation was 1,7 times higher, and with a maximum tariff of 193.9%.

Graph 4: Nominal tariffs by sections - Standard international trade classification 4 (2019)



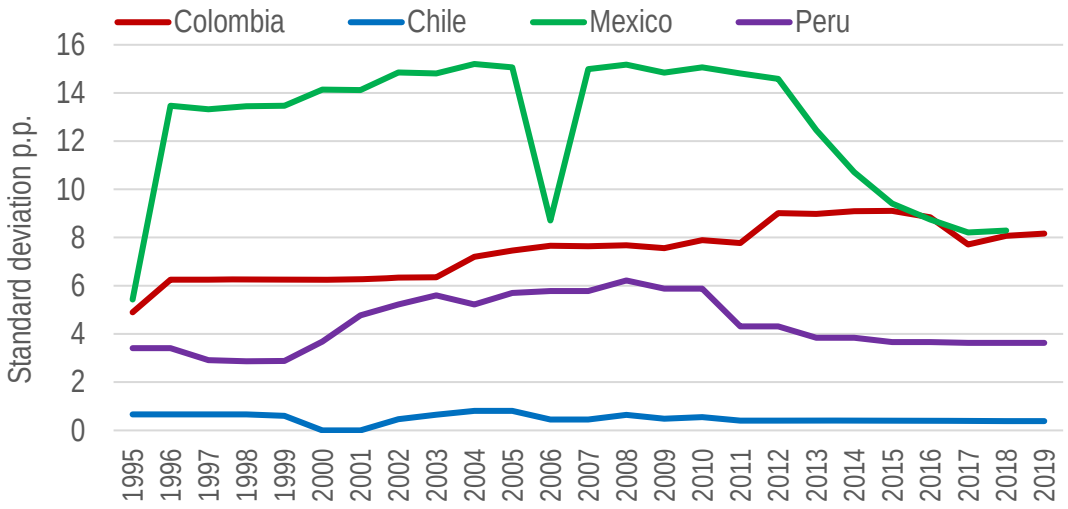
Source: Author's elaboration based on tariff definition decrees and tariff and customs administration DIAN for the MFN tariff defined by the Andean Price Band System - SAFP.

Some policy instruments heavily protect agricultural products from international competition. The study of Reina & Zuluaga (2011) illustrate the negative effects of the SAFP on market distortions, company competitiveness and labor productivity, decreasing the level of internationalization of some productive sectors, especially those that use basic goods as inputs like the food and beverage industry. For instance, (Leibovich & García (2014) find the Producer Support Estimate[10] for the sugar producers was 8 times larger than the OECD average for 2000-2004 in relative terms. They argue there are market instruments such as futures and options that agents can use to stabilize the price of imports or the income of producers instead of using tariffs.

High MFN tariff dispersion has been increasing over the last two decades. Colombia and Mexico present the highest tariff dispersion among Pacific Alliance countries; however, Mexico has downward trend compared to an increasing dispersion in Colombia, resulting in uncertainty in the importing sectors that often purchase inputs in international markets for domestic and export production. Meanwhile Chile and Peru have managed to maintain their tariff policy stable. The highest tariff dispersion in Colombia, compared to regional peers are in raw materials and intermediate goods (see Annex 5 for a regional comparison by processing stage of goods)), which as mentioned earlier reflects the decision implemented since 2013, to reduce the tariffs for raw materials and semi-elaborated to zero for non-produced goods. However, during the period some important agreements have entered in force, like the FTA with the US, this generated that the applied tariffs volatility was reduced over time but this reflects the deviation of trade effect of the agreements, even more evident on more protected sectors, the average dispersion

for MFN tariffs in Colombia is calculated in 8,2 percentage points in 2019, while using applied tariffs the calculated standard deviation was 5,2 percentage points with a downward trend since 2016.

Graph 6. Tariff dispersion: evolution over time

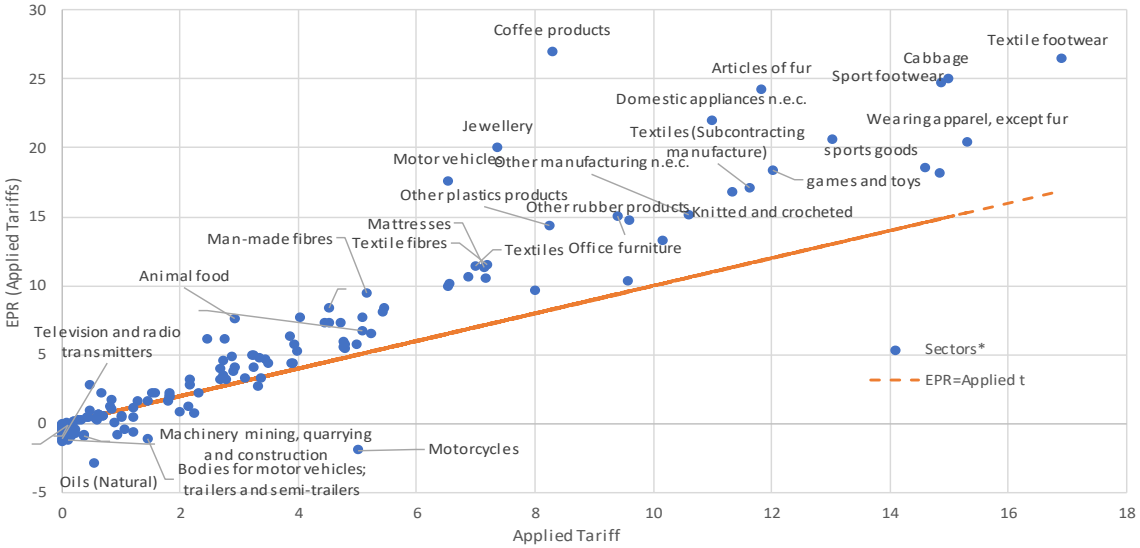


Source: UNCTAD-TRAINS (the tariffs of the SAFP are not considered)

Textile, apparel, cars, and agriculture products are the most effectively protected sectors. Regarding the analysis of Effective protection rates (EPR), the most protected sectors (ERP greater than the effective applied tariff rates[11]) reflects, on one hand, the results of the main features of the REA where some agricultural products and the vehicle production where excluded from the general reform. Moreover, the textile and apparel sectors present relatively high EPRs, given the measures taken to protect these sectors from external competition and other practices, like underbilling from importers into the country, since 2013. Initially, the measures where a mixed tariff scheme which in some cases implied prohibitive tariffs larger than the WTO-bound, and now through the application of the WTO-bound tariffs for products imported with prices lower than some defined levels of prices[12]. Nieto, Betancur, & Calderón (2016) found that between 2002-2014 the ERP was decreasing for the industrial sector as of 2009, year from which Colombia no longer had the obligation to comply with the Common External Tariff (CET) of the Andean Community and the tariff reforms carried on. Meanwhile, for the agricultural and livestock sectors the trend was increasing; the EPR of agricultural the sector averaged 17,2% in the analyzed period, 34,7%. for livestock; 12,6% for the industrial sector with a range between 9,1% and 14,9%.

[11] Results are similar using the MFN rates, see Annex 6.
[12] Measures in force until 2019 (Decrees 1786 of 2017, 1419 of 2019 and 2279 of 2019 for footwear) and in revision during 2020.

Graph 7. Effective Protection Rates 2019 (Applied tariffs based)



Source: Author's elaboration based on tariff definition decrees and tariff and customs administration DIAN and DANE for trade data. DNP Input Output matrices based on year 2012 production structures. Note: EPR assumes only tradable inputs using the Corden (1971, 1996) assumption. *Calculations do not include live animals producing sectors. Regarding Agricultural products, it is assumed that inputs like e.g. fertilizers are the same across products when linking tariff data with production structures, that are in general more aggregated.

Conclusions and policy recommendations.

In Colombia the National Government is delegated by law to set the tariffs of imported goods. The Ministry of Trade, Industry and Tourism, is the leader of trade policy, under the guidance of two advisory bodies: The Superior Council of Trade and a technical Committee on Customs, Tariffs and Trade. This institutional arrangement implies unilateral maneuver to implement reforms, as was the Structural Tariff Reform (REA) of 2010, however also implies that the political economy of any tariff reforms hinges heavily on the executive will to pursue it.

MFN tariff structure shows higher restrictions than regional peers and recent trend towards higher levels and dispersion. Colombia presents tariff levels of protection twice as high than regional peers, and the surge since 2015 that was explained entirely by the increased dispersion of MFN tariffs. Using Trade Restrictiveness Indexes calculations Colombia shows a protection level similar to Brazil, and with en increase in dispersion in recent years, even when tariffs levels were reduced. As shown by Kee, Nicita, & Olarreaga (2008), the approximated deadweight loss of welfare for the economy could be explained by the import weighted average tariffs, the tariff variance and the covariance between the tariff squared and import demand elasticities, the two later components have increased since 2015 and explained the increase in the TRI, and therefore the economic costs of the induced distortions for the economy as a whole.

The process of economic liberalization increased the relative protection of specific sectors in agriculture and industry, like automotive, footwear, textiles and apparel. Trade policy instruments, during the trade liberalization stage, were aimed at guaranteeing a minimum and stable income to agricultural producers like the SAFP. Tariffs on agricultural goods could be as high as 209% for poultry, 194% for maize and 189% for rice, due to the variable tariff rates of the SAFP which are only bounded by WTO As a result, the agricultural policy contributes to benefit certain groups of producers, mainly those of importable goods, at the expense of the welfare of consumers and the development of agricultural and agro-industrial activities with export potential (Fedesarrollo-EAFIT, 2017). In manufacturing textile and apparel, footwear and the automotive sectors have the highest tariffs (35%-40%), as they are frequently excluded from reforms looking for lower tariffs (OECD, 2019; Echavarría S., Giraldo S., & Jaramillo M., 2019).

The Andean Community's Price Band System (SAFP) protect agricultural products from international competition and exacerbates their protection and dispersion of tariffs. Colombia introduced the SAFP in 1995, with the objective of reducing domestic price instability by buffering fluctuations in international prices for agricultural goods. Reina & Zuluaga (2011) illustrate the negative effects of the SAFP on market distortions, company competitiveness and labor productivity, decreasing the level of internationalization of some productive sectors, especially those that use basic goods as inputs like the food and beverage industry. Leibovich & García (2014) propose the use market instruments such as futures and options to stabilize the income of producers instead of using tariffs for this purpose.

Any tariff reform should pursue a low dispersion, simplicity and transparency, much like the original REA of 2010. The Private Council for Competitiveness (CPC, for its Spanish acronym) recommends carry out a reform to the tariff structure that reduce dispersion, technical smuggling, eliminate distortions, make processes more efficient at customs and correct negative effective protections (CPC, 2019). Echavarría, Giraldo, & Jaramillo (2019) propose a relatively low and homogeneous tariff, like the one currently maintained by Chile and Peru, propose a similar reform. The authors argue that this policy would eliminate incentives for technical smuggling, reduces the lobbying ability of economic groups seeking protection; the mark-ups of oligopolistic sectors and promotes technical change. Reina (2010) highlights that such reform would entail political economy difficulties that could derail the initiative, and propose three basic levels of tariffs 2% for capital goods, 5% for raw materials and 10% for consumer goods. Torres & Romero (2013) propose the design of a third stage of the REA aimed at the adoption of a structure with fewer negative distortions, where the inputs and final goods in each chain have a similar tariff treatment.

According to (OECD, 2019) it is necessary to continue reducing tariffs, especially those on capital goods and raw materials, it would help to increase the productivity and competitiveness of companies. Companies would have greater access to intermediate and capital inputs, not only through inputs but also thanks to the reaction of domestic producers that would increase competition. This would provide support for the more capital-intensive sectors, but would also help to help traditional sectors, which would have access to better inputs at lower prices.

The political economy behind protectionist instruments should be evaluated in line with its efficiency to promote productive development, transformation, and economic growth. According to (OECD, 2020), public policy instruments should be better targeted at public services that benefit producers, consumers, and society overall and allow producers to compete with other countries. Government intervention could also be vertical to support some important sectors in the presence of market failures (Meléndez, 2014). In Colombia, protectionist bias has persisted because of complex political interactions among diverse interest groups but also due to highly politicized agricultural institutions which for the most part lack technical capacity. Hence, to change this dynamic, interventions in agriculture must be focused on delivering public goods rather than in direct support of producer's capacity (Arbeláez, Higuera, Steiner, & Zuluaga, 2019).

The effect of the change in a liberalization of trade policy will have different effects depending on the region and the producer's competitiveness. Producers with high and inflexible costs will have a more difficult time adapting to the new competitive environment than those with lower costs and a higher proportion of variable costs. Therefore, it is important to have commitments that avoid the imposition of unjustified non-tariff barriers, and a public policy of productive transformation and structural transformation of the sector. Some producers will be able to reconvert their activity, while others will have to change sectors. A combination of land policies and public goods complementary to these efforts would redound in benefits for producers and consumers (Ramírez & Gómez Gaviria, 2013).

Addressing non-tariff barriers should be a concern as well. Although the focus of the document was centered on the tariff structure of the country, non-tariff barriers have increased, restraining productive reallocation and reducing social welfare (García J. , 2014; Botero, García, & Correa, 2018). In Colombia, the number of products affected by these measures is relatively high, and larger than in other countries in the region. In 2013 these measures covered 78% of the total tariff lines, becoming the most used instrument to protect local production from international competition (Echavarría S., Giraldo S., & Jaramillo M., 2019). The Ad-valorem equivalent tariff of non-tariff barriers (AVE) increased rapidly until the year 2000, reaching an average level of 123% and has remained close to that level since (García López, Montes & Esguerra (2014). These authors also estimated that non-tariff barriers by type of good were concentrated in intermediate goods (81%), consumer goods (82%) and capital goods (57%). Recent estimates for Colombia find that these measures imply significant increases in trade costs both in agriculture and in manufacturing sectors, reaching 40% in footwear or 20% for vehicles (Cadot, Gourdon, & van Tongeren, 2018; OECD, 2019).

Finally, policy interventions on sensitive sectors, should be done through the provision of public goods or specific interventions with a lower distortive effect. While it could be understood that some sensitive sectors of the economy should be intervened, tariffs are not necessarily second-best policies to solve the distortions on this sectors, because they affect final prices and do not face the

problem at hand directly (Bhagwati, 1971). Therefore, the distortions induced by tariffs will be, in general for a small country, deadweight efficiency losses for the economy (Harberger, 1954), one of the most important theoretical results in international trade theory. The Productive Development Policy of Colombia - CONPES 3866- (Departamento Nacional de Planeación, 2016), established the main principles when the government wants to intervene in an specific sector of the economy. It proposes that policy instruments aiming to generate productive development of a sector should be designed to solve market, coordination, or even government failures and should be focused on horizontal market interventions (e.g. technology extension programs, subsidies for investment on R&D and technological equipment, etc.) and sector specific public goods (e.g. laboratories to evaluate compliance with sanitary and phytosanitary measures, research centers, etc.).

References

Anderson, J., & Neary, J. (1996). A new approach to evaluating trade policy. *Review of Economic, 63*, 107-125.

Arbeláez, M. A., Higuera, S., Steiner, R., & Zuluaga, S. (2019). Protecting "sensitive" agricultural products in Colombia: a political economy approach. *Coyuntura Económica*, 153-205.

Bhagwati, J. (1971). The generalized theory of distortions and welfare. In J. Bhagwati , R. Jones, R. Mundell, & J. Vanek, *Trade, balance of payments and growth* (pp. 69-90). Amsterdam: North Holland.

Botero, J., García, J., & Correa, M. (2018). Costo de la protección comercial: análisis mediante Modelos de Equilibrio General Computable. In *Costo de la protección comercial: análisis mediante.* Bogotá: FEDESARROLLO.

Cadot, O., Gourdon, F., & van Tongeren. (2018). Estimating Ad Valorem Equivalents of Non-Tariff Measures: Combining Price-Based and Quantity-Based Approaches. *OECD Trade Policy Papers, No. 215*.

Comunidad Andina de Naciones. (1994, noviembre 26). *DECISION 371.* Retrieved from DECISION 371: http://www.comunidadandina.org/StaticFiles/DocOf/DEC371.pdf

CPC. (2019). *Informe Nacional de Competitividad 2019-2020.* Consejo Privado de Competitividad (CPC).

Departamento Nacional de Planeación. (2016). *Documento CONPES 3866 de 2016 Política Nacional de Desarrollo Productivo.* Bogotá. Retrieved from https://colaboracion.dnp.gov.co/CDT/Conpes/Econ%C3%B3micos/3866.pdf

DNP. (2011). *Informe al Congreso 2010-2011 Gestión del Sector Planeación Nacional.*

Echavarría S., J. J., Giraldo S., I., & Jaramillo M., F. (2019). Equivalente arancelario de las barreras no arancelarias y la protección total en Colombia. En J. García-García, E. Montes-Uribe, & I. Giraldo-Salazar, *Comercio exterior en Colombia: política, instituciones, costos y resultados* (págs. 258-289). Bogotá: Banco de la República-Biblioteca.

Echavarría, Gamboa, C., & Guerrero, R. (2000). *Escenarios de reforma a la estructura arancelaria.* Bogotá: Fedesarrollo.

Echavarría, J. J., Giraldo, I., & Jaramillo, F. (2019). Cadenas globales de valor, crecimiento y protección arancelaria en Colombia. *Borradores de Economía No. 1080*.

Fedesarrollo. (2018). Evolución de las Medidas Arancelarias en el Sector Agropecuario y Agroindustrial en Colombia. In *Política comercial*

agrícola:nivel, costos y efectos de la protección en Colombia. Bogotá: Fedesarrollo.

Fedesarrollo-EAFIT. (2017). *Política comercial agrícola: nivel, costos y efectos de la protección en Colombia.* Bogotá: Fedesarrollo.

Feenstra, R. (1995). Estimating the Effects of Trade Policy. In G. Gene, & K. Rogoff (Eds.), *Handbook of International Economics.* Amsterdam: Elsevier.

Garay, L. J. (1998). *Colombia, estructura industrial e internacionalización, 1967-1996.* Bogotá: Departamento Nacional de Planeación.

García, J. (2014). Una visión general de la política comercial colombiana entre 1950 y 2012. (J. García, Ed.) *Borradores de Economía, No 817*.

García, J., López, D. C., Montes, E., & Esguerra, P. (2014). Una visión general de la política comercial colombiana entre 1950 y 2012. *Borradores de Economía, núm. 817*.

Harberger, A. (1954). Taxation, Resource Allocation, and Welfare. In NBER, & The Brookings Institution, *The Role of Direct and Indirect Taxes in the Federal Reserve System* (pp. 25-80). Princeton, NJ: Princeton University Press.

Kee, H. L., Nicita, A., & Olarreaga, M. (2008, November). Import Demand Elasticities and Trade Distrotions. *The Review of Economics and Statistics, 90*(4), 666-682.

Kee, H., & Nicita, A. (2017). Trade Frauds, Trade Elasticities and Non'Tariff Measures. *http://pubdocs.worldbank.org/en/315201480958601753/3-KEE-paper.pdf*. Retrieved from http://pubdocs.worldbank.org/en/315201480958601753/3-KEE-paper.pdf

Leibovich, J., & García, L. (2014). *Análisis y propuestas de modificación del Sistema Andino de Franjas de Precios (SAFP) para el azúcar crudo y el azúcar blanco.* Bogotá: ANDI.

Meléndez, M. (2014). *Fondo para la Estabilización de Precios del Azúcar (FEPA).* Bogotá: Ministerio de Comercio.

MinAgricultura. (2020, 1 09). *minagricultura.gov*. Retrieved from minagricultura.gov: https://www.minagricultura.gov.co/atencion-ciudadano/preguntas-frecuentes/Paginas/Sistema-Andino-de-Franja-de-Precios.aspx

Nieto, V. (2015). Una nota sobre la evolución de la Productividad Total Factorial en el sector manufacturero (1974-2012). *Archivos de economía No. 436*.

Nieto, V., Betancur, A., & Calderón, M. (2016). Una Nota sobre la Evolución de la Tasa de Protección Efectiva y la Tasa de Protección Nominal en Colombia (2002 – 2014). *Archivos de Economía 443*.

Ocampo, J. A. (2018). La política comercial agropecuaria colombiana en el contexto internacional. *Coyuntura Económica: Investigación Económica y Social*.

OECD. (2019). *OECD Economic Surveys: Colombia.* Paris: OECD Publishing.

OECD. (2020). *Agricultural Policy Monitoring and Evaluation.* Paris: OECD Publishing. doi:https://doi.org/10.1787/928181a8-en

Ramírez, J. M., & Gómez Gaviria, D. (2013). *Política comercial para el arroz.* Bogotá D.C., Colombia: Fedesarrollo.

Reina, M. (2010). Internacionalización de la economía colombiana: comercio e inversión. *Debates Presidenciales CAF - Fedesarrollo*.

Reina, M., & Zuluaga, S. (2011). *Elementos para modificar el Fondo de Estabilización de Precios para el.* Bogotá: FEDESARROLLO.

Torres, M., & Romero, G. (2013). Efectos de la reforma estructural arancelaria en la protección efectiva arancelaria de la economía colombiana. *Cuadernos de Economía*.

WTO. (2012). *Trade Policy Review Colombia. Report by the Secretariat.*

WTO. (2018). Trade Policy Review Colombia. Report by the Secretariat.

Annexes

Annex 1. Institutions for setting trade and tariffs policies

Superior Council for Trade

Members	Principals functions
• Republic President. • Minister of Trade, Industry and Tourism. • Minister of Foreign Affairs. • Minister of Finance and Public Credit. • Director of National Planning Department. • Manager of Bank of the Republic (Central Bank) • Minister of Agriculture and Rural Development • Minister of Mines and Energy. • Minister of Transport	Recommend and advise the national government on: • General and sectoral policy for foreign trade in goods, technology and services, foreign investment and competitiveness. • Tariff, customs, valuation, customs regimes and import and export procedures guidelines. • Decisions regarding International organizations in charge of international trade matters. • Celebration of international trade treaties or agreements, bilateral or multilateral. • Safeguard measures.
Technical Secretary	
• Ministry of Trade, Industry and Tourism	

Source: Own elaboration based on Decree 2553 of 1999.

Committee on Customs, Tariffs and Trade

Members	Principals functions
• Vice Minister of Foreign Trade (chair). • Technical Vice Minister of Finance • Vice Minister of Business Development. • Vice Minister of Agricultural Affairs • Vice Minister of Mines and Energy. • Sectorial Deputy Director of National Planning Department. • Director of National Customs. • Deputy Superintendent of Competition • The 2 Advisors of Superior Council of Foreign Trade.	Recommend and advise the national government on: • Adoption of the tariff policy. • Customs policy • Safeguard measures • Control and evaluation of the application of tariff and customs measures by the entities in charge of their execution • Establishment and variation of tariffs and other tariffs applicable to imports. • Relevance of requests for modifications to the customs tariff • Tariff: Updating of the nomenclature, explanatory notes and restructuring of the divisions or creation of new subheadings.
Technical Secretary	
Ministry of Trade, Industry and Tourism	

Source: Author's elaboration based on Decree 210 of 2003, Decree 3303 of 2006, and Decree 1888 of 2015.

Annex 2 The Andean Price Band System (SAFP)

The Andean Price Band System (SAFP) was introduced in 1994 through Decision 371 of the CAN. The objective of this system is to stabilize the import costs of a group of agricultural products characterized by marked volatility in their international prices or affected by serious distortions caused by support policies to agricultural producers in the developed countries. On the other hand, the SAFP aims to protect consumers and producers against the instability of the international prices of products and facilitate their investment decisions.

The SAFP is a mechanism that applies variable tariffs to the import of certain agricultural products through a fluctuation band of international prices (floor and ceiling prices). If the international price of the good oscillates within the price range, the product's tariff is not modified and the Most Favored Nation (MFN) rate in force in the CAN[13] member country is applied. If the international price of the product increases (decreases) beyond the ceiling price (floor price), the system applies a tariff reduction (tariff increase). However, if the international prices of a product are below the floor price of its band, the tariff increase can only occur up to the level of the "consolidated" tariff of the World Trade Organization (WTO)[14]

The SAFP covers a total of 179 agricultural products, which are distributed in 13 bands. For each band, a “marker” product and its respective reference market are defined. The marker products are those whose international prices are monitored to establish the band (floor and ceiling prices) and the conditions on which the system generates the application of additional tariff or tariff reduction. Originally, these marker products were defined in Annex 1 of Decision 371 of 1994, however, these markers have been updated, since as price providers modify the way they report information, liquidity is lost in those markets and is no longer a valid reference for international prices.

Table 1. Marker products subject to Andean Price Band System (SAFP)

Pork meat	Rice*
Chicken cuts	Soybeans
Milk*	Crude soybean oil
Wheat	Crude palm oil
Barley	Raw sugar
Yellow corn	White sugar
White corn*	

[13] Originally, it implied applying the common external tariff (CET) of CAN members, but given its implementation could not be done and CAN Decision 805 annulled the CET, the MFN tariff applies.
[14] In the case of Colombia, the additional tariff is limited for the soybean, soybean oil, and crude palm oil bands, at 40% and for sugar at 70%.

* Products for which the application of the SAFP is currently suspended in Colombia.
Source: Author's elaboration based on Decision 371 of CAN and national decrees.

Derivatives and substitutes for marker products are also included in the application of variable tariffs under the SAFP and are called "related" products. Each related product is associated with a specific marker product and its inclusion in the system is justified since a large part of the importation of goods subject to the SAFP is not given as a final consumer product but as raw material, which can be replaced by a similar good, for example, sunflower oils can be substitutes for soybean oil. Similarly, goods derived from the marker product with some degree of processing that fulfills the same function or use in the industry, such as the consumption of corn flour instead of grain corn.

In accordance with the provisions of Decision 371 of CAN, the calculation of floor and ceiling prices is carried out by the following procedure: The General Secretariat of the CAN determines the floor ($\boldsymbol{P_p}$) and ceiling ($\boldsymbol{P_t}$) prices in force for each year and publishes them by resolution in December of the year immediately prior to its validity (April of each year until March of the following year). To do this, it uses the prices originally denominated in USD FOB (prices at the port of export) in accordance with the reference markets defined by the CAN Commission.

The series of USD FOB prices of each of the marker products is taken to constant prices of October of the previous year ($october_{t-1} = 100$), using the non-seasonally adjusted consumer price index provided by the Bureau. of Labor Statistics (BLS) of the United States[15]

FOB prices are converted to CIF prices using the insurance and freight parameters for each product. These freights are not adjusted to constant USD prices and the insurance data is assumed as a percentage equal to 5% of the constant USD price FOB plus freight (Table 2)

The simple average ($\boldsymbol{\mu}$) and the standard deviation ($\boldsymbol{\sigma}$) of the constant CIF USD prices are calculated for each of the marker products, using data from the last 60 months until October of the previous year.

In this way, the floor ($\boldsymbol{P_P}$) and ceiling ($\boldsymbol{P_T}$) prices of the price band are defined as:

$$\mathrm{P_P} = \mu_{\mathrm{CIF}} - \text{adjustment factor} * \sigma_{\mathrm{CIF}} \qquad (1)$$

$$\mathrm{P_T} = \mathrm{P_P} + \sigma_{\mathrm{CIF}} \qquad (2)$$

Where the adjustment factor is less than one and differs according to the marker product of the SAFP. In most cases it is 0.5, which implies that the price band is symmetric around the average (Table 2).

Table 2. Freight and adjustment factors employed in the SAFP by marker product

Marker products	Freight (USD$)	Adjustment Factor
Wheat	20	0,5
Rice*	35	0,5
Corn - White*	20	0,125
Corn- Yellow	20	0,5
Soybeans	20	0,5
Crude soybean oil	35	0,5
Crude palm oil	40	0,5
White sugar	25	0
Raw sugar	25	0
Barley	20	0,5
Milk*	130	0
Chicken cuts	150	0,5
Pork meat	150	0,5

* Products for which the application of the SAFP is currently suspended in Colombia.

Source: Author's elaboration based on Decision 371 of CAN

Once the floor ($\boldsymbol{P_P}$) and ceiling ($\boldsymbol{P_T}$) prices that will be in force for each year have been defined, the international prices are monitored every fortnight to define which will be the tariff for the SAFP and if there are the possibility to apply an additional tariff or a reduction. SAFP tariffs are in effect for a fortnight and are calculated based on the average USD CIF prices observed for the same fortnight of the immediately previous month and they are communicated to the CAN countries through circulars.

The calculation of the application of an additional tariff duty or a tariff reduction in the case of marker products is calculated with the following formulas:

If the USD CIF reference price in the fortnight is lower than the CIF floor price of the current band ($\boldsymbol{P < P_P}$), an increase in the tariff occurs. The resulting tariff must be applied according to the following formula

$$\text{Additional Tariff (adt)} = \frac{(P_P - P)}{P}(1 + t_{MFN}) \qquad (3)$$

Where $\boldsymbol{P}$ is the USD CIF reference price for the fortnight, $\boldsymbol{P_P}$ is the CIF floor price of the current band, and $\boldsymbol{t_{NMF}}$ is the current MFN tariff for that product. **The Additional Tariff cannot result in a total tariff to be applied that exceeds the WTO consolidated tariff for each product.**

If the USD CIF reference price in the fortnight is higher than the CIF ceiling price of the current band ($\boldsymbol{P} > \boldsymbol{P_T}$), a reduction in the tariff occurs. The resulting tariff to be applied is calculated according to the following formula:

$$\text{Tariff Reduction (tred)} = \frac{(P - P_T)}{P}(1 + t_{MFN}) \qquad (4)$$

Where $\boldsymbol{P}$ is the USD CIF reference price for the fortnight, $\boldsymbol{P_T}$ is the CIF ceiling price of the current band, and $\boldsymbol{t_{NMF}}$ is the current MFN tariff for that product. **The Tariff Reduction cannot result in a total tariff to be applied that is less than 0%.**

The calculation of the application of an additional tariff duty or a tariff reduction in the case of related products is carried out with the following formulas, which could slightly change, given that for certain related products the current MFN tariff is not equal to the marker product :

If the MFN tariff of the linked product ($\boldsymbol{t_{linked.}}$) is higher than the marker MFN tariff ($\boldsymbol{t_{mark.}}$) an additional tariff is defined based on the additional tariff calculated for the relevant marker product ($\mathbf{adc}$) as follows:

$$\text{Additional Tariff} = \text{higher value between: adc}* \frac{t_{mark.}}{t_{linked.}} \text{ y adc-}(t_{mark.}\text{-}t_{linked}) \quad (5)$$

In the case of having to impose additional tariffs for products linked to a specific marker product, if the linked MFN tariff is equal to the marker, the same resulting tariff applies for the marker. As with marker products, the additional tariffs cannot result in a total tariff that is higher than the WTO bound for each product.

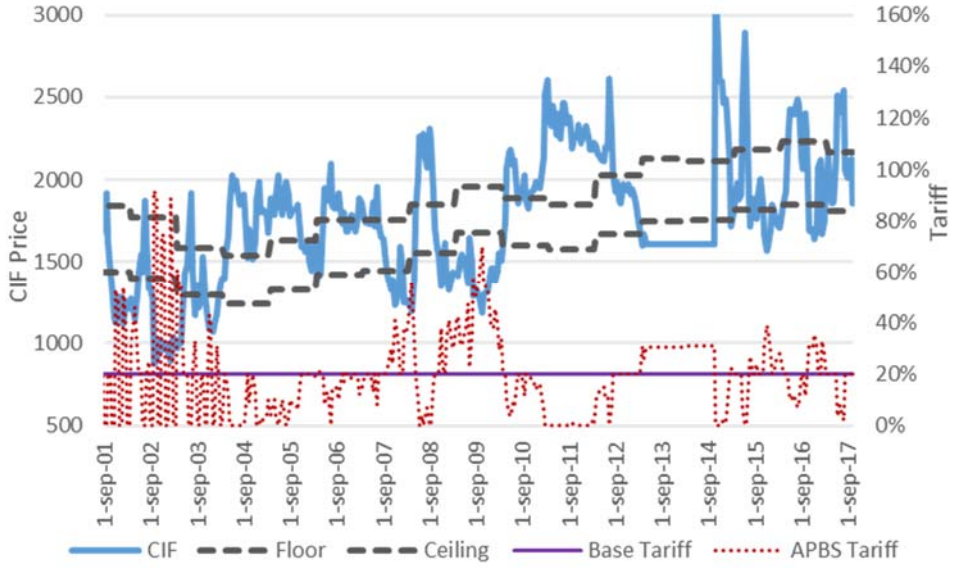
If the MFN tariff of the linked product ($\boldsymbol{t_{linked.}}$) is lower than the marker MFN tariff ($\boldsymbol{t_{mark.}}$) an additional tariff is applied based on the additional tariff calculated for the relevant marker product ($\mathbf{adc}$) as follows:

$$\text{Tariff Reduction} = \text{lower value between: adc}* \frac{t_{mark.}}{t_{linked.}} \text{ y adc-}(t_{mark.}\text{-}t_{linked}) \quad (6)$$

Regarding tariff reductions, the same reduction of the relevant marker product will always be applied, and in no case may this be greater than the MFN tariff of the related product in question (there can be no negative tariffs).

In the manner described above, the applicable tariffs are determined for each of the products that are currently covered by the SAFP, both markers and linked. The following graph shows an example of the application of the system for the case of pork meet between 2001 and 2016. As can be seen, in episodes of low prices such as in the period 2002-2003, the system implies the application of high tariffs, even close to 100%; while in periods of price increases such as in 2011, the application of tariffs is completely null.

Example of the application of the SAFP for pork



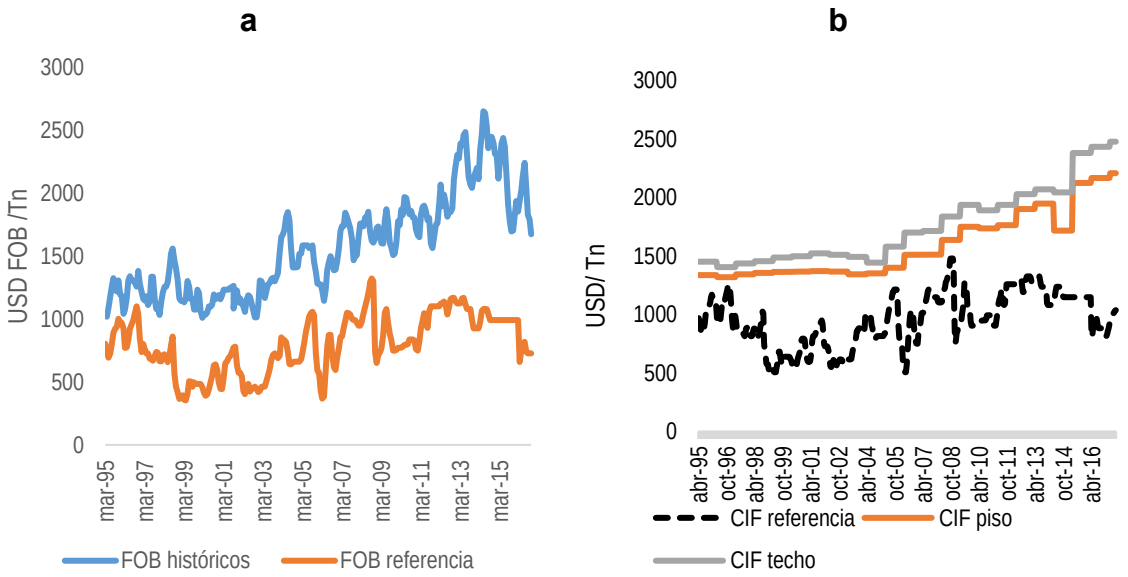
Source: Author's **calculations based on CAN data**

However, there are cases, such as in the bands of barley and chicken cuts, in which the tariffs resulting from the application of the methodology do not respond to the variability of the reference prices. In the case of the barley band, it is observed that the CIF reference price has remained constant at 226 dollars per ton since August 2007 due to the source of information did not report more data. Consequently, the band does not reflect the volatility of barley market prices, and the result is turned artificially into a CIF reference price lower than the floor price that only varies when deflated by the United States CPI. Additionally, the width of the band for each year is reflecting the historical volatility of the deflator and not of the market on which the volatility is to be minimized.

In the case of the band of chicken cuts, unlike the 12 remaining bands, Decision 371 of CAN made a separation of markets for reference prices and historical prices, the latter used for the calculation of floor prices. and CIF ceiling. To calculate the reference price, it takes the FOB price of chicken cuts, while for historical prices the FOB price of the whole chicken is taken, resulting in a positive differential in favor of the second.

The graph 2a shows the behavior of the historical and reference FOB prices for the band of chicken cuts, taking the source indicated for each one in the previous paragraph. In graph 2b, the dotted line corresponds to the CIF reference prices, while the other lines to the floor and ceiling prices for the band of chicken cuts. As a result, the floor and ceiling prices of this band have been well above the fortnight CIF reference prices, making tariffs higher than 100% in several months.

Band Price Performance-Chicken Cuts



Source: Author's elaboration based con CAN data.

Annex 3. Summary analysis of the MFN tariff, 2006, 2010, 2011 and 2017

Product description	2006		2010[a]		January-July 2011[b]		August-December 2011[b]		2017	
	No. of lines	Average (%)	No. of lines	Average (%)	No. of lines	Average (%)	No. of lines	Average (%)	No. of lines	Average (%)
Total	**6,993**	**12.0**	**7,273**	**12.2**	**7,285**	**8.2**	**7,292**	**6.2**	**7,708**	**7.1**
HS 01-24	989	17.5	1,042	19.2	1,045	15.3	1,045	15.0	1,284	15.6
HS 25-97	6,004	11.0	6,231	11.0	6,240	7.0	6,247	4.7	6,424	5.4
By WTO category										
Agricultural products	943	16.5	959	18.3	966	14.8	966	14.5	1,053	15.4
Animals and products of animal origin	106	23.6	111	32.4	111	28.5	111	25.2	140	20.3
Dairy products	34	21.3	35	58.9	35	56.2	35	55.5	36	55.1
Coffee and tea, cocoa, sugar, etc.	171	17.2	180	16.0	181	11.1	181	11.3	304	14.1
Cut flowers, plants	53	8.4	52	8.7	52	7.5	52	7.5	35	12.7
Fruit and vegetables	213	17.7	221	17.7	227	15.7	227	15.7	141	14.4
Cereals	36	20.8	39	19.1	39	14.8	39	15.4	113	13.2
Oilseeds, oils and fats and products thereof	106	15.0	103	12.1	103	3.8	103	4.1	28	13.9
Beverages and spirits	52	18.8	54	18.9	54	14.4	54	14.4	71	14.2
Tobacco	12	16.7	12	16.7	12	12.9	12	12.9	8	5
Other agricultural products n.e.s.	160	10.0	152	9.1	152	8.5	152	8.4	177	9.9

Product description	2006		2010[a]		January-July 2011[b]		August-December 2011[b]		2017	
	No. of lines	Average (%)	No. of lines	Average (%)	No. of lines	Average (%)	No. of lines	Average (%)	No. of lines	Average (%)
Non-agricultural products (including petroleum)	6,050	11.3	6,314	11.3	6,319	7.2	6,326	4.9	6,655	5.8
Non-agricultural products (excluding petroleum)	6,021	11.3	6,284	11.3	6,289	7.2	6,296	4.9	6,624	5.9
Fish and fishery products	138	18.8	168	18.5	164	13.9	164	13.7	316	14
Mineral products, precious stones and precious metals	374	10.0	377	10.1	377	6.1	377	3.6	1,120	2.7
Metals	706	10.0	727	10.1	728	5.7	734	3.0	1,596	1.9
Chemicals and photographic goods	1,421	7.4	1,525	7.3	1,519	5.1	1,519	2.0	372	5.2
Leather, rubber, footwear and travel goods	211	13.1	211	13.1	211	8.1	211	6.5	698	6.1
Wood, wood pulp, paper and furniture	325	12.9	329	12.8	329	7.9	329	6.2	255	40
Textiles and clothing	943	18.3	950	18.3	949	9.7	949	8.7	208	8.8
Transport equipment	193	14.2	218	14.8	239	13.1	239	11.1	804	2
Non-electrical machinery	759	9.1	800	9.0	793	5.6	794	2.6	425	3.4
Electrical machinery	406	10.2	410	10.3	410	6.4	410	3.7	258	11.4
Non-agricultural products n.e.s.	545	10.9	569	11.6	570	9.1	570	7.5	572	7
Petroleum	29	10.0	30	9.7	30	5.0	30	1.0	31	1.6
By ISIC sector[c]										
Agriculture and fishing	399	11.7	408	11.7	413	10.1	413	9.9	524	10.5
Mining	110	5.2	108	5.2	108	5.0	108	1.3	109	1
Manufacturing	6,483	12.1	6,756	12.3	6,763	8.1	6,770	6.0	7,074	7
By HS Section										
01 Live animals; animal products	268	20.7	305	27.5	302	23.7	302	22.6	470	19
02 Vegetable products	378	14.6	380	14.4	386	12.3	386	12.5	435	13.1
03 Fats and oils	62	17.3	64	13.9	64	3.9	64	4.3	66	15.5
04 Prepared foodstuffs, etc.	281	18.4	293	18.1	293	13.1	293	12.9	313	14.1
05 Mineral products	194	6.2	192	6.1	192	5.0	192	1.0	198	0.9
06 Products of the chemical or allied industries	1,340	6.6	1,423	6.3	1,419	4.9	1,419	1.8	1,493	1.7
07 Plastic and rubber	298	13.2	317	13.1	315	6.7	315	4.9	315	4.8
08 Raw hides and skins	80	12.1	78	12.4	78	8.5	78	7.7	78	7.2

Product description	2006		2010[a]		January-July 2011[b]		August-December 2011[b]		2017	
	No. of lines	Average (%)	No. of lines	Average (%)	No. of lines	Average (%)	No. of lines	Average (%)	No. of lines	Average (%)
09 Wood and articles of wood	98	12.3	107	12.5	107	6.5	107	5.0	145	3.4
10 Pulp of wood, paper, etc.	204	12.6	202	12.5	202	8.2	202	6.3	196	5.5
11 Textiles and textile articles	930	18.1	936	18.1	935	9.6	935	8.6	941	15.1
12 Footwear, hats and other headgear	58	18.8	56	18.8	56	12.8	56	12.9	55	22.7
13 Articles of stone	163	13.8	168	13.9	168	6.6	168	5.0	169	3.8
14 Precious stones, etc.	57	11.1	57	11.1	57	7.1	57	4.2	59	3.2
15 Base metals and articles of base metal	690	10.4	713	10.5	714	5.9	720	3.4	721	3.1
16 Machinery and mechanical appliances	1,199	9.4	1,236	9.3	1,229	5.9	1,230	3.1	1,253	2.5
17 Transport equipment	205	14.1	230	14.6	251	12.8	251	10.7	270	11.1
18 Precision instruments	303	6.9	285	7.1	285	5.6	285	2.8	281	2.5
19 Arms and ammunition	28	18.2	69	17.5	69	14.9	69	14.9	69	14.9
20 Miscellaneous manufactured articles	150	17.9	155	18.0	156	13.1	156	13.0	174	12.2
21 Works of Art	7	20.0	7	20.0	7	15.0	7	15.0	7	15
By state of processing										
First stage of processing	810	11.6	843	11.8	845	9.9	845	8.5	990	9
Semi-processed products	2,348	10.0	2,429	9.7	2,425	5.2	2,431	2.5	2,540	2.6
Fully processed products	3,835	13.2	4,001	13.8	4,015	9.6	4,016	7.9	4,178	9.4

1. a Includes the annual average tariffs of the Andean Price Band System (SAFP).
2. b Includes the semiannual tariffs of the SAFP.
3. c ISIC (Rev.2), except for electricity (one line).
4. *Source*:WTO Secretariat estimates, based on data supplied by the Colombian authorities. Taken from (WTO, 2012) and (WTO, 2018).

Annex 4. Trade Restrictiveness Indexes -TRIs-,

Simple measures of tariffs like simple averages or weighted averages could be biased, because they are dependent on their individual levels. As explained by Anderson & Neary *(1996)*, the restrictiveness of a countries trade policy is easily measured by the level of tariffs when there is only one good, but when multiple goods, and tariffs, are bundled, things are not so easy. For instance, if a country presents a general ad valorem tariff of 5%, but some specific products are highly protected, and an ad-valorem tariff of 200% its imposed on this subset of products, the simple average calculation will be biased towards a higher average level, this is a common problem of the simple average estimator of the mean in the presence of outliers. On the other hand, if we use import weighted averages of tariffs, instead of the simple average example presented, we most likely will conclude that the average is 5%, because the products for which the prohibitive tariff of 200% is applied will have near zero levels or absent imports, and in this sense none of this measures have a microeconomic (social welfare) foundation *(Anderson & Neary, 1996)* and does not allow for any welfare inference based on them.

Trade Restrictiveness Indexes -TRIs-, are a better way to measure the effect of trade policy (in this case tariffs) on the economy of a country. Anderson & Neary *(1996)* propose TRIs as a solution for the problems expressed above, as this scalar measures "*the uniform tariff which is equivalent (in welfare sense) to a given protective structure*" *(Anderson & Neary, 1996)*. Feenstra *(1995)* developed a partial equilibrium methodology to express TRIs in a single expression, that measures restrictiveness as a weighted average of the squared variables fo import tariffs, where the weights reflect the demand price elasticity for individual products and therefore relies on estimations for these elasticities. Kee, Nicita, & Olarreaga *(2008)* proposed an econometric method for estimate import demand elasticities for 117 countries at a disaggregated level of products (4900 -six digit – Harmonized System classification of products). As explained by Kee, Nicita, & Olarreaga *(2008)*, TRIs can be estimated by the following expression:

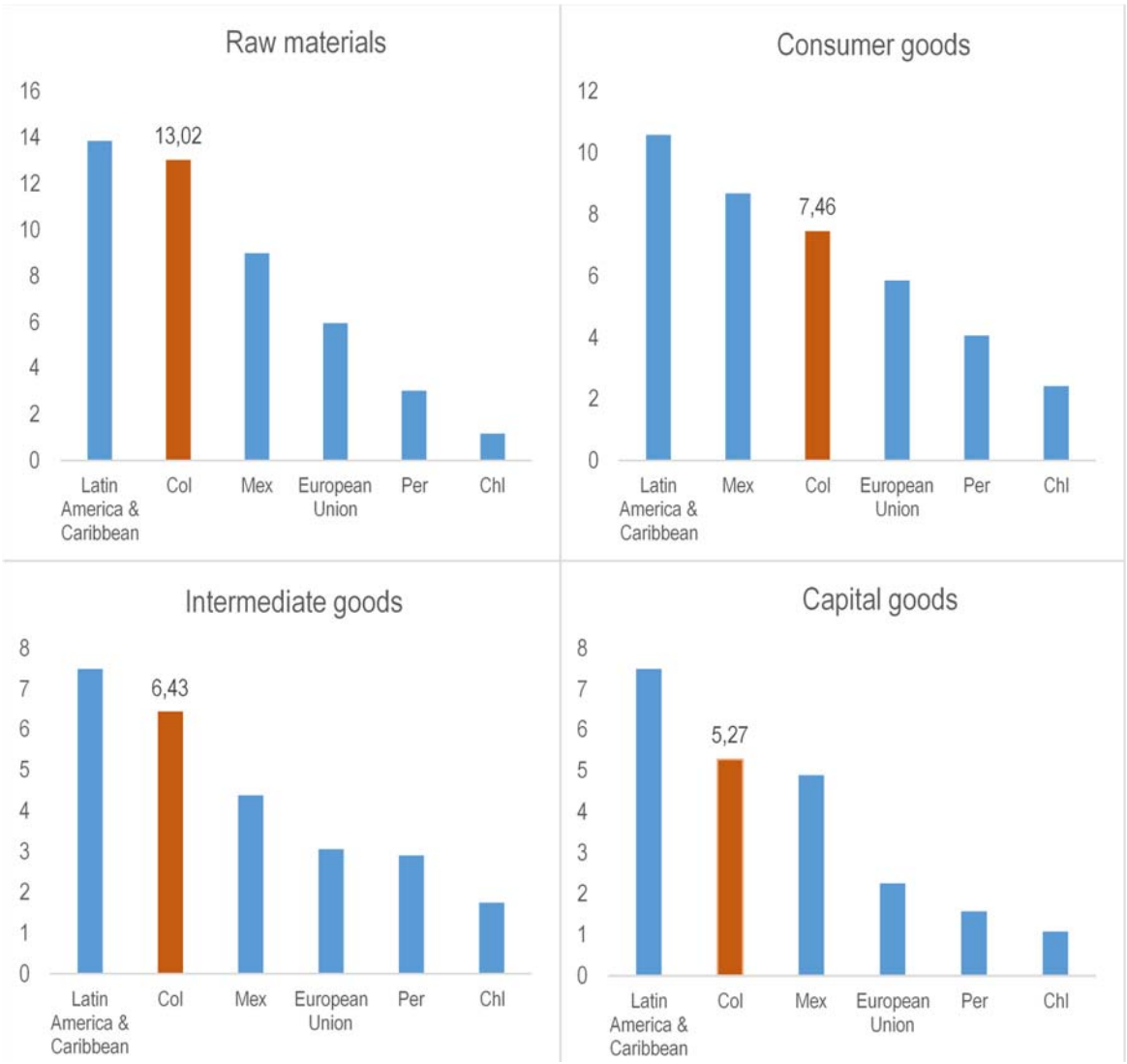
$$TRI_C = \left(\frac{\sum_n m_{n,c} \varepsilon_{n,c} T_{n,c}^2}{\sum_n m_{n,c} \varepsilon_{n,c}} \right)^{1/2}$$

Where $m_{n,c}$ represent the import value of product "*n*" form country "*c*", $\varepsilon_{n,c}$ is the import demand price elasticity of each product *n* on country *c*, and T the tariff imposed on product *n* by country *c*. We estimated TRIs, using the previous expression employing data from UNCTAD - TRAINS for tariffs (MNF and applied), and COMTRADE for values of imports, and using the elasticities and methodology by (Kee, Nicita, & Olarreaga, 2008). Moreover, TRIs can be decomposed on the squared of the import weighted average tariffs ($\bar{T}_{n,c}^2$), the tariff variance ($\sigma_{n,c}^2$) and the covariance between the tariff squared and import demand elasticities (ρ_c), and therefore the following formula can be used to decompose how much each component explains form the total restriction measured by TRIs.

$$TRI_C = \left(\bar{T}_{n,c}^2 + \sigma_{n,c}^2 + \rho_c\right)^{1/2}$$

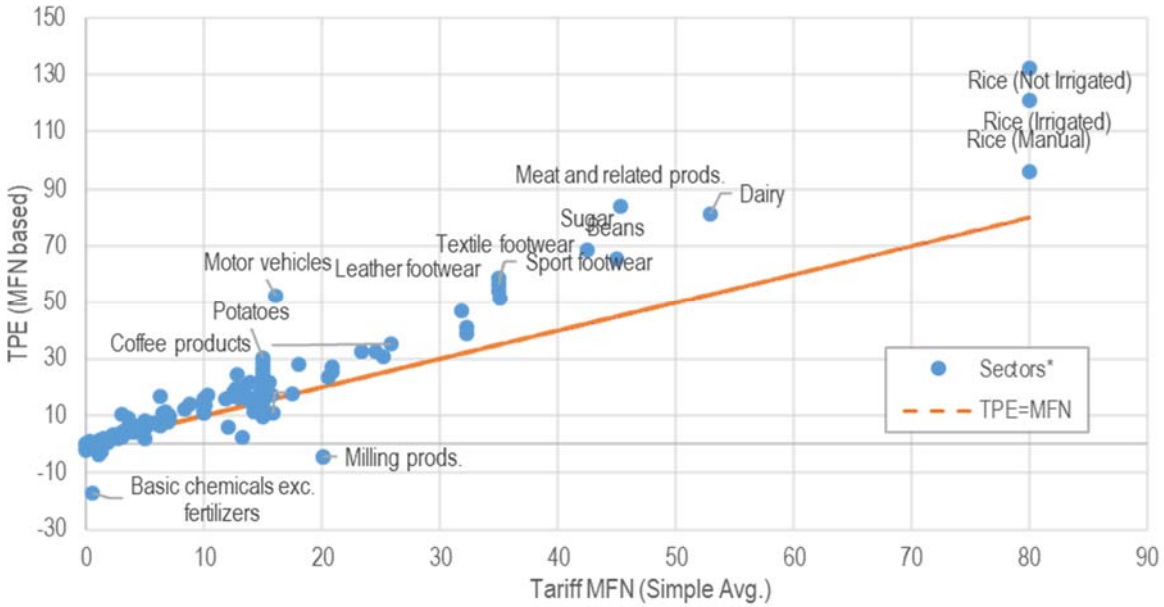
$$\frac{\bar{T}_{n,c}^2}{TRI_c^2} + \frac{\sigma_{n,c}^2}{TRI_c^2} + \frac{\rho_c}{TRI_c^2} = 1$$

Annex 5. Tariff dispersion - Products by stages of processing (2019)



Source: UNCTAD-TRAINS.

Annex 6. Effective Protection Rates as of 2019 calculated using MFN tariffs



Source: Author's elaboration based on tariff definition decrees and tariff and customs administration DIAN and DANE for trade data. DNP Input Output matrices based on year 2012 production structures. Note: EPR assumes only tradable inputs using the Corden (1971, 1996) assumption. *Calculations do not include live animals producing sectors. Regarding Agricultural products, it is assumed that inputs like e.g. fertilizers are the same across products when linking tariff data with production structures, that are in general more aggregated.

No	Título	Autores	Fecha
		Silvia CALDERON	

2019

492	Forests and Conflict in Colombia	Rafael Isidro PARRA-PEÑA S. Barry REILLY	Julio	2019
493	la dinámica espacial de la coca en Colombia: ¿cómo una hidra?	Ricardo ROCHA GARCÍA	Julio	2019
494	Lineamientos y recomendaciones para el escalamiento de los servicios de extensión tecnológica en Colombia	Juan Pablo GARCÍA María Camila PATIÑO Oscar SALAZAR Edwin RAMIREZ	Julio	2019
495	Cadena Productiva de Azúcar, Confitería y Chocolatería Estructura, Comercio Internacional y Protección	Víctor Manuel NIETO GALINDO	Julio	2019
496	Determinantes socioeconómicos y nutricionales del sobrepeso y la obesidad en la población adulta del departamento del Guaviare	Carlos Fernando RINCON ROJAS Jineth Alejandra NIETO VANEGAS	Julio	2019
497	Actualización de la estimación de los indicadores “Razón Precio–Cuenta”	Gustavo HERNANDEZ DIAZ Mariana MATAMOROS CARDENAS Andres Felipe SANCHEZ SEGURA	Agosto	2019
498	Estimación del precio – cuenta de la mano de obra	Mariana MATAMOROS-CARDENAS Tania LAMPREA BARRAGAN Gustavo Adolfo HERNANDEZ DIAZ	Agosto	2019
499	El valor social del tiempo en Colombia	Gustavo HERNANDEZ DIAZ	Agosto	2019
500	Determinantes de la productividad agrícola	Norberto ROJAS DELGADILLO	Agosto	2019
501	Educación en Colombia: Un análisis regional	Norberto ROJAS DELGADILLO	Agosto	2019
502	La estructura sectorial de Colombia: Un análisis insumo-producto	Julian Andres VILLAMIL Luis Felipe QUINTERO Gustavo Adolfo HERNANDEZ-DIAZ	Septiembre	2019
503	Generación de empleos y clústeres	Julian Andres VILLAMIL Luis Felipe QUINTERO Gustavo Adolfo HERNANDEZ-DIAZ	Septiembre	2019
504	Estimación de impactos del cambio climático en el sector agricultura y seguridad alimentaria	Sioux F. MELO L. Leidy RIVEROS Germán ROMERO Juan Camilo FARFÁN Andrés ÁLVAREZ-ESPINOSA Carolina DÍAZ	Diciembre	2019

2020

505	Modelo de Gravedad para los flujos de comercio internacional de Colombia	Andres Felipe SANCHEZ SEGURA Gustavo Adolfo HERNANDEZ-DIAZ	Enero	2020
506	Impacto de las regalías: Un análisis insumo - producto	Gustavo Adolfo HERNANDEZ-DIAZ	Enero	2020
507	Brecha Salarial De Género: Estudio De Caso De Los Contratistas Independientes Del Estado En Colombia	Carlos Alberto BARRETO NIETO Agustín JIMENEZ OSPINA Diego Fernando LEMUS POLANÍA Pablo MONTENEGRO HELFER Diana Paola RAMÍREZ	Mayo	2020
508	Una medida de los efectos potenciales del Covid-19 en el empleo: el caso de la política de aislamiento preventivo obligatorio en Colombia	Tania LAMPREA BARRAGAN Vanessa OSPINA-CARTAGENA Gustavo Adolfo HERNANDEZ DIAZ Ana RIVERA-MORENO	Mayo	2020
509	Compensación del IVA para los hogares más vulnerables: cuantificación y efectos distributivos.	Javier AVILA MAHECHA Tania LAMPREA BARRAGAN Gabriel Armando PIRAQUIVE GALEANO	Mayo	2020
510	Brechas de Género en el trabajo Doméstico y de Cuidado No Remunerado en Colombia	Vanessa OSPINA-CARTAGENA Andrés GARCÍA-SUAZA	Junio	2020
511	Matrices insumo-producto en un análisis regional Aplicación: efectos de política económica frente Covid-19	Erick CESPEDES-RANGEL Gabriel Armando PIRAQUIVE-GALEANO	Junio	2020
512	Diferencias regionales del impacto del confinamiento en Colombia	Gustavo Adolfo HERNANDEZ-DIAZ Luis Felipe QUINTERO	Junio	2020
513	Potencialidades y obstáculos del sector turismo en Colombia	Natalia MORERA-UBAQUE	Agosto	2020

ARCHIVOS DE ECONOMIA

No	Título	Autores	Fecha
2020			
514	Nueva Medición de Desempeño Fiscal Territorial	Andrés Felipe URREA Jose Lenin GALINDO María Victoria OSORIO David Ricardo JIMENEZ Laura Elena SALAS	Septiembre 2020
516	cuantificación de la Brecha de Financiación en Adaptación al Cambio Climático en Colombia	Juan C. FARFÁN R	Septiembre 2020
517	Medida de la Disponibilidad de Trámites en Colombia (MDT)	Luis Vidal BEJARANO BEJARANO Lorena PÉREZ RINCONES Harold Enrique VELANDIA ZARATE	Septiembre 2020
518	Un Análisis Espacial Del Contagio Del Covid-19: El Comienzo	Ricardo ROCHA GARCÍA	Septiembre 2020
519	"Dinámica de la pandemia COVID 19 en Colombia: ¿Se alcanzará el pico de contagio?"	Álvaro CHAVES	Septiembre 2020
520	Estimación De Una Renta Básica Para Colombia	Jhonathan RODRIGUEZ Juliana CAMARGO Valentina CARDONA	Septiembre 2020
521	Relación entre la acumulación regulatoria y el Producto Interno Bruto en Colombia	José Libardo MEJÍA CIRO	Septiembre 2020
522	¿Qué factores inciden en la demanda de crédito de la microempresa en Colombia?	Freddy CASTRO Daniela LONDOÑO Álvaro José PARGA CRUZ Camilo PEÑA GÓMEZ	Noviembre 2020
523	Gastos de Inversión Pública para el financiamiento de la Gestión del Riesgo de Desastres en el orden nacional y subnacional para el periodo 2011-2019 en Colombia	Lina María GALLEGO SERNA Carolina DÍAZ GIRALDO Lina María IBATÁ MOLINA	Noviembre 2020
2021			
524	Predicción del delito en Colombia: experiencia en ciudades intermedias	Juan David GÉLVEZ-FERREIRA Pablo MONTENEGRO HELFER María Paula NIETO RODRÍGUEZ Carlos Andrés ROCHA RUIZ	Enero 2021
525	Política de Libre Competencia Económica en Colombia: Diagnóstico y recomendaciones de política pública	Alejandra Rosalía JARAMILLO LONDOÑO Ana Milena GÓMEZ MÁRQUEZ Juan Sebastián RODRÍGUEZ REYES	Febrero 2021
526	Inclusión financiera empresarial: evidencia con registros administrativos	Juan Guillermo VALDERRAMA Federico MEDINA Camilo PEÑA GÓMEZ Freddy CASTRO Daniela LONDOÑO	Marzo 2021
527	Encadenamientos productivos del sector agropecuario En Colombia	Natalia MORERA UBAQUE	Abril 2021
528	A note on the tariff structure of Colombia	Camilo RIVERA PEREZ Lida Milena QUINTERO RODRIGUEZ José Bernardo GARCÍA GUZMÁN Luisa Fernanda OYUELA RIVERA Julian David ZULUAGA TORRES Francisco VARGAS MORALES	Mayo 2021