240

EFFECTIVE RATES OF PROTECTION IN BRAZIL: 2000 TO 2015

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DISCUSSION PAPER

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EFFECTIVE RATES OF PROTECTION IN BRAZIL: FROM 2000 TO 2015[1]

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CONTENTS

ABSTRACT

This paper calculates effective tariffs by economic sector for Brazil from 2000 to 2015. The effective tariff differs from the nominal tariff in that it takes into consideration the protection given to inputs along the production chain. A sector whose products are protected by high tariffs may also be burdened by high tariffs on its inputs, leading to a lower effective tariff. Two series are calculated: 2000 to 2009 and 2010 to 2015. The reason for this is that the National Accounts changed their classification of economic sectors in 2010. Results indicate that: *i*) effective rates of protection are highly varied in Brazil, according to sector; *ii*) effective rates of protection have become slightly more homogeneous in the 15 years from 2000 to 2015; and *iii*) some sectors have seen their rates of protection vary considerably over this fifteen-year period, but most did not.

Keywords: trade policy; effective rates of protection; nominal rates of protection.

1 INTRODUCTION

The impact of tariff structure upon the producers of a given product depends not only on the nominal tariff levied upon the importation of that product, but also on the tariffs of all the inputs that are part of its production chain. A tariff applied upon the import of a given class of product will give its domestic producers an advantage, since it will shield them from import competition. Tariffs levied upon that product's inputs, on the other hand, will result in a higher cost for the producers since they will pay more for these inputs.

The effective tariff rate considers both of these effects. Its calculation consists of subtracting from the tariff rate on the final product the tariffs levied upon its inputs. The comparative analysis of effective protection rates shows us how changes in the tariff structure and the structure of the economy may result in higher or lower protection for each sector, often quite different from the nominal protection rates.

The study of effective protection rates is particularly important when considering regional or sectoral impacts. The impact of tariffs upon labor market outcomes varies according to both the tariff structure and the production chains relevant to each region or sector. In this paper, we will analyze only differences between economic sectors in Brazil during the 2000 to 2015 period. We will not study regional differences.

The main objective of this paper is to describe the methodology used to calculate the effective tariff by economic sector. We will also calculate effective tariff rates for economic sectors from 2000 to 2015 using the Input Output Matrices from the National Accounts.

2 METHODOLOGY

Up to the end of the Eighties, Brazilian commercial policy had made extensive use of non-tariff barriers, which limited or outright prohibited the importation of products that competed with national production (Kume, Piani and Souza, 2003). The beginning of the Nineties saw a rapid transition in Brazilian trade policy and non-tariff barriers were largely substituted by a tariff structure decided upon by the 1991 Tariff

Reform and the Mercosur Common External Tariff (TEC). Although there have been some changes in individual tariffs since the Nineties, *grosso modo*, the tariff structure is more or less the same (Castilho, 2015).

Graph 1, below, shows selected percentiles of the Brazilian tariff distribution from 2000 to 2015. The percentiles are p10, p50 (the median tariff), and p90 and there are two panels. The first panel (on the left since we are writing in English and not Arabic or Hebrew) shows the percentiles calculated using an unweighted tariff distribution in which each sector is "worth" the same as any other sector. The second panel (on the right) shows the same statistics calculated using a tariff distribution in which imports (in R$) are used as the weight of each sector´s tariff.

GRAPH 1
Nominal Tariff Percentiles (2000-2015)
1A – Panel 1: unweighted

1B – Panel 2: imports as weights

Source: WITS.
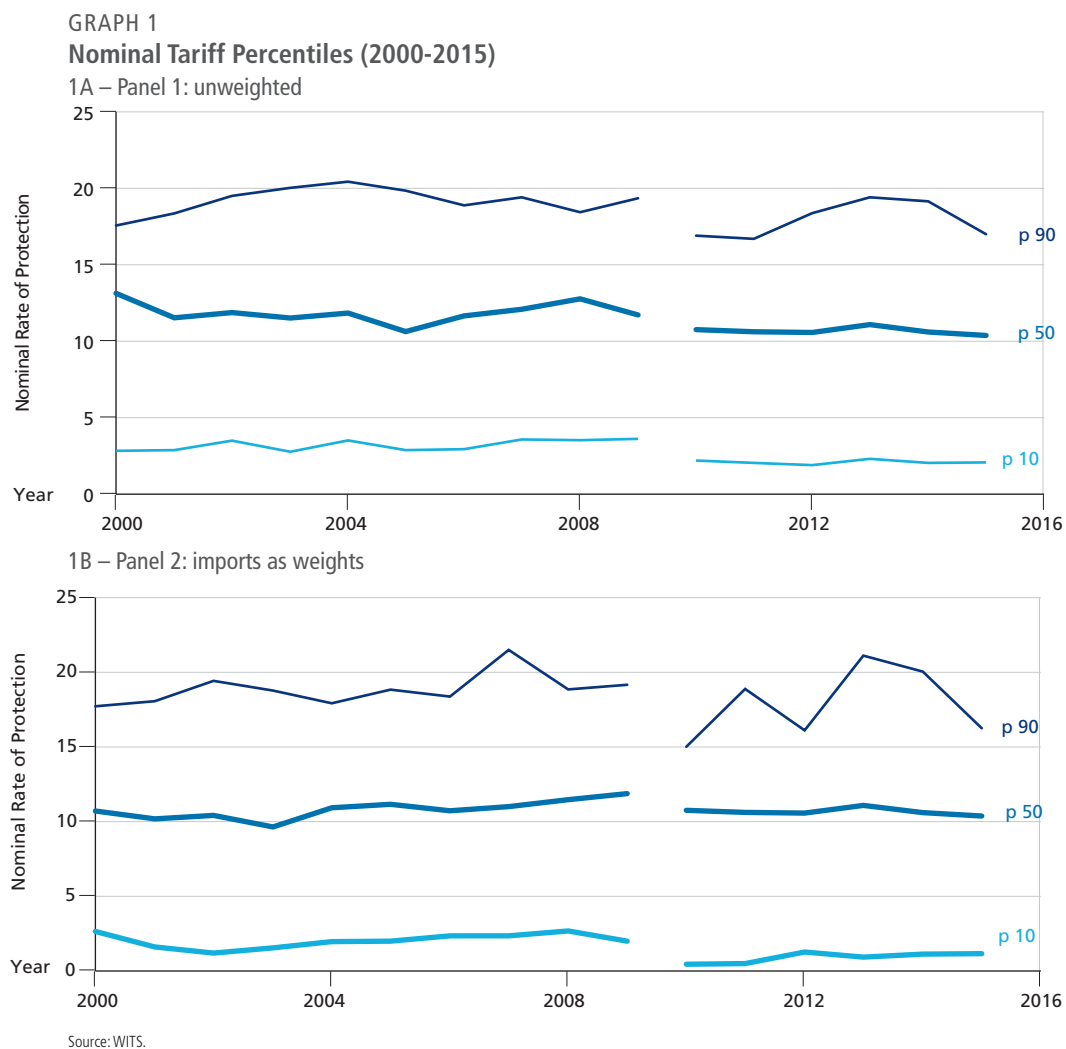
Graph 1 shows in visual terms what Castilho (2015) states: while there are definitely changes in individual tariffs, the tariff structure as a whole stays more or less the same over the period.

Nevertheless, the effective protection for some sectors or production chains has changed considerably since the tariff reform of the Nineties. Marta Castilho (2015) states that while there have been no major changes in tariff policy, the effective tariff enjoyed by various sectors has changed over time. These variations can be attributed to some changes in individual product nominal tariffs but also to changes in the structure of the economy such as technical changes and expansion of global value chains.

Castilho (2015) notes that the evolution of effective tariffs has an impact upon the incentive given to various production chains in the Brazilian economy. This happens because the effective tariff depends not only upon nominal tariffs, but also upon the Input Output Matrix, which changes with time. Let us see how.

2.1 ERP Formula

According to Balassa (1965) the effective protection e_j of product j can be calculated using the following formula:

$$e_j = \frac{(t_j - \sum a_{ij} t_{ij})}{(1 - \sum a_{ij})} \qquad (1)$$

According to Equation (1), effective protection is equal to the nominal tariff of the product being protected (t_j) minus the tariffs of all the inputs (t_i) weighted by their relative importance in the product's production chain (a_{ij}). The intuition is clear: a product is more highly protected if its inputs are not.

Corden (1966; 1971) shows that under reasonable assumptions on substitution of inputs, equation (1) above is equivalent to the following formula:

$$e_j = \frac{(Vd_j - Vw_j)}{Vw_j} \qquad (2)$$

Equation (2) calculates effective protection using the difference between value added with (Vd) and without (Vw) protection of product j.

We will use the first equation in this article because the value added of each product can be calculated using the technical coefficients a_{ij}, which can be calculated from the Input Output Matrices.

The technical coefficient matrix a_{ij} is calculated using the D matrix (participation of each sector in the production of national products), the Bn matrix (technical coefficients of national inputs) and the Bm matrix (technical coefficients of imported inputs). These matrices are all part of the Input Output Matrix of the National Accounts. So we have:

$$a_{ij} = a_{ij}^d + m_{ij}^d \tag{3}$$

Where:

- a_{ij}^d is the technical coefficient for sector i (or for all its products, acquired on the internal market) for the production of (products of) sector j. The matrix with the coefficients a_{ij}^d is a product of the multiplication of the D and Bn matrixes of the National Accounts.[1]

- m_{ij}^d is the technical coefficient for imported sector i (products of this sector acquired on the international market) for the production of products of sector j. The matrix with the coefficients m_{ij}^d is a product of the multiplication of the D and Bm matrixes of the National Accounts.

Results should be analyzed in relative terms between economic sectors.

2.2 Data

To calculate effective protection rates, we need data with the same classification structure of the Input Output Matrices in the National Accounts data provided by the Brazilian Institute for Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística* – IBGE):

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1. More intuitively, each element a_{ij}^d of the matrix is the sum of the participation of each product of sector i as an input in the production of sector j, weighted by the share of each of these products that is produced by sector i. It is the same for m_{ij}^d, but with imported inputs.

- For the 2000 to 2002 period, we used the 2000 Input Output Matrix, which is disaggregated into 55 economic sectors (110 products);

- For the 2003 to 2009 period, we used the 2005 Input Output Matrix, whose level of aggregation is the same as the 2000 Input Output Matrix;

- For the 2010 to 2012 period, we used the 2010 Input Output Matrix, which is disaggregated into 67 economic sectors (127 products);

- For the 2013 to 2015 period, we used the 2015 Input Output Matrix, also disaggregated into 67 economic sectors (127 products).

We tried to use the Input Output Matrix that was closest to the tariff data for each year, but 2008 and 2009 were analyzed using the 2005 Input Output Matrix due to aggregation of economic sectors.

The WITS platform, provided by the World Bank, supplies tariffs applied by sector according to various sector classification schemes.[2] We chose to use the Harmonized System (HS) scheme. The HS is popular worldwide and also easily matched with the Mercosur Common Nomenclature (NCM), which is based upon the six-digit HS classification (NCM = HS + 2 digits). After associating HS tariffs with NCM, it is possible (though not trivial) to match tariff data to the economic sector classification of the Input Output Matrices using the IBGE translators.

The calculation of effective protection rates faces two data challenges.

The first and most important is that IBGE calculates Input Output Matrices every five years (during the period we study here, 2000, 2005, 2010 and 2015). This means that effective protection tariffs may "jump" up or down every five years, not because reality changes suddenly, but because measurements are made only every five years. We thought of using moving averages, but the price to pay would be to lose precision in changes of effective protection rates.

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2. Tariffs can be aggregated according to simple averages or weighted by import volume. In this paper we chose to use weighted tariffs for computing effective rate of protection. Tables for effective rate of protection using simple average of nominal tariffs can be found in the annex.

Another problem is that by using relatively aggregated classification schemes, we lose information in translation. For example, when more than one sector is associated to a given sector in a more aggregated classification scheme only one sector from the more disaggregated scheme is used and the choice is often arbitrary. The translators are imperfect and by far the most labor-intensive part of the process is matching trade statistics and Input Output Matrix statistics.

3 RESULTS

The effective rates of protection by three-digit economic sector can be found on tables 1 and 2. Very high or very low values are striking because they show exceptional incentive or production conditions:

- The value of the effective tariff is usually higher than that of the nominal tariff. If the two are equal, then the product's tariff multiplied by the value added in previous steps of the production chain is equal to the sum of the value added in previous steps weighted by the nominal tariffs, as shown by the equation below.

$$t_j \sum a_{ij} = \sum t_{ij} a_{ij} \qquad (4)$$

Equal tariffs for all goods will produce the same effective and nominal tariffs, but other tariff structures may also do so.

- If value added is the same with and without tariff protection, then the effective tariff is zero.
- A negative effective protection rate means that the product is being taxed and not protected. A strongly negative effective tariff may mean that that industry is so efficient that it can take the tariff tax and still remain competitive. It may also mean that it is protected by non-tariff barriers.

Table 1, below shows effective tariffs between 2000 and 2009. The cells are colored so as to show the economic sectors that are most protected (in red) and those most heavily taxed by tariffs on their inputs (in green). Yellow and orange colors indicate in between sectors.

12

TABLE 1
Effective tariff (2000-2009)

Sector	Code	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture and forestry	0101	8.4	8.2	8.2	9.6	7.2	5.0	5.0	5.1	5.1	4.4
Livestock and fisheries	0102	3.4	2.7	9.9	10.0	7.0	4.6	4.7	0.1	1.1	2.6
Oil and natural gas	0201	-2.1	-7.0	-7.2	-8.9	-8.1	-7.6	-6.6	-6.0	-5.8	-5.6
Iron ore	0202	4.4	4.1	1.9	1.7	0.4	-0.6	0.1	0.4	0.5	0.2
Other of the extractive industry	0203	-3.9	-3.7	-5.1	-6.4	-5.4	-6.4	-5.4	-5.0	-5.3	-5.6
Food and beverage	0301	42.3	41.4	35.0	32.6	26.7	26.6	27.1	28.3	28.1	28.5
Tobacco products	0302	36.6	34.6	30.5	43.3	22.6	35.6	30.3	26.7	20.8	26.0
Textiles	0303	28.4	25.5	26.9	23.7	22.1	21.9	23.6	24.1	26.7	33.6
Apparel and clothing accessories	0304	31.7	32.1	29.7	29.7	26.3	27.1	26.4	27.1	54.5	52.3
Footwear and leather products	0305	47.6	47.2	26.0	23.1	20.8	24.8	33.7	35.7	42.1	45.7
Wood products - except furniture	0306	13.6	13.6	14.0	12.2	8.6	7.5	9.3	10.0	10.3	10.1
Pulp and paper products	0307	12.9	11.1	13.5	14.1	13.2	12.0	13.7	15.1	16.3	15.9
Newspapers, magazines and CDs	0308	-6.5	-6.4	-6.2	-5.3	-2.5	-2.3	-1.9	0.3	-1.0	-1.1
Oil refining and coke	0309	-4.9	-11.1	-7.9	-4.6	-4.4	-2.9	0.4	-0.1	-2.8	-3.1
Alcohol	0310	50.5	45.1	42.7	36.5	30.4	26.2	-6.4	-6.5	29.7	32.7
Chemicals	0311	17.3	17.7	14.0	13.1	9.6	7.6	9.0	8.9	6.6	10.0
Resins and elastomers	0312	38.9	37.7	34.2	26.3	24.9	21.1	23.7	24.6	25.7	24.7
Pharmaceutical products	0313	12.5	11.2	5.8	5.4	6.5	5.5	6.5	6.6	5.5	5.4
Agricultural pesticides	0314	-3.6	23.2	2.9	0.8	-0.3	-0.7	6.2	21.9	11.7	13.9
Perfumery, toilet and cleaning prod.	0315	29.7	30.3	26.8	30.3	26.2	22.7	24.9	28.2	23.8	24.2
Paints, varnishes, and lacquers	0316	35.3	35.3	31.7	31.4	28.8	26.5	27.1	27.5	24.8	25.5
Miscellaneous chemical products	0317	15.8	15.2	13.1	13.0	12.0	9.7	12.2	12.7	12.1	11.3
Rubber, plastics and articles thereof	0318	33.6	32.9	30.8	28.5	26.2	23.7	23.0	23.6	23.9	23.5
Cement	0319	18.3	18.1	16.5	17.1	16.2	13.6	16.6	18.8	19.4	19.8
Manufacture of steel and derivatives	0321	25.1	23.9	24.2	21.5	18.4	15.9	16.2	19.1	18.5	19.4
Metallurgy of non-ferrous metals	0322	9.0	9.1	8.2	8.4	4.9	0.4	-0.8	1.3	5.0	5.5
Metal products - except machinery and equipment	0323	27.8	23.7	25.1	25.1	24.2	23.0	23.3	23.6	22.1	21.5
Machinery and equipment	0324	24.6	5.5	14.9	16.8	17.6	17.3	16.9	17.7	17.4	17.6
Household appliances	0325	38.9	25.6	20.8	32.2	33.3	31.7	31.6	32.1	30.5	29.7
Office machines and computers	0326	29.4	23.1	22.6	28.0	25.6	25.2	21.0	20.3	18.9	17.2
Automobiles, vans and com. vehicles	0330	116.0	118.0	115.0	212.5	161.8	175.6	190.6	205.8	204.8	198.3
Parts for motor vehicles	0332	26.8	28.3	30.1	27.3	26.0	23.8	24.5	24.5	24.7	23.4
Other transport equipment	0333	-0.3	-3.3	-3.5	-7.0	-6.8	-2.1	-3.7	-4.3	-3.2	-3.8
Furniture and other	0334	30.8	30.9	29.1	29.3	28.2	25.9	26.8	28.0	27.9	28.3

(Continues)

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Sector	Code	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Electricity, gas, water, sewage and urban cleaning	0401	26.3	25.9	24.1	23.0	20.6	20.1	8.7	5.2	2.9	1.6
Information services	0801	6.9	12.8	10.3	16.4	12.9	13.6	15.1	11.9	12.7	13.9
Business services	1103	16.4	17.7	18.4	17.4	17.7	15.7	13.8	12.8	13.5	11.6

Source: Tarifas Nominais do CAMEX/MDIC; Contas Nacionais do IBGE.
Elaborated by the authors.

Table 2 shows 2010 to 2015. It uses a slightly different economic classification scheme, which is due to changes in IBGE's economic sectors classification. The color scheme is the same as in table 1.

TABLE 2
Effective tariff (2010-2015)

Sector	Code	2010	2011	2012	2013	2014	2015
Agriculture	0191	4.6	4.5	3.6	12.2	6.7	7.4
Livestock	0192	-0.3	-0.9	-0.5	-3.3	-2.5	-2.6
Forest production, fisheries, and aquaculture	0280	3.4	3.6	3.0	6.7	2.1	1.9
Coal and non-metallic minerals	0580	-3.4	-3.6	-3.4	-3.6	-3.2	-2.9
Oil and gas	0680	-1.7	-1.7	-1.7	-2.2	-2.0	-1.9
Iron ore	0791	0.8	1.7	1.7	1.6	0.4	1.4
Non-ferrous metal ores	0792	-0.7	-0.6	-0.1	0.4	-1.2	-0.5
Slaughter and meat products, including dairy and fishery	1091	17.4	19.7	20.9	53.0	18.2	19.1
Sugar	1092	12.3	16.8	15.3	27.0	28.1	25.1
Other food products	1093	30.2	30.5	32.3	34.7	29.2	29.4
Beverages	1100	30.1	30.9	31.2	36.1	32.2	34.1
Tobacco products	1200	23.6	23.4	32.7	38.0	28.9	32.4
Textiles	1300	45.7	47.5	48.1	49.7	47.5	48.5
Apparel and clothing accessories	1400	46.4	45.7	47.1	56.4	50.6	47.8
Footwear and leather products	1500	45.9	47.6	50.1	58.7	54.0	54.9
Wood products	1600	13.5	13.0	13.7	17.9	15.3	15.4
Pulp, paper and paper products	1700	21.3	21.6	22.4	22.7	23.9	22.1
Printing and reproduction of recordings	1800	18.5	18.0	18.5	20.8	18.8	17.9
Oil refining and coking plants	1991	-2.4	-2.7	-2.7	-2.7	-2.1	-2.4
Biofuels	1992	65.1	67.6	68.3	27.3	25.4	19.9
Organic and inorganic chemicals, resins and elastomers	2091	16.4	14.5	15.4	15.1	14.1	13.5
Pesticides, disinfectants, paints and various chemicals	2092	23.4	24.6	23.2	27.6	22.2	19.1
Cleaning products, cosmetics/perfumes and toilet preparations	2093	30.3	29.6	31.3	44.9	39.0	38.5
Pharmaceutical and pharmacochemical products	2100	8.4	8.5	8.4	10.5	9.6	15.1
Rubber and plastic products	2200	24.8	25.0	25.2	30.7	27.9	27.8
Non-metallic mineral products	2300	17.1	17.3	17.7	26.8	22.8	18.8

(Continues)

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Sector	Code	2010	2011	2012	2013	2014	2015
Pig iron / ferro-alloys, steel and seamless steel tubes	2491	37.9	36.8	40.1	40.3	38.1	37.1
Metallurgy of non-ferrous metals and metal smelting	2492	11.7	13.2	14.1	18.9	14.7	15.5
Metal products, except machinery and equipment	2500	22.4	22.2	24.9	28.1	26.2	27.0
Computer, electronic and optical products	2600	10.7	11.1	11.3	14.3	14.2	21.7
Electrical machinery and equipment	2700	31.7	30.8	31.6	34.6	33.0	20.9
Mechanical machinery and equipment	2800	17.6	17.1	17.2	20.4	19.2	15.2
Motor vehicles, except parts	2991	75.6	75.5	73.5	125.5	94.8	90.7
Parts and accessories for motor vehicles	2992	21.8	21.6	21.7	27.7	25.8	23.9
Other transport equipment, except motor vehicles	3000	3.4	3.6	3.1	2.2	4.8	6.3
Furniture and products of various industries	3180	20.1	20.3	24.5	25.8	24.2	34.6
Electricity, natural gas and other utilities	3500	-1.5	-1.5	-1.5	-2.6	-2.4	-2.1
Editing and print-integrated editing	5800	-1.0	-0.7	-0.2	-0.2	-0.5	-0.8
Television, radio, cinema, sound and image	5980	25.5	25.0	24.8	27.2	26.1	24.5
Architectural, engineering services, and R&D	7180	4.7	4.7	4.2	4.8	4.8	4.8
Artistic, creative and entertainment activities	9080	8.2	6.2	5.5	6.5	5.7	6.2

Source: Tarifas Nominais do CAMEX/MDIC; Contas Nacionais do IBGE.
Elaborated by the authors.

Our calculations suggest that, in 2015, the following economic sectors were those that enjoyed the highest rates of effective protection (SCN 2010):

- motor vehicles, except parts;

- footwear and leather products;

- textiles;

- apparel and clothing accessories; and

- cleaning products, cosmetics/perfumes and toilet preparations.

The least protected (or most taxed) economic sectors are:

- coal and non-metallic minerals;

- livestock;

- oil refining and coking plants;

- electricity, natural gas and other utilities; and

- oil and gas.

A striking result is the large swings in effective tariffs over the fifteen years period studied for some sectors. For example, up to 2003, car production was protected by effective barriers close to 200%. By the end of the period, however, the sector's effective tariff had fallen to 90%. The effective tariff on metallurgy of non-ferrous metals likewise varied from -0.8% (2006) to 15.5% (2015) during the period under study. This means that although the Brazilian tariff policy remained roughly constant during the last 15 years, some sectors saw strong variations in their tariffs over this period. Some sectors whose effective tariff suffered high variations during the period are: agricultural pesticides; motor vehicles; alcohol; electricity, gas, water, sewage and urban cleaning; and biofuels.

Another result is that there is a visible tendency for the effective tariff rates to become more homogenous over time. While the standard deviation of the effective tariff across economic sectors was close to 24 percentage points during the first half of the first decade of the century, between 2010 and 2015 the same number was under 20 percentage points.

To allow easier visualization of the results in the two tables above, we will repeat graph 1, which was calculated using nominal tariffs, using effective rates of protection. The period is the same (2000 to 2015), as are the percentiles (p10, p50, and p90). On the left, we have the first panel with unweighted percentiles and, on the right, the second with the same statistics calculated using the effective tariff distribution weighted by imports.

GRAPH 2
Effective Tariff Percentiles (2000-2015)
2A – Panel 1: unweighted

2B – Panel 2: imports as weights
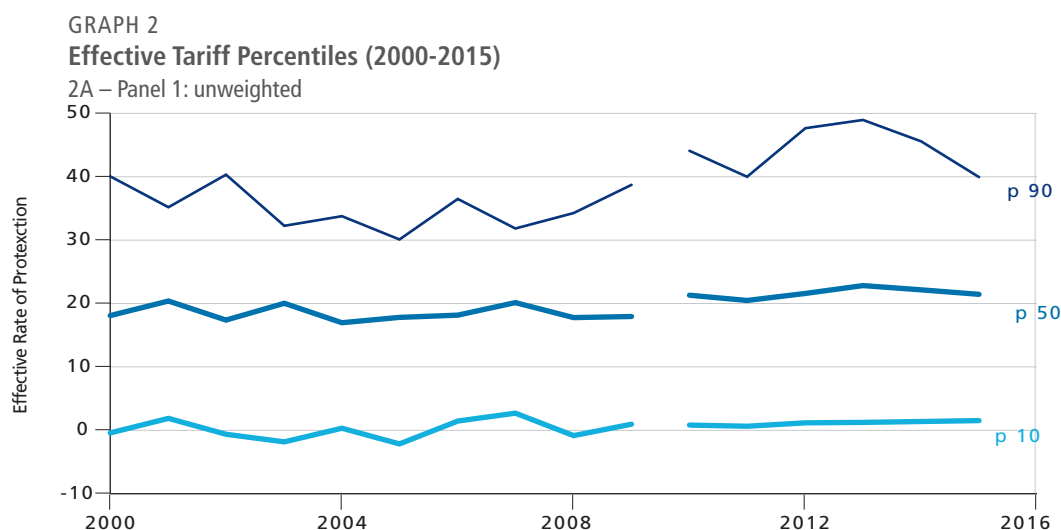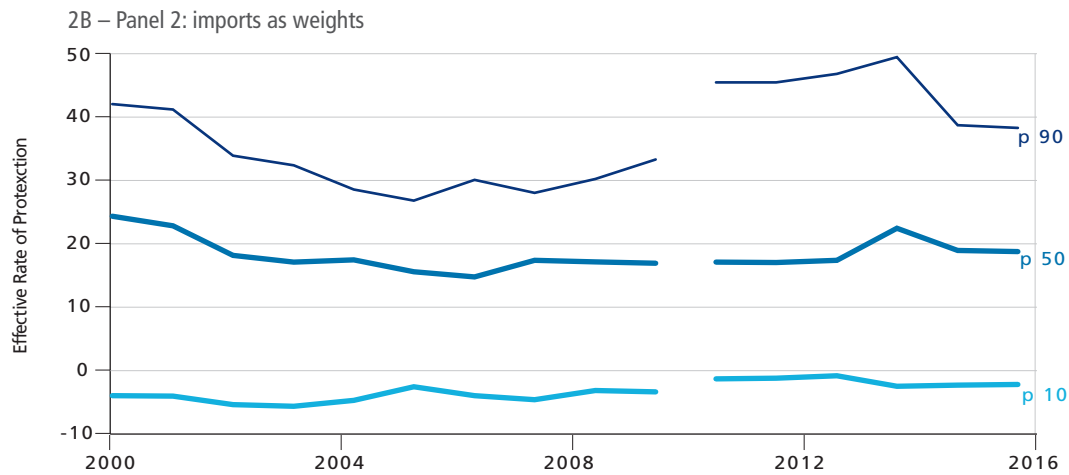
Source: tables 1 and 2.

Graph 2, in comparison with graph 1, shows that effective rates of protection vary much more than nominal rates. The highest effective rates of protection fall around 40%, going to 50% or close on a few years. The median rates are close to 20% (which was the level of the highest rates for nominal protection). The lowest rates are negative or zero. The variation in time is also more pronounced, particularly for the highest tariffs (p90).

4 CONCLUSIONS

Our objective was to update the effective protection calculations made previously for Brazil by various authors such as Castilho (2015) and Kume, Piani and Souza (2003). Due to small methodological differences, the numbers are not directly comparable. The qualitative results, however, can be compared. The main results are the following.

First, there is a large variation in effective protection across economic sectors. In the fifteen years between 2000 and 2015, the highest effective tariff we calculated was 212% and the lowest -11.1%. In general, the least protected sectors are those linked to commodities (usually also export sectors). The most highly protected sectors are all in industry.

Second, there appears to be a trend towards greater homogeneity in effective tariffs, visible in the reduction of the standard error.

Finally, there have been large swings in effective protection rates for some sectors. This is in agreement with the conclusion of Marta Castilho (2015), who states that effective protection rates have not been constant over time.

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ANNEX A

TABLE A.1
Nominal rate of protection: simple average (2000-2009)

Sector	Code	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture and forestry	0101	6.4	5.5	5.3	5.4	4.6	3.6	3.6	3.4	3.5	3.5
Livestock and fisheries	0102	10.5	9.8	10.2	10.2	7.5	4.6	7.5	3.8	7.4	6.4
Oil and natural gas	0201	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Iron ore	0202	5.0	4.5	3.5	3.5	2.7	2.0	2.0	2.0	2.0	1.8
Other of the extractive industry	0203	6.1	5.7	4.7	4.7	4.3	2.9	2.8	2.8	2.9	2.9
Food and beverage	0301	16.2	16.1	14.8	14.7	11.7	10.5	9.9	10.1	10.3	10.6
Tobacco products	0302	19.9	19.4	18.0	18.4	15.3	14.6	14.6	13.1	13.8	13.8
Textiles	0303	19.8	19.3	18.4	17.0	15.3	15.1	15.3	15.3	17.4	21.3
Apparel and clothing accessories	0304	22.9	22.4	21.4	20.0	18.1	18.4	18.2	18.3	30.5	30.8
Footwear and leather products	0305	23.8	23.0	17.2	17.1	15.2	13.9	15.3	14.9	17.6	17.6
Wood products - except furniture	0306	12.2	12.0	11.0	11.0	9.5	7.9	7.5	8.3	8.3	8.5

(Continues)

(Continued)

Sector	Code	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Pulp and paper products	0307	14.8	14.3	13.4	13.4	12.1	10.9	10.6	10.8	10.8	10.9
Newspapers, magazines and CDs	0308	10.3	9.6	9.1	9.1	8.5	7.7	7.3	9.0	8.2	8.2
Oil refining and coke	0309	2.9	1.5	1.3	1.3	1.2	0.9	0.9	0.9	0.9	0.9
Alcohol	0310	24.5	22.5	21.5	21.5	17.8	15.2	0.0	0.0	16.5	17.8
Chemicals	0311	9.8	9.2	8.1	8.1	7.2	5.9	5.9	5.8	5.8	5.8
Resins and elastomers	0312	14.8	14.2	13.2	12.8	11.7	10.5	10.5	10.6	10.5	10.4
Pharmaceutical products	0313	9.4	8.8	7.8	7.7	6.2	5.2	5.1	5.2	5.1	5.1
Agricultural pesticides	0314	9.6	12.5	8.2	9.3	6.0	5.3	2.8	7.9	6.6	9.0
Perfumery, toilet and cleaning prod.	0315	18.9	18.6	17.5	17.6	15.5	13.9	13.9	14.6	14.0	14.1
Paints, varnishes, and lacquers	0316	16.4	15.9	14.6	14.9	13.5	12.1	11.8	11.8	11.4	11.6
Miscellaneous chemical products	0317	13.2	12.8	11.7	11.5	10.5	9.0	8.9	8.8	8.9	8.9
Rubber, plastics and articles thereof	0318	18.2	17.6	16.4	16.4	15.0	13.4	13.3	13.2	13.1	13.2
Cement	0319	13.6	13.0	12.0	11.9	11.1	9.5	9.4	9.7	9.8	9.9
Manufacture of steel and derivatives	0321	14.3	13.8	12.8	11.8	10.8	10.1	10.1	10.1	10.2	10.2
Metallurgy of non-ferrous metals	0322	11.8	11.4	9.6	9.4	8.6	7.1	6.9	7.1	7.2	7.3
Metal products - except machinery and equipment	0323	19.4	18.4	17.7	17.7	16.6	15.4	15.0	15.3	15.1	15.2
Machinery and equipment	0324	16.9	9.4	13.2	13.2	12.4	11.9	11.8	11.8	11.9	11.9
Household appliances	0325	19.1	17.3	17.1	16.9	16.0	15.0	14.7	15.0	14.7	14.7
Office machines and computers	0326	17.3	14.9	14.9	14.8	14.3	13.3	13.0	13.0	12.8	12.8
Automobiles, vans and com. vehicles	0330	27.5	25.8	30.4	30.4	23.5	24.7	24.8	26.4	25.6	25.1
Parts for motor vehicles	0332	20.0	19.1	18.9	18.4	17.0	16.0	15.8	15.6	15.2	15.2
Other transport equipment	0333	14.8	11.5	12.0	12.0	11.5	11.2	10.8	10.7	10.6	11.1
Furniture and other	0334	20.4	19.9	18.9	18.9	17.9	16.4	16.4	16.4	16.5	16.5
Electricity, gas, water, sewage and urban cleaning	0401	18.6	18.1	19.5	16.2	17.7	16.4	12.5	14.4	19.9	21.8
Information services	0801	11.0	10.2	9.3	9.3	8.5	7.6	7.6	7.1	8.1	8.2
Business services	1103	12.8	12.3	11.3	11.3	11.3	9.7	9.8	9.8	9.7	9.1

TABLE A.2

Nominal rate of protection: simple average (2010-2015)

Sector	Code	2010	2011	2012	2013	2014	2015
Agriculture	0191	4.4	4.6	4.7	7.4	5.2	6.0
Livestock	0192	2.5	2.2	2.9	3.7	2.5	3.4
Forest production, fisheries, and aquaculture	0280	3.8	4.7	3.4	6.5	5.8	3.8
Coal and non-metallic minerals	0580	3.2	3.2	3.2	3.6	3.3	3.4
Oil and gas	0680	0.0	0.0	0.0	0.0	0.0	0.0
Iron ore	0791	1.7	2.0	2.0	2.0	1.7	1.8
Non-ferrous metal ores	0792	1.9	2.0	2.1	2.3	2.1	2.0
Slaughter and meat products, including dairy and fishery	1091	6.0	6.3	6.5	11.1	6.8	6.8
Sugar	1092	14.6	14.0	13.5	14.8	13.6	13.0
Other food products	1093	9.8	10.1	10.3	12.3	10.4	10.4

(Continued)

Sector	Code	2010	2011	2012	2013	2014	2015
Beverages	1100	16.1	16.7	16.9	19.2	15.7	16.9
Tobacco products	1200	14.4	13.8	15.6	17.6	15.3	15.5
Textiles	1300	22.2	22.4	22.5	24.2	22.5	22.6
Apparel and clothing accessories	1400	30.2	30.2	30.9	33.8	31.3	31.2
Footwear and leather products	1500	18.4	18.1	18.7	21.1	19.2	19.3
Wood products	1600	8.1	8.0	8.5	9.3	8.3	8.6
Pulp, paper and paper products	1700	11.1	10.9	11.1	11.7	11.4	11.1
Printing and reproduction of recordings	1800	12.1	11.9	12.3	13.3	12.3	12.4
Oil refining and coking plants	1991	0.8	0.8	0.8	0.8	0.8	0.6
Biofuels	1992	18.7	19.6	19.6	11.7	10.1	9.2
Organic and inorganic chemicals, resins and elastomers	2091	6.6	6.6	6.7	7.2	6.7	6.2
Pesticides, disinfectants, paints and various chemicals	2092	9.1	9.2	9.3	10.2	9.3	8.8
Cleaning products, cosmetics/perfumes and toilet preparations	2093	13.8	13.7	14.1	16.0	14.2	14.3
Pharmaceutical and pharmacochemical products	2100	5.1	5.1	5.1	5.4	5.1	6.5
Rubber and plastic products	2200	13.2	13.3	13.5	14.7	13.7	13.5
Non-metallic mineral products	2300	9.6	9.6	9.8	10.6	9.9	9.8
Pig iron / ferro-alloys, steel and seamless steel tubes	2491	10.6	10.6	10.8	11.3	10.9	10.9
Metallurgy of non-ferrous metals and metal smelting	2492	7.1	7.3	7.3	7.8	7.3	7.2
Metal products, except machinery and equipment	2500	15.0	15.0	15.3	16.1	15.4	15.2
Computer, electronic and optical products	2600	12.9	12.9	12.9	13.2	12.9	12.2
Electrical machinery and equipment	2700	14.6	14.5	14.8	15.6	14.8	14.3
Mechanical machinery and equipment	2800	11.9	11.9	12.0	12.6	12.1	12.0
Motor vehicles, except parts	2991	25.4	26.1	25.7	29.9	25.8	26.2
Parts and accessories for motor vehicles	2992	15.0	14.9	15.1	16.4	15.4	14.6
Other transport equipment, except motor vehicles	3000	10.6	10.9	11.2	11.9	11.6	11.5
Furniture and products of various industries	3180	16.0	15.7	16.3	17.0	16.2	16.6
Electricity, natural gas and other utilities	3500	0.0		0.0	0.0	0.0	0.0
Editing and print-integrated editing	5800	3.5	3.6	3.5	3.8	3.4	3.4
Television, radio, cinema, sound and image	5980	14.7	14.5	14.1	15.6	14.8	14.5
Architectural, engineering services, and R&D	7180	4.0	4.0	3.7	4.0	4.0	4.0
Artistic, creative and entertainment activities	9080	4.9	4.6	5.1	5.5	5.1	5.1

TABLE A.3

Nominal rate of protection weighted by imports (2000-2009)

Sector	Code	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture and forestry	0101	8.1	8.0	7.6	8.2	6.4	4.7	4.7	5.0	4.7	4.4
Livestock and fisheries	0102	6.1	5.5	9.6	9.6	7.3	5.6	5.6	3.0	3.5	4.4
Oil and natural gas	0201	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Iron ore	0202	5.0	4.5	3.5	3.5	2.7	2.0	2.0	2.0	2.0	1.8
Other of the extractive industry	0203	2.4	1.9	1.2	1.2	1.3	0.6	0.6	0.6	0.4	0.4
Food and beverage	0301	16.5	15.9	14.9	14.7	12.0	11.2	11.0	10.8	10.8	11.0
Tobacco products	0302	18.6	17.7	16.1	16.6	10.7	12.9	11.5	10.7	9.2	10.4
Textiles	0303	19.2	17.3	17.9	16.3	15.0	14.6	14.9	15.0	16.2	19.8
Apparel and clothing accessories	0304	23.0	22.5	21.5	20.0	17.9	18.1	17.7	18.1	30.6	30.9

(Continues)

(Continued)

Sector	Code	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Footwear and leather products	0305	24.6	24.2	15.8	15.2	13.5	14.9	18.4	19.2	21.8	23.5
Wood products - except furniture	0306	11.5	11.2	11.4	10.0	7.6	6.6	7.2	7.5	7.6	7.4
Pulp and paper products	0307	11.2	9.9	11.0	10.9	9.9	8.9	8.9	9.3	9.6	9.4
Newspapers, magazines and CDs	0308	1.6	1.6	1.6	2.0	3.0	2.7	2.7	3.7	3.1	3.0
Oil refining and coke	0309	3.6	0.4	0.9	0.8	0.7	0.8	0.8	0.6	0.6	0.6
Alcohol	0310	24.9	22.5	21.5	21.5	17.8	15.2	0.0	0.0	16.5	17.8
Chemicals	0311	8.9	7.9	6.9	6.8	5.6	4.9	4.6	4.3	3.6	4.4
Resins and elastomers	0312	14.9	13.9	12.6	12.2	11.1	9.6	9.6	9.6	9.4	9.5
Pharmaceutical products	0313	10.8	10.1	7.1	6.9	7.1	6.2	6.4	6.2	5.8	5.7
Agricultural pesticides	0314	7.9	12.5	8.1	7.2	6.0	5.3	5.7	9.8	8.0	8.8
Perfumery, toilet and cleaning prod.	0315	18.8	18.8	17.0	16.8	14.6	12.8	12.8	13.9	12.7	12.9
Paints, varnishes, and lacquers	0316	16.7	16.2	14.8	15.2	13.7	12.5	12.1	12.1	11.3	11.6
Miscellaneous chemical products	0317	12.0	11.5	10.4	10.3	9.3	8.0	8.3	8.2	7.8	7.6
Rubber, plastics and articles thereof	0318	17.7	17.0	15.9	15.5	14.1	12.7	12.2	12.2	12.2	12.1
Cement	0319	12.0	11.4	10.7	10.5	9.8	8.6	8.9	9.4	9.5	9.6
Manufacture of steel and derivatives	0321	14.6	13.7	13.6	12.2	10.6	9.3	8.8	9.6	9.2	9.5
Metallurgy of non-ferrous metals	0322	10.0	9.5	8.9	8.5	6.7	4.6	3.2	3.7	4.8	4.9
Metal products - except machinery and equipment	0323	18.4	16.2	16.6	17.0	16.0	14.9	14.5	14.8	14.0	13.7
Machinery and equipment	0324	16.4	8.5	12.1	12.4	11.9	11.2	10.7	10.9	10.7	10.9
Household appliances	0325	18.9	14.0	12.8	15.7	15.2	14.2	13.8	13.9	13.4	13.2
Office machines and computers	0326	14.1	11.6	11.7	11.7	10.6	10.2	8.7	7.9	7.6	7.3
Automobiles, vans and com. vehicles	0330	33.2	33.2	32.7	32.9	26.6	27.3	28.4	30.0	29.8	28.9
Parts for motor vehicles	0332	17.1	17.1	17.8	15.9	14.8	13.5	13.3	13.3	13.2	12.8
Other transport equipment	0333	4.8	3.0	2.9	2.9	2.4	3.7	2.7	2.4	2.7	2.5
Furniture and other	0334	20.2	19.9	18.9	18.8	17.7	16.2	16.4	17.1	16.9	17.2
Electricity, gas, water, sewage and urban cleaning	0401	21.1	20.7	19.4	18.2	16.4	15.9	7.6	4.9	3.3	2.3
Information services	0801	7.0	10.8	9.3	13.2	10.8	11.1	11.7	9.5	10.0	10.7
Business services	1103	12.3	13.7	13.9	14.3	14.2	12.8	11.5	10.6	11.1	9.9

TABLE A.4
Nominal rate of protection weighted by imports (2010-2015)

Sector	Code	2010	2011	2012	2013	2014	2015
Agriculture	0191	4.5	4.4	3.9	9.3	5.9	6.1
Livestock	0192	1.5	1.1	1.4	0.6	0.5	0.5
Forest production, fisheries, and aquaculture	0280	3.3	3.4	3.0	6.2	2.2	2.1
Coal and non-metallic minerals	0580	0.2	0.2	0.2	0.4	0.3	0.3
Oil and gas	0680	0.0	0.0	0.0	0.0	0.0	0.0
Iron ore	0791	1.4	2.0	2.0	2.0	1.3	1.7
Non-ferrous metal ores	0792	1.3	1.3	1.5	2.0	1.3	1.4
Slaughter and meat products, including dairy and fishery	1091	5.4	5.8	6.1	12.9	5.5	5.7
Sugar	1092	5.6	6.7	6.1	10.3	8.6	8.2

(Continues)

(Continued)

Sector	Code	2010	2011	2012	2013	2014	2015
Other food products	1093	9.2	9.3	9.5	12.3	9.8	9.9
Beverages	1100	14.8	15.3	15.4	16.9	15.0	15.7
Tobacco products	1200	10.0	10.0	12.8	16.3	12.0	13.2
Textiles	1300	20.9	21.6	21.8	23.8	22.4	22.8
Apparel and clothing accessories	1400	30.4	30.2	31.0	34.2	31.0	29.8
Footwear and leather products	1500	25.1	25.9	27.2	30.1	27.2	27.6
Wood products	1600	8.3	8.2	8.4	10.4	8.6	8.6
Pulp, paper and paper products	1700	9.5	9.6	9.9	10.2	10.2	9.5
Printing and reproduction of recordings	1800	11.5	11.3	11.6	12.6	11.4	10.9
Oil refining and coking plants	1991	0.4	0.4	0.4	0.5	0.4	0.3
Biofuels	1992	18.9	19.5	19.4	11.5	9.3	8.1
Organic and inorganic chemicals, resins and elastomers	2091	5.8	5.4	5.6	6.1	5.6	5.3
Pesticides, disinfectants, paints and various chemicals	2092	8.9	9.1	8.8	10.8	9.0	8.1
Cleaning products, cosmetics/perfumes and toilet preparations	2093	13.2	13.0	13.5	16.0	13.8	13.5
Pharmaceutical and pharmacochemical products	2100	5.6	5.7	5.6	6.3	5.7	8.2
Rubber and plastic products	2200	12.1	12.2	12.3	13.7	12.4	12.3
Non-metallic mineral products	2300	8.6	8.8	8.8	11.7	10.1	8.5
Pig iron / ferro-alloys, steel and seamless steel tubes	2491	10.6	10.8	11.3	12.0	11.2	11.0
Metallurgy of non-ferrous metals and metal smelting	2492	4.3	5.1	5.0	6.9	5.4	5.7
Metal products, except machinery and equipment	2500	13.7	13.7	15.1	16.0	14.9	15.1
Computer, electronic and optical products	2600	7.0	7.1	7.3	7.6	7.4	9.9
Electrical machinery and equipment	2700	13.4	13.3	13.6	14.4	13.5	9.8
Mechanical machinery and equipment	2800	10.9	10.8	10.9	12.0	11.3	9.5
Motor vehicles, except parts	2991	27.9	27.9	27.4	33.3	26.2	25.0
Parts and accessories for motor vehicles	2992	12.3	12.3	12.5	14.1	13.1	12.4
Other transport equipment, except motor vehicles	3000	4.5	4.7	4.6	4.8	5.4	5.9
Furniture and products of various industries	3180	13.2	13.3	15.5	16.1	14.9	20.1
Electricity, natural gas and other utilities	3500	0.0		0.0	0.0	0.0	0.0
Editing and print-integrated editing	5800	1.1	1.3	1.5	1.4	1.2	0.9
Television, radio, cinema, sound and image	5980	14.7	14.4	14.2	15.7	15.0	14.1
Architectural, engineering services, and R&D	7180	4.0	4.0	3.7	4.0	4.0	4.0
Artistic, creative and entertainment activities	9080	6.0	4.7	4.3	4.6	4.0	4.3

TABLE A.5

Effective protection using simple average of nominal tariffs (2000-2009)

Sector	Code	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture and forestry	0101	5.7	4.5	4.6	4.6	4.0	2.9	3.3	2.6	2.7	2.5
Livestock and fisheries	0102	10.7	9.9	10.9	11.1	7.6	3.0	8.5	1.9	8.2	6.3
Oil and natural gas	0201	-6.3	-7.3	-7.4	-8.4	-8.1	-7.4	-6.9	-7.0	-7.5	-7.6
Iron ore	0202	3.6	3.5	1.3	1.7	0.3	-0.6	-0.3	-0.4	-0.8	-1.4
Other of the extractive industry	0203	3.1	3.1	1.5	0.7	0.4	-1.9	-1.7	-1.6	-2.2	-2.7
Food and beverage	0301	39.0	40.3	35.9	34.4	26.7	25.7	22.2	25.2	22.9	24.3
Tobacco products	0302	40.1	39.8	36.7	55.3	44.7	44.6	44.7	38.7	40.5	39.7
Textiles	0303	29.6	29.3	27.7	25.5	22.6	22.9	23.8	23.7	27.0	34.2

(Continues)

(Continued)

Sector	Code	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Apparel and clothing accessories	0304	31.0	30.5	29.1	29.2	26.4	27.3	26.8	27.0	52.6	50.2
Footwear and leather products	0305	44.7	43.1	29.0	26.9	24.2	22.4	26.2	24.9	30.7	30.1
Wood products - except furniture	0306	14.9	15.1	13.5	14.9	12.5	10.0	9.7	11.0	10.6	10.9
Pulp and paper products	0307	20.1	19.6	18.1	21.2	18.5	16.9	17.0	17.0	16.0	15.9
Newspapers, magazines and CDs	0308	9.5	8.6	8.1	8.1	7.6	7.1	6.6	9.8	8.1	7.9
Oil refining and coke	0309	-2.5	-5.6	-6.0	-1.9	-1.5	-2.3	0.5	0.3	-2.7	-3.1
Alcohol	0310	50.9	47.2	44.9	38.7	31.7	27.1	-5.8	-5.7	30.0	32.7
Chemicals	0311	20.1	20.6	16.8	16.7	13.8	10.7	11.7	11.0	9.3	8.9
Resins and elastomers	0312	36.5	36.0	33.9	26.7	24.2	22.4	23.6	23.5	22.1	21.0
Pharmaceutical products	0313	9.0	8.4	7.0	6.8	4.6	3.5	3.9	4.0	3.3	3.1
Agricultural pesticides	0314	2.5	20.4	1.0	7.3	-2.1	-1.8	-6.0	12.5	2.9	11.1
Perfumery, toilet and cleaning prod.	0315	29.1	29.1	27.7	32.0	28.0	25.6	27.3	29.2	25.7	25.8
Paints, varnishes, and lacquers	0316	32.3	31.9	29.2	29.0	26.3	24.1	24.5	24.2	21.5	21.8
Miscellaneous chemical products	0317	18.0	17.9	15.7	15.9	14.1	11.7	12.2	11.5	10.6	10.4
Rubber, plastics and articles thereof	0318	34.3	33.7	30.9	30.3	27.5	24.6	24.7	24.2	23.2	23.2
Cement	0319	21.2	20.8	18.4	20.2	18.4	15.1	15.9	16.5	15.5	15.2
Manufacture of steel and derivatives	0321	23.0	23.2	20.9	19.6	17.4	16.9	17.9	17.6	16.8	16.6
Metallurgy of non-ferrous metals	0322	13.1	13.1	8.6	9.9	8.1	5.8	6.3	6.4	5.2	4.6
Metal products - except machinery and equipment	0323	29.7	28.2	27.4	26.4	24.8	23.2	22.8	23.3	22.5	22.4
Machinery and equipment	0324	24.5	6.1	16.9	18.1	17.7	17.8	17.8	18.2	17.9	17.8
Household appliances	0325	37.3	34.4	34.0	35.2	34.1	32.3	32.0	33.5	32.1	31.8
Office machines and computers	0326	33.5	26.3	27.5	30.1	32.4	30.5	30.5	35.2	33.7	33.8
Automobiles, vans and com. vehicles	0330	83.6	78.3	101.8	179.7	123.4	141.3	144.9	161.3	153.5	149.1
Parts for motor vehicles	0332	33.4	32.3	32.3	33.6	30.8	29.6	29.4	28.8	27.2	27.0
Other transport equipment	0333	20.3	14.0	15.4	16.5	16.3	16.7	16.0	15.9	15.3	16.5
Furniture and other	0334	30.3	29.7	28.5	28.5	27.5	25.4	25.8	25.5	25.4	25.0
Electricity, gas, water, sewage and urban cleaning	0401	22.5	22.0	24.1	20.2	22.4	20.9	15.5	18.2	25.8	28.6
Information services	0801	12.5	11.4	10.3	10.3	9.2	8.4	8.5	7.7	9.0	9.3
Business services	1103	15.0	14.6	13.3	12.9	13.2	11.1	11.4	11.3	11.0	10.0

TABLE A.6

Effective protection using simple average of nominal tariffs (2010-2015)

Sector	Code	2010	2011	2012	2013	2014	2015
Agriculture	0191	4.2	4.4	4.6	8.7	5.1	6.7
Livestock	0192	1.3	0.7	1.8	2.1	0.6	2.3
Forest production, fisheries, and aquaculture	0280	3.9	5.1	3.5	7.0	6.4	3.9
Coal and non-metallic minerals	0580	2.3	2.4	2.4	3.0	2.7	3.1
Oil and gas	0680	-1.8	-1.9	-1.9	-2.3	-2.2	-2.2
Iron ore	0791	1.1	1.5	1.5	1.4	0.8	1.2
Non-ferrous metal ores	0792	0.4	0.6	0.8	1.0	0.6	0.6
Slaughter and meat products, including dairy and fishery	1091	17.6	19.5	19.3	38.5	20.7	18.7
Sugar	1092	48.4	45.6	43.6	56.5	57.1	51.4

(Continues)

(Continued)

Sector	Code	2010	2011	2012	2013	2014	2015
Other food products	1093	31.4	32.7	33.6	36.1	31.3	30.5
Beverages	1100	32.4	33.6	34.1	41.8	33.4	36.7
Tobacco products	1200	36.9	34.6	40.0	44.1	39.9	39.7
Textiles	1300	48.5	48.7	49.0	50.5	47.4	47.7
Apparel and clothing accessories	1400	45.3	45.3	46.5	55.4	51.2	50.9
Footwear and leather products	1500	31.0	30.2	31.6	37.8	34.8	35.0
Wood products	1600	12.7	12.1	13.5	15.4	13.6	14.9
Pulp, paper and paper products	1700	25.2	24.4	25.2	26.7	26.3	25.7
Printing and reproduction of recordings	1800	18.8	18.5	19.2	21.5	19.9	20.2
Oil refining and coking plants	1991	-2.2	-2.1	-2.1	-2.1	-1.7	-2.0
Biofuels	1992	63.4	66.6	66.3	31.3	29.7	24.0
Organic and inorganic chemicals, resins and elastomers	2091	18.1	17.7	18.2	17.9	16.9	15.4
Pesticides, disinfectants, paints and various chemicals	2092	22.9	22.8	23.4	24.1	21.8	20.5
Cleaning products, cosmetics/perfumes and toilet preparations	2093	30.9	30.4	31.8	44.1	38.9	39.9
Pharmaceutical and pharmacochemical products	2100	7.3	7.1	7.2	8.4	8.0	11.2
Rubber and plastic products	2200	27.0	26.9	27.5	32.8	30.3	30.4
Non-metallic mineral products	2300	18.7	18.6	19.1	22.8	21.4	21.3
Pig iron / ferro-alloys, steel and seamless steel tubes	2491	36.2	34.5	36.7	36.5	35.5	35.6
Metallurgy of non-ferrous metals and metal smelting	2492	21.6	20.5	22.2	21.3	19.9	19.8
Metal products, except machinery and equipment	2500	25.0	24.8	25.4	28.4	27.1	26.7
Computer, electronic and optical products	2600	24.0	23.9	23.8	29.2	28.7	26.9
Electrical machinery and equipment	2700	33.3	33.0	33.7	37.3	35.6	34.2
Mechanical machinery and equipment	2800	19.1	19.2	19.3	21.4	20.7	20.5
Motor vehicles, except parts	2991	64.3	66.6	65.1	106.4	89.4	92.4
Parts and accessories for motor vehicles	2992	27.9	27.4	28.0	33.9	31.7	29.4
Other transport equipment, except motor vehicles	3000	16.3	16.9	17.5	20.5	20.4	20.1
Furniture and products of various industries	3180	25.0	24.6	25.5	27.4	26.4	27.1
Electricity, natural gas and other utilities	3500	-1.7	-1.7	-1.7	-2.7	-2.6	-2.5
Editing and print-integrated editing	5800	3.3	3.4	3.2	4.4	3.7	3.8
Television, radio, cinema, sound and image	5980	25.4	24.9	24.2	26.7	25.5	24.9
Architectural, engineering services, and R&D	7180	4.5	4.4	4.0	4.6	4.6	4.6
Artistic, creative and entertainment activities	9080	6.4	5.9	6.7	8.0	7.4	7.5

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