

Impact of WTO Accession and the Customs Union on the Bound and Applied Tariff Rates of the Russian Federation

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Abstract

After 18 years of negotiations, Russia has joined the World Trade Organization. This paper assesses how the tariff structure of the Russian Federation will change as a result of the phased implementation of its World Trade Organization commitments between 2012 and 2020 and how it has changed as a result of its agreement to participate in a Customs Union with Kazakhstan and Belarus. The analysis uses trade data at the ten digit level, which allows the first accurate assessment of the impact of these policy changes. It finds that World Trade Organization commitments will progressively and significantly lower the applied tariffs of the Russian

Federation. After all commitments are implemented, tariffs will fall from 11.5 percent to 7.9 percent on an un-weighted average basis, or from 13.0 percent to 5.8 percent on a weighted average basis. The average “bound” tariff rate of Russia under its World Trade Organization commitments will be 8.6 percent, that is, 0.7 percentage points higher than the applied tariffs. Russia’s commitments represent significant tariff liberalization, but compared with other countries that have acceded to the World Trade Organization, the commitments of the Russian Federation are not unusual, especially when compared with the Transition countries.

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by

Oleksandr Shepotylo and David Tarr¹

1. Introduction

The Russian Federation has undertaken two major trade policy initiatives since 2010 that could potentially affect its applied Most Favored Nation (MFN) tariff structure. First, after 18 years of negotiations, on July 10, 2012, the Russian Parliament ratified its Protocol of Accession to join the World Trade Organization (WTO). The Russian Federation has negotiated transition periods for implementation of its WTO bound tariff levels, with implementation occurring in stages. About one-third of its tariff commitments will be implemented on the date of accession with about another 25 percent implemented within three years after accession. Full implementation of all bound levels occurs only in 2020. Second, in 2010, the Russian Federation formed a Customs Union with Belarus and Kazakhstan. As of July 1, 2010, the customs code of the Russia-Belarus-Kazakhstan Customs Union became the common external tariff of the three member countries, with some exceptions, mostly in Kazakhstan.

In this paper we assess how the tariff structure of the Russian Federation has changed or will change as a result of these policy changes--the Customs Union agreement and the sequence of WTO commitments. Given the staged implementation of the WTO tariff commitments, we estimate the projected tariff structure on an annual basis until the year 2020, both in aggregate and at the two digit tariff line level. We also compare the bound tariffs of Russia to its applied tariffs and calculate the “water in the tariff”—that is, by how much will the applied tariffs of Russia be below their bound levels.

Most previous efforts to assess the Russian tariff regime have been hampered by two problems: (1) about fifteen percent of the tariff lines of Russia (and the Customs Union) use a “combined” tariff rate system. For these tariff lines, both an ad

¹ We wish to thank Professors A. Daniltsev and R. Kruchkov of the Higher School of Economics in Moscow for their excellent comments on an earlier draft.

valorem and specific tariff are indicated, and the actual tariff applied by Russian customs is the maximum of the two. To know the actual tariff, where specific tariffs are specified, we must calculate their ad valorem equivalents. This is a non-trivial task, and some previous efforts have simply ignored the specific tariffs, resulting in an underestimate of the actual tariff rates;² and (2) due to the lack of ten digit tariff line data on the value and quantity of imports, most prior calculations were based on more aggregate and less precise data.³

The first study to accurately assess the structure of the Russian tariff structure, using trade and tariff data at the ten digit tariff line level was Shepotylo and Tarr (2008). They provided calculations for the years 2001-2005 and showed a trend of increasing protection for light industry and the food industry during this period. Jandosov and Sabyrova (2011) and Shepotylo (2011) both accurately showed that the average applied tariff of Kazakhstan would approximately double as a result of the imposition of the common external tariff of the Russia-Belarus-Kazakhstan Customs Union. The initial Customs Union tariff in 2011 was the Russian tariff, and Kazakhstan applied the Customs Union tariff except for about 400 tariff line exemptions for Kazakhstan between July 1, 2010 and July 1, 2011.⁴

In widely cited estimates, the WTO (2011) assessed that the un-weighted average bound tariff of the Russian Federation would be 7.8 percent after all commitments are implemented. The World Trade Organization, however, based its calculations on 8-digit trade data, which introduces imprecision.⁵ Our estimate of the un-weighted bound tariff of the Russian Federation after all commitments are implemented is 8.6 percent. But the bound tariffs are only maximum tariffs, as Russia

² See, for example, ATF Bank (2011).

³ The previous data available were the annual hard copy reports of the Russian Customs Committee. These reports aggregate information from the tariff line level, so that information is reported on about 1700 aggregated product codes out of about 11,000 tariff lines. Previously, World Bank staff manually entered these data annually in order to perform the calculations that were possible with those data. Earlier work based on these data includes the following. Tarr (1999; 2002) has assessed the average level of the Russian tariff and the degree of tariff escalation by stage of production using 1900 tariff lines. Afontsev applied the Grossman-Helpman methodology to the Russian tariff structure in two papers. Afontsev (2002) assessed to extent to which industrial lobbying, consumer welfare or government revenue can explain the formation of Russian tariff policy in 1992-1997. Afontsev (2004) assessed the motivation of the government for the tariff simplification policy of 2000-2001. See the chapters and discussions on Russia in Michalopoulos and Tarr (1994; 1996) for other early calculations.

⁴ The majority of exemptions were eliminated after July 1, 2011.

⁵ Further, the WTO Secretariat dropped specific tariffs when there was no match at the six digit level between the tariff classification and the trade data, which biases down the estimated tariff. Based on our three year base period (one year more recent than the WTO), we calculate this occurred in the case of 22 tariff lines in the years 2012-2020.

will apply lower tariffs on 1498 tariff lines unless these tariffs are raised. We also assess the impact of WTO accession commitments on the **applied** tariffs in Russia, and we assess the applied tariffs in each year as Russia progressively implements its WTO commitments.

Our key results are the following. The impact of the Customs Union agreement on the tariffs of the Russian Federation is negligible. On the other hand, the WTO commitments will progressively and significantly lower the applied tariffs of the Russian Federation. In 2011, the average Russian tariff was 11.5 percent on an un-weighted average basis and 13.0 percent on a weighted average basis. By 2020, we calculate that the impact of the WTO commitments will be to reduce the average tariff of the Russian Federation to 7.9 percent on an un-weighted average basis and to about 5.8 percent on a weighted average basis. These estimates show that the tariffs on the more important in value import items will be cut to a larger extent. The sectors whose tariffs are projected to decline the most (on an un-weighted basis) as a result of the WTO commitments are: timber, wood, pulp and paper (6.1 percentage points); light industry (4.1 percentage points); and the food industry (4.6 percentage points).

We find that when all the WTO commitments are implemented, the average **bound** tariff of the Russian Federation will be 8.6 percent on an un-weighted basis, i.e., 0.7 percentage points greater than the applied average tariff. This is explained by the fact that there will be 1498 tariff lines with applied tariff rates less than the maximum or bound rates under the WTO commitments. We discuss why this has important implications for facilitating the accession of Kazakhstan into the WTO.

We show that compared with other countries that have acceded to the WTO, the commitments of the Russian Federation are not unusual, especially when compared to the Transition countries. Most Transition countries that have acceded to the WTO have bound their tariffs at levels lower than the final bound commitments of the Russian Federation.⁶

In section II we discuss the data sources for the analysis. The methodology is elaborated in section III, both intuitively and mathematically. In section IV we discuss the results for the overall averages, while in section V we discuss the results for tariffs at the sector level.

⁶In appendix table A1, we calculate that tariffs on both an ad valorem and total basis, so the reader can see the extent of the bias from ignoring the specific tariffs.

II. Data Sources

Trade Data (Values and Quantities of Imports)

Bilateral data on the quantity and value of Russian imports from all partner countries except Belarus for the years 2001 to 2010 inclusive and for the first half of the year 2011, were acquired from the electronic database of the commercial company Academy-Service.⁷ This dataset provides information on the value and quantity of imports at the tariff line level, i.e., the 10-digit level. The quantity data are available in physical units such as kilograms and the value of imports is in US dollars. Since there are more than 11,000 tariff lines and the data are reported by partner country at the tariff line level, the database contains about 450,000 or 500,000 observations per year.⁸

Tariff Data

The source of the data on the tariff rates of the Russian Federation for 2001 to 2010, inclusive, is various editions of the Decree of the Government of the Russian Federation on import duties. For 2006 to 2010, it is decree number 718, dated November 27, 2006.⁹ For 2001 to 2005, it is decree number 830. These documents are available from www.base.consultant.ru.¹⁰

⁷ <http://www.ftinform.com>. Comparison of these data with those provided to us by the Russian Ministry of Economic Development and Trade have confirmed the accuracy of these data. Belarusian imports are not included in the sample, which explains discrepancy between the aggregate import reported in the balance of payments and our data.

⁸ Seven observations were dropped from the sample as obvious outliers, based on highly implausible unit prices such as a 40 dollars per car, HS code 8703239027, imported from Germany in 2007.

⁹ We looked at the following editions of decree 718 to track the changes in tariff lines over time: dated by 12.30.2006 for 2006; dated by 12.29.2007 for 2007; dated by 12.19.2008 for 2008; dated by 12.18.2009 for 2009, dated by 04.01.2010 for 2010. For 2011, we used January 1, 2012 for reasons explained in the text. For 2001 to 2005, we took data from editions of decree 830: first, dated 11.30.2001 for 2001; the second, dated 02.06.2003 for 2002 rates; for 2003, 2004 and 2005, we took December 31 of the respective year. Within a year, changes can occur at the beginning as well as in the end of the year, introducing some measurement error. However, this approach is consistent over time and should not introduce biases because the changes are distributed quite uniformly over the course of the year.

¹⁰ For a minority of products, the units of measurement of the specific tariffs and the import statistics are not the same in our two data sources. Most prominently, tariff lines within the 4-digit Harmonized System categories 8701-8705 (tractors and motor vehicles) have a specific tariff component defined in euros per cubic meters of the volume of the engine (cm³). The import statistics, however, only report the number of vehicles imported, not the volume of the engine. Taking tariff code 8703 as an example, we resolve this problem as follows.

There are multiple 6 digit tariff lines beginning with 8703, namely 870321, 870322, 870323, 870324. Together they describe the full range of the cylinder capacities. We have that 870321 is for cylinder capacities not exceeding 1 000 cm³; 870322 is for cylinder capacities exceeding 1 000 cm³ but not exceeding 1 500 cm³; 870323 is for cylinder capacities exceeding 1 500 cm³ but not exceeding 3000

For 2011, we use the tariff rate data in the “Unified Customs Tariffs of the Customs Union of Belarus, Kazakhstan, and Russia” as of January 1, 2012.¹¹ The reason that we use the tariff data of January 1, 2012 for 2011 is that we want to have an assessment of the impact of the Customs Union on the tariffs of Russia. Since for 2010, we use pre-Customs Union tariffs, and for 2012, we use tariff rates that are impacted by the WTO commitments, we need to take a date for the tariff rates that is representative of the Customs Union tariff rates. The changes in the tariff code implemented on January 1, 2012 were potentially significant and are the most representative of the tariffs of the Customs Union. We should interpret “2011” in our calculations as Customs Union tariffs, and we can interpret the difference in tariffs between 2010 and 2011 as the impact of the Customs Union schedule on the tariffs of Russia.

The source of data on tariff rates of Russia after the WTO accession is a combination of the Customs Union tariff schedule mentioned above and the Schedule of Concessions and Commitments on Goods of the Russian Federation related to the WTO accession. Commitments at the WTO are known as “bound” tariffs; this means they are the maximum tariff that can apply at the tariff line level. The actual applied MFN tariff may be less than the bound tariff, a situation referred to as “water in the tariff schedule.” For the years 2012 and later, we take the applied MFN tariff as the minimum of the bound tariff in any year and the applied tariff of the Customs Union as of January 1, 2012.

The WTO commitments schedule became publicly available from the WTO after the Russian Federation was formally invited to join the WTO on December 16, 2011. The Russian Federation is scheduled to implement its commitments to the WTO in stages, beginning with the summer of 2012, with the longest transition period eight years after accession, or 2020. We calculate the impact of the phased implementation of the commitments, starting from the impact of the commitments in 2012.

cm³; and 870324 is for cylinder capacities exceeding 3 000 cm³. Within each six digit category, we take a simple average of the lower and upper bounds as the expected value of the cylinder capacity, i.e., for 870321 we have $500 (0+1000)/2=500$. Therefore, the following expected engine volumes apply: 500 cm³ for 870321, 1250 cm³ for 870322, 2250 cm³ for 870323, and 3000 cm³ for 870324. Then we know that all ten digit tariff lines with the same 6 digit code have this engine capacity and we can apply the specific tariff to the numbers of cars in the import data based on the engine capacity that applies to these ten digit tariff lines from the tariff schedule.

¹¹ This document is available from the website of the Customs Union, <http://www.tsouz.ru/>.

Exchange Rates

Specific tariffs are typically specified in euros, but the value of imports are in US dollars. We use the average annual interbank exchange rates to convert euros to US dollars.¹²

III. Methodology: Calculation of Most Favored Nation (MFN) Tariff Rates

Ad Valorem Tariffs

Most tariffs in the Russian Federation are simple ad valorem tariffs. For these tariff lines, the MFN tariff is relatively straightforward, as we do not have to calculate the ad valorem equivalent of the specific tariff.

Combined Ad Valorem and Specific Tariffs

Calculation of the tariff structure of the Russian Federation is complicated by the fact that for a large number of tariff lines there is a potential specific tariff component. The number of tariff lines with a potential specific tariff component has gradually grown over time, from 1609 in 2001 to 2020 in the year 2011. Most of these tariff lines with a potential specific tariff component used a “combined” tariff structure.¹³ For products with the combined tariff structure, the maximum of the ad valorem or specific tariff is the tariff that applies.

Tariffs for the Years 2001-2010

Define v_{jt}^h and q_{jt}^h as the value and quantity, respectively, of imports of tariff line h from country j in year t . As mentioned above, we have these data for 2001 through 2010 and the first half of 2011. Since we are interested in the MFN tariff, we exclude imports from the Commonwealth of Independent States (CIS) countries, because CIS imports enter tariff-free for the most part.¹⁴ Suppose further that a_t^h and b_t^h are ad valorem and specific parts of the tariff applied to the tariff line h at time t , $t=2001-2011$.

¹² Our source for exchange rates is: <http://www.oanda.com/currency/historical-rates/>.

¹³ Footwear is an exception where the sum of the specific and ad valorem tariffs is applied and there are a limited number of tariff lines where only specific tariffs apply.

¹⁴ In addition to the CIS agreement and the Customs Union agreement with Kazakhstan and Belarus, Russia has bilateral free trade agreements with most of the CIS countries. Despite these agreements there are exceptions to the principle of tariff free access to the Russian market by CIS exporters, but these exceptions are reportedly not common.

We compute the ad valorem equivalent of the specific part of the tariff according to the following formula:

$$(1) \quad as_{jt}^h = q_{jt}^h b_t^h / v_{jt}^h$$

Note that the ad valorem equivalent of the specific tariff varies by country. Since the tariff that is paid is calculated at the transaction level, the precise way to calculate the ad valorem equivalent of the specific tariff is to make the calculation analogous to the calculation in equation 1 on each transaction and then aggregate. We do not have transaction level data, but on the presumption that firms within a country tend to produce that are more similar to each other than to those of other countries, the calculation should be more precise if we use the country level data. For countries that sell low value products, the ad valorem equivalent of the specific tariff will be higher. Wines are an example. Imported French wine into Russia tends to be of higher value than imported wine from countries like Bulgaria. So the ad valorem equivalent of the specific tariff on French wine will be less than the ad valorem equivalent of the specific tariff on Bulgarian wine. The Russian authorities are well aware of this impact and use the specific tariff to provide greater protection against the products they believe are competing most closely against Russian products. Equation 1 allows us to use our data on imports by country.¹⁵

Define J_{ht} as the set of non-CIS countries from which Russia imports product h in year t , and define J_{ht}^* as the number of countries in J_{ht} .

For the years 2001 to 2010 inclusive, the MFN tariff for product line h in year t is calculated by:

$$(2) \quad T[RF(h,t)] = 100\% \times \frac{1}{J_{ht}^*} \sum_{j \in J_{ht}} \max\{a_t^h, as_{jt}^h\} \quad t=2001, \dots, 2010; J_{ht}^* > 0.$$

If $J_{ht} = \emptyset$, we set $T[RF(h,t)] = 100\% \times a_t^h$.

Let n_t = the number of tariff lines in year t , $t=2001, \dots, 2010$. Let v_{ht} = the value of imports of tariff line h in year t and V_t = the total value of imports in year t , $t=2001, \dots, 2010$. Define $w_{ht} = v_{ht} / V_t$ the share of tariff line h in the total value of imports in year t , $t=2001, \dots, 2010$. Define $TS(t)$ as the simple (or un-weighted) average tariff in year t , and $TW(t)$ as the weighted average tariff in year t .

¹⁵ We assume there is a recording error in the data if the calculation of the applied MFN rate for a tariff line for a particular country is above 1000 percent; we drop such observations from the calculation. For 2011 this decision rule led to drop of 60 observations out of 1,302,487 matched observations.

We have that the simple or un-weighted average tariff in year t is:

$$(3) \quad TS(t) = \frac{1}{n_t} \sum_{h=1}^{n_t} T[RF(h,t)] \quad t= 2001, \dots, 2010.$$

The weighted average tariff is:

$$(4) \quad TW(t) = \sum_{h=1}^{n_t} w_{ht} T[RF(h,t)] \quad t= 2001, \dots, 2010.$$

Tariffs for the the Years 2011-2020—Intuition for the Mathematics

We have to calculate the ad valorem equivalents of the specific tariffs in future time periods and also calculate trade weights of tariff lines for the purpose of the trade weighted average. We need trade data for both of these requirements. Since trade data are unavailable after June 2011, we make two assumptions. First, we assume that the average of the trade weights from 2009, 2010 and the first half of 2011 apply in future time periods. Rather than use the most recent year of available data, we call this 2.5 year period our base period for the calculation of tariffs in later periods. We take the import statistics for 2009, 2010, and the first half of 2011 in order to reduce year-specific shocks when computing the tariff projections for 2011-2020.

Second, we must also deal with the complication that new tariff lines appear in the years 2011-2020 that did not exist in the base period. For example, comparing the tariff codes of 2010 with those of January 1, 2012 (our classification for 2011) , 8,907 tariff lines were identical, but there were 2218 new tariff lines in the tariff classification of January 1, 2012 that did not exist in 2010. For 2020, 10,351 tariff lines were identical to those in 2010, but 1,206 did not match any tariff line in 2010 due to changes in classification.

For ten-digit tariff lines in the years 2011-2020 that are identical to tariff lines in our base period, calculation of the AVE of the specific tariff is relatively straightforward. We call these “matched” tariff lines. We compute the tariff rate on tariff line h by averaging over all countries from which there are positive imports in all three time periods, 2009, 2010 and 2011*. This is analogous to equations 1 and 2.

For tariff lines h in the years 2011-2020 with no match in the base period, we look for a match at the eight-digit level in the base period. If there is no match at the eight-digit level, we look for a match at the six-digit level; in a few cases, we had to find a match at the four digit level. Our calculations, however, are always based on ten-digit data. So if there is a match at the eight-digit level, we use all ten-digit tariff

line data corresponding to the eight-digit tariff code in a manner analogous to equations 1 and 2. In general, there will be multiple ten-digit tariff lines corresponding to a single eight-digit tariff line; so we will need to average over multiple ten-digit tariff lines in such cases. Further, we continue to use data at the most disaggregated level available, i.e., the country level. So for any ten-digit tariff line we use the quantity and value of imports from all countries from which Russia had positive imports in all of the three time periods of our base period.

While we hope that the explanation above is clear and intuitive, the remainder of this section is devoted to the mathematical description, and this requires the introduction of considerable notation. The reader who is interested in the results should be able to skip the remainder of this section.

Definition of Matched Tariff Lines

Define A_t = the set of all ten digit tariff lines in the Russian tariff code in year t , $t = 2009, 2010, 2011^*, 2011, \dots, 2020$ (denote the first half of 2011 as 2011*);

Define A_{2011}^* = the set of ten digit tariff lines in the Russian tariff code 2011*, the first half of 2011;

Define the set $B = A_{2009} \cup A_{2010} \cup A_{2011}^*$ = the union of the three sets of tariff lines in the three periods comprising the base period;

Define $AM_t = B \cap A_t$ = the intersection of the sets of all tariff lines in year t and the base period, $t = 2011, \dots, 2020$. We call this the set of matched tariff lines in the year t with the tariff lines for the base period. Note that for a ten digit tariff line to belong to the set AM_t , it is sufficient for the tariff line in year t to match with one tariff line from any of the three periods in the base period.

The vast majority of tariff lines are matched with a tariff line in at least one of the three years of our base period, but not all tariff lines have a match in the base period. For 2011 (A_{2011}), there are 632 tariff lines that are not an element of AM_t . For 2012 there are 347 tariff lines that are not an element of AM_t , i.e., they do not match at the ten digit level with any tariff line in any of the three years of our base period.

Tariff for Matched Tariff Lines in 2011.

We need to develop separate procedures for tariff lines h in the set AM_{2011} and for those not in the set AM_{2011} . First consider those tariff lines in the set AM_{2011} . Using the tariff rate data from the Customs Union, we can follow a procedure based

on what we have done for the years 2001- 2010. We shall find it convenient to introduce an alternate index t' for the base period years 2009, 2010, 2011*. In particular, define the ad valorem equivalent of the specific tariff for tariff line h , in 2011 based on trade weights in year t' from country j as:

$$(5) \quad asw_{jt'}^{h,2011} = q_{jt'}^h b_{2011}^h / v_{jt'}^h \quad h \in AM_{2011}; \quad t' = 2009, 2010, 2011^*$$

Equation 5 states that the ad valorem equivalent of the specific tariff applied to tariff line h , depends on the country and year of the trade weight. We then aggregate over all years and non-CIS countries to get the MFN tariff for product line h for the year 2011. This is calculated by:

$$(6) \quad T[RF(h,2011)] = 100\% \times \frac{1}{(J_{h,2009}^* + J_{h,2010}^* + J_{h,2011^*}^*)} \sum_{t'=2009}^{2011^*} \sum_{j \in J_{ht'}} \max\{a_{2011}^h, asw_{jt'}^{h,2011}\}$$

where $h \in AM_{2011}$. If $J_{ht'}^* = 0$ for all $t' = 2009, 2010, 2011^*$, we set

$$T[RF(h,2011)] = 100\% \times a_{2011}^h, \quad h \in AM_{2011}.$$

Ad Valorem Equivalent of Specific Tariffs for Unmatched Tariff Lines, 2011-2020

We need to calculate the tariff rate on tariff lines with specific tariffs that do not have a match with base period data. We want a procedure that will allow the calculation of the ad valorem equivalents of specific tariffs for tariff lines $h \in A_t$ but $h \notin AM_t$, $t = 2011, \dots, 2020$. Then for any tariff line $h \in A_t$ with a specific tariff but $h \notin AM_t$, $t = 2011, \dots, 2020$, define the set $h_t^k(t')$ as follows.

$h_t^k(t') = \{\text{the set of all ten digit tariff lines } h' \in A_t \text{ where } h' \text{ shares the same } k \text{ digit tariff code with tariff line } h \in A_t, \text{ and where } h' \text{ has positive imports for at least one non-CIS country}\}$ for $t' = 2009, 2010 \text{ or } 2011^*$; $t=2011, \dots, 2020$; $k=4,6,8$; $h \notin AM_t$.

Define $h_t^k = h_t^k(2009) \cup h_t^k(2010) \cup h_t^k(2011^*)$

If $h_t^8 \neq \emptyset$, we use it below. Otherwise, we use h_t^6 and in a few cases we used h_t^4 .

Consider a tariff line h' (from year t') that matches tariff line h (from year t) at the k digit level. Building on equation 5, we will calculate the ad valorem equivalent of the specific tariff on tariff line h in year t using all tariff lines h' and non-CIS

countries j with positive imports on tariff line h' . That is, the ad valorem equivalent of tariff line h is based on an aggregation defined below of the following:

$$(7) \quad asw_{jt}^h(h', t') = q_{jt}^{h'} b_t^h / v_{jt}^{h'} \quad \forall h' \in h_t^k(t') ; t' = 2009, 2010, 2011^*,$$

$t=2011, \dots, 2020, h \in A_t, h \notin AM_t$

To understand equation 7, take the year $t=2011$ as an example. Suppose we have a tariff ten digit tariff line h with a specific tariff and the ten digit classification of h does not correspond to any ten digit tariff line in any of the years $t'=2009, 2010$ or 2011^* where there are positive imports (i.e., $h \notin AM_t$). Suppose that tariff line h matches at least one tariff line in the base period at the eight digit level. The specific tariff b_{2011}^h does not depend on any base period data. We look for all ten digit tariff lines h' in each of our 3 time periods in our base period, where there is a match with tariff lines at the eight digit level and positive imports for some non-CIS country j . In this case, $k=8$. If there is no match at the eight digit level, we go to six digits or in some cases to four digits. Equation 7 defines how we calculate the ad valorem equivalent of the specific tariff based on ten-digit tariff line data on imports from country j in year t' .¹⁶

Tariff Rates for Unmatched Tariff Lines in 2011.

Employing equation 7, in the case of 2011, we calculate the tariff rate for tariff line $h \notin AM_t$ from the following equation:

(8)

$$T[RF(h, 2011)] = 100\% \times \frac{1}{\left(\sum_{t'=2009}^{2011^*} \sum_{h' \in h_{2011}^k(t')} J_{h', t'}^* \right)} \sum_{t'=2009}^{2011^*} \sum_{j \in J_{h', t'}} \sum_{h' \in h_t^k(t')} \max\{a_{2011}^h, q_{jt'}^{h'} b_{2011}^h / v_{jt'}^{h'}\}$$

for $h \notin AM_t$

Average Tariffs for 2011.

Unweighted average tariff for 2011. Combining equations 6 and 8, we have an estimate of the tariff rate on all tariff lines in 2011. Let n_{2011} = the number of tariff

¹⁶ For 2011, out of 632 unmatched lines, we were able to match 51 tariff lines at the 8 digit and 278 lines at the 6 digit level and the remaining 303 tariff lines at the 4 digit level. For 2012-2020, out of 343 unmatched lines, we were able to match 221 lines at 8 digit and 100 lines at 6 digit and the remaining 22 tariff lines were matched at the 4 digit level.

lines in the tariff classification of 2011. The simple (or un-weighted) average tariff may be calculated analogously to equation 3.

(9)

$$TS(2011) = \frac{1}{n_{2011}} \left\{ \sum_{h \in AM_{2011}} TF(h, 2011) + \sum_{h \notin AM_{2011}} TF(h, 2011) \right\} = \frac{1}{n_{2011}} \sum_{h \in A_{2011}} TF(h, 2011)$$

The latter equality holds since $h \notin AM_t$ if and only if $h \in AM_t^c$, where AM_t^c is the complement of AM_t in A_t (for $t = 2011, \dots, 2020$).

Weighted average tariffs for 2011 to 2020. For the weighted average tariff rates, we need trade weights. It is not possible to calculate trade weights for unmatched tariff lines. We therefore base our calculations of the trade weighted average tariff on the matched tariff lines only. While in theory this does not bias the calculation, our estimates in table A-2 below show that, in practice, the higher tariffs are over-represented in the unmatched tariff lines. That is, the excluded tariff lines exclude a disproportionate share of high tariffs from the weighted average calculation from the years 2011 to 2020. Based on our estimate of the bias, we adjust the trade weighted average we report in table 1. For matched tariff lines h ($h \in AM_t$), we calculate the trade weights as follows.

Define v_{jt}^h = the value of imports of tariff line h from country j in time period t , $t' = 2009, 2010, 2011^*$.

We calculate the total value of non-CIS imports of tariff line h in the base period.

$$v_B^h = \sum_{t'=2009}^{2011^*} \sum_{j \in J_{ht'}} v_{jt'}^h \quad t = 2011, \dots, 2020; \quad h \in AM_t,$$

and the total value of non-CIS imports from matched tariff lines as

$$V_{Bt} = \sum_{h \in AM_t} v_B^h \quad t = 2011, \dots, 2020; \quad h \in AM_t.$$

The share or weight of tariff line h in year t is: $w_{ht} = v_B^h / V_{Bt}$.

Weighted average tariff for 2011.

Using the above, define the unadjusted trade weighted average tariff of 2011 as:

$$(10) \quad TWU(2011) = \sum_{h \in AM_{2011}} w_{h2011} T\{RF(h, 2011)\}$$

Since there are tariff lines excluded from this calculation we call equation 10 the unadjusted trade weighted average; we need to ask if the calculation is biased by excluding tariff lines with a higher or lower average tariff. We measure the bias by first calculating the un-weighted average tariff over only the tariff lines in the set AM_t and compare this calculation to the unweighted average tariff over the entire set of tariff lines. Define this average for 2011 as $TSA(2011)$, specifically,

$$(11) \quad TSA(2011) = \frac{1}{n_{AM_t}} \sum_{h \in AM_{2011}} T\{RF(h, 2011)\} \text{ where the denominator is}$$

the number of tariff lines in AM_t .

We define the bias adjustment in the trade weighted average as:

$$(12) \quad Adjust(2011) = TS(2011) - TSA(2011),$$

and finally the trade weighted average $TW(2011)$ is adjusted for the bias and is defined as:

$$(13) \quad TW(2011) = TWU(2011) + Adjust(2011).$$

If the simple average tariff is lower when averaged over the set AM_t , we say the trade weighted average is biased down by averaging over this reduced set of tariff lines. We then adjust the unadjusted trade weighted average by the bias to obtain our estimate of the trade weighted average tariff that we report in table 1.

Bound Tariff Rates for the Years 2012-2020

For the years 2012-2020, we need to first calculate the “bound” or maximum tariffs of the Russian Federation based on the “Schedule of Concessions and Commitments on Goods of the Russian Federation” related to the WTO accession of Russia. For the years 2012-2020, let a_t^h and b_t^h be the ad valorem and specific parts of the tariff from the WTO commitments on tariff line h at year t . Then analogous to our calculations for 2011, we decompose the calculation into matched and unmatched tariff lines. For matched tariff lines in for year t with our base period, we base the calculation of the ad valorem equivalent of the bound specific tariff of tariff line h in year t on imports from all countries of that tariff line in all of the base period years.

$$(14) \quad asw_{jt'}^{h,t} = q_{jt'}^h \cdot b_t^h / v_{jt'}^h \quad h \in AM_t; \quad t' = 2009, 2010, 2011^*$$

Equation 11 states that the ad valorem equivalent of the specific tariff applied to tariff line h in year t depends on the country and year in the base period. We then

aggregate over all years and countries in the base period to get the MFN tariff for product line h for the year 2011. This is calculated by:

(15)

$$T[BOUND(h,t)] = 100\% \times \frac{1}{(J_{h,2009}^* + J_{h,2010}^* + J_{h,2011}^*)} \sum_{t'=2009}^{2011} \sum_{j \in J_{h,t'}} \max\{a_t^h, asw_{jt'}^{h,t}\}$$

where $h \in AM_t$. If $J_{ht'}^* = 0$ for all $t' = 2009, 2010, 2011^*$, we set

$$T[BOUND(h,t)] = 100\% \times a_t^h, \quad h \in AM_t, \quad t = 2012, \dots, 2020.$$

For unmatched tariff lines, we use equation 7, and calculate the bound tariff rate on tariff line h in year t as:

(16)

$$T[BOUND(h,t)] = 100\% \times \frac{1}{(\sum_{t'=2009}^{2011} \sum_{h' \in h_{2011}^k(t')} J_{h',t'}^*)} \sum_{t'=2009}^{2011} \sum_{j \in J_{h,t'}} \sum_{h' \in h_{t'}^k} \max\{a_t^h, q_{jt'}^{h'} b_{t'}^{h'} / v_{jt'}^{h'}\}$$

for $h \notin AM_t$ $t = 2012, \dots, 2020$.

Average Bound Tariffs of the Russian Federation for 2012-2020.

From equations 12 and 13 we can calculate the simple unweighted average bound tariff rates for all tariff lines from 2012 to 2020 and the weighted average tariff rates based on the matched tariff lines. The simple and trade weighted bound tariff averages are:

(17)

$$TS[BOUND(t)] = \frac{1}{n_t} \{ \sum_{h \in AM_t} T[BOUND(h,t)] + \sum_{h \notin AM_t} T[BOUND(h,t)] \} = \frac{1}{n_t} \sum_{h \in A_t} T[BOUND(h,t)]$$

$t = 2012, \dots, 2020$.

The latter equality holds since if $h \notin AM_t$, then $h \in AM_t^c$, where AM_t^c = the complement to AM_t in A_t , i.e., $AM_t^c \cup AM_t = A_t$ and $AM_t^c \cap AM_t = \emptyset$.

$$(18) \quad TW[BOUND(t)] = \sum_{h \in AM_t} w_{ht} T[BOUND(h,t)] \quad h \notin AM_t \quad t = 2012, \dots, 2020.$$

Economy-wide and Aggregated Sector Tariff averages for 2012-2020.

For 2012-2020, the bound tariff rates will progressively reduce the applied tariffs rates of the Russian Federation, but there are many tariff lines where the applied tariff rates in 2011 will be below even the final bound tariff commitments. i.e., water in the tariff commitment schedule. **For the years 2012-2020 therefore, we calculate the tariff of the Russian Federation as the minimum of the bound tariff and the applied tariff of 2011** according to the following formula:

$$(19) T[RF(h,t)] = \min\{T[RF(h,2011)], T[BOUND(h,t)]\} \quad h \in A_t, t = 2012, \dots, 2020.$$

where $T[RF(h,2011)]$ is the applied MFN tariff of the Customs Union of Belarus, Kazakhstan, and Russian Federation as of January 2012. We assume that $T[RF(h,2011)]$ applies in Russia prior to the WTO accession and will continue to apply until the WTO bound rate $T[BOUND(h,t)]$ affects it in year t (if it does).

Then the un-weighted average tariffs for the years 2012-2020 are:

$$(20) TS(t) = \frac{1}{n_t} \sum_{h \in A_t} T[RF(h,t)] \quad t = 2012, \dots, 2020$$

and the weighted average tariffs are:

$$(21) TW(t) = \sum_{h \in AM_t} w_{ht} T[RF(h,t)] + Adjust(t) \quad t = 2012, \dots, 2020$$

where $Adjust(t)$ is defined analogously to $Adjust(2011)$.

With the weighted average calculation the more important import categories receive higher weights. The problem with the weighted average approach is that very high tariffs discourage and may eliminate imports. Then the weight of these high tariffs will be zero. Although both approaches have their merits and problems, unless otherwise stated, our results are based on simple averages.

IV. Results for the Aggregate Average Tariff

Impact of the Customs Union (Average MFN Tariffs)

Our key results for the overall average tariff rates are summarized in table 1 below. The calculations in table 1 for 2010 are based on tariff rates in effect as of April 1, 2010. The common external tariff of the Customs Union went into effect (with limited exceptions mostly in Kazakhstan) on July 1, 2010. We infer that differences in tariffs between 2010 and 2011 are due to the Customs Union. On an un-weighted average basis, tariffs increased slightly from 11.1 percent to 11.5 percent.

Impact of the WTO Commitments on applied average MFN tariffs

We assume that Russia accedes to the WTO in 2012 and implements the first phase of its commitments in 2012. Then the applied MFN tariff of the Customs Union (which is also the tariff of the Russian Federation) begins to decline in 2012. The declines continue until the final tariff cuts of 2020 when the un-weighted average tariff will be 7.9 percent and the weighted average tariff will be 5.8 percent. Most of the commitments are implemented by 2017 or 2018, so the overall tariff average falls only slightly or not at all in the final 2-3 years on the implementation of commitments.

The results show that the more significant cuts are in the tariffs in some of the high tariff sectors. For example, tariffs in the automotive sector will fall from 23.8 to 12.1 percent and in electrical equipment and machinery sector from 9.1 to 5.0 percent. Together imports of these two sectors constitute more than 25 percent of the value of total imports of the Russian Federation. It is possible, however, that as a result of the Russian automobile program, designed to increase Russian production of automobiles and automobile parts, that imports in the automobile sector will decline in the future. If so, the trade weighted average tariff will not fall as sharply when based on the actual trade weights of the future.

But as we explained in the methodology section, the tariff classification changed in 2011 and then again in 2012-2020. Some ten-digit tariff lines have no match with a ten digit tariff line in our base period. Although we are able to calculate a tariff rate for all such tariff lines, we could not calculate a trade weight, and had to exclude such tariff lines from the trade weighted calculation. We check the bias introduced by this exclusion, by taking an un-weighted average for the years 2012-2020 on the matched tariff lines only. The results in table A2 show that, if we only average over the matched tariff lines, the simple average is about 0.3 percentage points lower during 2012-2020 than the simple average over all tariff lines (a full percentage point for 2011 due to a larger number of unmatched tariff lines). We conclude that the trade weighted average for the years 2012-2020 is biased down by about 0.3 percentage points and the estimates we report in the text and table 1 are adjusted for this bias.

Impact on Tariff Lines with Specific Tariffs

Going back to 2001, the Russian government has been progressively increasing the number of tariff lines with a specific tariff component. Table 1 shows that the number of such tariff lines increased from 1609 in 2001 to 2020 in 2011. WTO accession will have an opposite impact. As a result of WTO accession, the number of tariff lines with a specific tariff component will progressively fall, reaching 1371 by the year 2019.

Impact of the WTO Commitments (Simple Average Bound Tariff)

The “bound” or maximum average un-weighted MFN tariff of Russia will be 8.6 percent after all commitments are implemented. Countries may apply tariffs at rates less than their “bound” maximum rates.¹⁷ Assuming the applied tariffs are not increased, the average “bound” MFN tariff of Russia in 2020 will be higher than the average applied un-weighted MFN tariff of 7.9 percent.

We calculate that there are 1498 tariff lines where the current applied tariff of Russia is less than the final “bound” rate under the commitments of Russia to the WTO. 760 of the total tariff lines with applied MFN tariffs less than WTO bound tariff levels are in the machinery and mechanical appliances and electrical machinery and equipment categories (2-digit categories 84 and 85). Examples at the ten digit tariff line level where the value of imports is large are the following. Over \$2 billion of imports were in three ten digit categories of auto parts. They entered with a zero import tariff in 2010 in the Customs Union, while the final bound rate at the WTO for these categories was either five or fifteen percent.¹⁸ Over \$1 billion in electricity turbo-generators (ten digit code 8502292000) entered in 2010 with a Customs Union tariff of zero, while the WTO bound rate is five percent.

¹⁷ The WTO (2011) Secretariat estimated that the un-weighted average bound tariffs of Russia will be 7.8 percent in 2020. Our estimates are slightly higher for two reasons. Due to data limitations, the WTO statistical office had to calculate the ad valorem equivalents of the specific tariffs at the eight-digit level, rather than at the “ten digit” tariff line level of the tariff schedule of the Russian Federation. We had the more detailed ten digit data available, which allows more accurate calculations. See WTO (2007) for more details on their methodology for calculating the ad valorem equivalents of specific tariffs. Further, also due to data limitations, the WTO calculations ignored specific tariffs on a limited number of tariff lines where the specific tariffs and the import data were in different units, an omission which leads to a downward bias in the WTO estimates. This problem arises in the case of motor vehicles. We obtained concordance from using information in other parts of the tariff classification that allowed the concordance (as explained above). Thus we estimated the tariff equivalents of the specific tariffs for all ten digit tariff lines.

¹⁸ These categories are 8707101000 (auto bodies), 8708291000 (parts and accessories) and 8708402001 (gear boxes).

Implications for the Entry of Kazakhstan into the WTO

As has been shown by both Shepotylo (2011) and Jandosov and Sabyrova (2011), Kazakhstan had to significantly increase its MFN tariffs in order to implement the common external tariff of the Belarus-Russia-Kazakhstan Customs Union. Importantly, Kazakhstan had already reportedly signed bilateral market access agreements with several WTO members during its accession negotiations in which it had committed to lower tariffs than the tariffs of the Customs Union. Since there is substantial water in the tariff of Russia's commitments, however, Russia should be able to agree to lower the bound tariffs of the Customs Union to pay "compensation" to the WTO members for Kazakhstan applying higher tariffs than its commitments, without actually having to lower any applied tariffs in Russia.

Comparison of Average Tariffs with Other Countries That Have Acceded to the WTO

Compared with most countries that have acceded to the WTO since 1998, especially the Transition countries, the commitments of the Russian Federation on tariffs on goods are slightly higher. The average bound tariffs for other acceding countries that are not "Least Developed Countries" are: Saudi Arabia, 10.5 percent; Former Yugoslavian Republic of Macedonia, 6.2 percent; Armenia, 7.5 percent; Chinese Taipei, 4.8 percent; China, 9.1 percent; Moldova, 6.0 percent; Croatia, 5.5 percent; Oman, 11.6 percent; Ukraine, 6.0 percent; Albania, 6.6 percent; Georgia, 6.5 percent; Jordan, 15.2 percent; Estonia, 7.3 percent; Latvia, 9.4 percent; Kyrgyz Republic, 6.7 percent; and Montenegro, 5.1 percent.¹⁹ Thus, by the standards of countries that have acceded to the WTO since 1998 that are not "Least Developing Countries," the Russian Federation's bound tariff commitment of 8.6 percent average appears to be slightly higher than average, especially in comparison to the other Transition Countries. Among the Transition Countries, only Latvia and China acceded with higher average bound tariff commitments. Thus, while the tariff commitments of the Russian Federation represent liberalization, they are not unusual compared with other acceding countries.

¹⁹ See World Trade Organization (2005). The "Least Developed Countries" acceded with relatively high bound tariffs: Cambodia, 17.7 percent; Nepal, 23.7 percent; Samoa, 21 percent; Vanuatu, 39.7%; and Cape Verde committed to average bound tariffs of 19 percent for agriculture and 15 percent for industrial goods. The WTO accords a preferential status to the least developed countries. Although they are not officially designated as "least developed," Tonga committed to all tariffs being bound at no higher than 15 or 20 percent; and Viet Nam to a maximum tariff of 35 percent.

V. Results for Tariffs at the Sector Level

Distribution of Applied MFN Tariff Rates (Impact of WTO Accession)

In figure 1 we show the distribution of applied MFN tariff rates in 2011 and 2020. Prior to the implementation of WTO commitments, the distribution of tariff rates is bi-modal with the largest number of tariff lines falling in the 5-10 percent range and in the 15-20 percent range (with a mean of 11 percent as shown in table 1). After all WTO commitments are implemented, the large number of tariff lines in the 15-20 percent range is eliminated and the distribution has a single mode in the 5-10 percent range (where the mean also falls). Tariff peaks fall as well, as there is also a very sharp drop in the number of tariff lines in the 20-30 percent range.

Tariffs at the Level of the Russian Input-Output Table

Tariff Rates. In table 2, we show the evolution of tariff rates for the sectors of the Russian input-output table. (See table 4 for the mapping from the 2-digit Harmonized Tariff system to the 17 sectors of the Russian input-output table.) There sectors where the tariff rates will fall by at least three percentage points are the following (with the percentage points reduction in parentheses): timber, wood, pulp and paper industry (6.1); light industry (4.1); food industry (4.6); other goods producing industries (3.5); other industries (3.0); mechanical engineering and metal working (2.8).

Tariff Lines with a Specific Tariff Component. In table 3, we show the evolution of tariff lines with a specific tariff component at the level of the Russian input-output table. Light industry and the food industry are the sectors where specific tariffs are intensively used. In 2011, 83 percent of the tariff lines with a specific tariff component were in these two sectors. By 2020, however, these two sectors will comprise 88 percent of the tariff lines with a specific tariff component. Thus, while the total number of specific tariffs in these sectors falls considerably by 2020, the percentage reduction in specific tariffs in other sectors is larger. We can see that the Russian government does not use specific tariffs for and energy, mining or ferrous metal products.

Tariffs at the 2-Digit Harmonized System Level

Applied MFN Tariff Rates. In table 4 we present the applied MFN tariff rates of the Russian Federation at the 2-digit Harmonized System level in 2011 and

the same tariff rates in 2020 after all the commitments are implemented. The tariff rates are calculated on both a simple average and weighted average basis. At the 2-digit level, the meat tariffs are by far the highest, averaging over 40 percent on a simple average basis, even after full implementation of WTO commitments. Preparations of meat and fish constitute the next highest category of applied MFN tariffs at the 2-digit level, averaging 17.8 percent on an un-weighted average after full implementation of WTO commitments. The weighted average tariffs on meat are considerably lower, but when tariffs are over 40 percent at the ten-digit level, imports are significantly discouraged and the weighted average tariff likely becomes an inappropriate measure of the extent of protection.

Bound Tariff Rates versus Applied MFN Tariff Rates. We have calculated the number of tariff lines at the ten-digit level where the applied MFN rate (based on 2011 tariff rates) is less than the WTO bound tariff rate. We present this information in table 5, where we show how many such tariff lines fall within each 2-digit Harmonized Tariff code. About half of the tariff lines (760 out of 1522) where the applied rate is less than the bound rate fall in the two categories: machinery and mechanical appliances and electrical machinery and equipment categories (2-digit categories 84 and 85). Precision equipment and motor vehicles and parts are the next most important categories. The tariff lines with applied rates less than bound rates tend to be concentrated in intermediate inputs. This might be explained by lobbying of industries for low tariffs on their inputs. In table 6, we present the tariff lines that are most important in terms of value of imports, where the applied MFN tariff rate in 2011 is less than the final bound MFN tariff rate.

VI. Conclusions

We find that WTO commitments will progressively and significantly lower the applied tariffs of the Russian Federation. After all commitments are implemented, tariffs will fall from 11.5 percent to 7.9 percent on an un-weighted average basis and from 13.0 percent to about 5.8 percent on a weighted average basis. The average “bound” tariff rate of Russia will be higher than the applied tariffs--8.6 percent bound tariff on an un-weighted average basis. We calculate that there will be 1498 tariff lines with applied tariff rates less than the maximum or bound rates under the WTO commitments. Russia’s commitments represent significant tariff liberalization, but compared with other countries that have acceded to the WTO, the commitments of the

Russian Federation are not unusual, especially when compared to the Transition countries.

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Table 1 Applied Most Favored Nation (MFN) tariffs in Russia in 2001-2020

| Year | Number of product lines | Number of product lines with non-zero specific tariffs | Applied MFN rate | | | | Bound MFN tariff rate | Number of product lines with bound MFN rate above applied MFN rate |
|------|-------------------------|--|---------------------|--------------------|------------------|--------------------|-----------------------|--|
| | | | Un-weighted average | | Weighted average | | | |
| | | | Mean | Standard deviation | Mean | Standard deviation | | |
| 2001 | 11,076 | 1,609 | 11.7 | 10.8 | 11.4 | 9.5 | | |
| 2002 | 11,148 | 1,624 | 12.2 | 13.7 | 13.3 | 14.9 | | |
| 2003 | 11,161 | 1,774 | 12.8 | 18.7 | 14.3 | 18.0 | | |
| 2004 | 11,218 | 1,783 | 12.4 | 13.3 | 14.1 | 17.0 | | |
| 2005 | 11,365 | 1,792 | 12.1 | 12.7 | 14.0 | 15.2 | | |
| 2006 | 10,875 | 1,920 | 11.7 | 11.3 | 13.7 | 12.2 | | |
| 2007 | 11,001 | 1,856 | 11.4 | 11.3 | 11.7 | 11.2 | | |
| 2008 | 11,057 | 1,924 | 11.3 | 10.8 | 13.4 | 22.7 | | |
| 2009 | 11,067 | 1,891 | 11.9 | 13.2 | 11.6 | 16.6 | | |
| 2010 | 11,051 | 1,948 | 11.1 | 13.5 | 11.0 | 17.6 | | |
| 2011 | 11,125 | 2,020 | 11.5 | 14.8 | 13.0 | 20.8 | | |
| 2012 | 11,557 | 1,422 | 10.9 | 10.7 | 9.3 | 8.1 | 12.4 | |
| 2013 | 11,557 | 1,421 | 10.0 | 10.3 | 8.3 | 7.8 | 11.2 | |
| 2014 | 11,557 | 1,420 | 9.2 | 10.0 | 7.6 | 7.6 | 10.1 | |
| 2015 | 11,557 | 1,407 | 8.4 | 9.9 | 6.9 | 7.4 | 9.1 | |
| 2016 | 11,557 | 1,401 | 8.1 | 9.8 | 6.3 | 6.6 | 8.8 | |
| 2017 | 11,557 | 1,390 | 8.0 | 9.7 | 6.0 | 6.2 | 8.7 | |
| 2018 | 11,557 | 1,372 | 8.0 | 9.7 | 6.0 | 5.9 | 8.6 | |
| 2019 | 11,557 | 1,371 | 8.0 | 9.7 | 5.9 | 5.7 | 8.6 | |
| 2020 | 11,557 | 1,371 | 7.9 | 9.4 | 5.8 | 5.1 | 8.6 | |

Note: Due to changes in classification, there are tariff lines in the 2012-2020 that do not correspond to tariff lines in our base period of 2009-2011; we call these “unmatched” tariff lines. Weighted averages for 2011-2020 are computed based on matched tariff lines only. As a result, for the years 2011-2020, the weighted average calculation appears to be biased down by about one percentage point.

Table 2 Applied MFN tariffs in 2001-2020 by industry

| Code | Industry | Year | | | | | | | | | | | | | | | | | | | |
|------|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| 1 | Electric industry | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2 | Oil extraction | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 3.8 (2.5) | 1.7 (2.6) | 1.0 (2.2) | 1.0 (2.2) | 1.0 (2.2) | 1.0 (2.2) | 1.0 (2.2) | 1.0 (2.2) | 1.0 (2.2) | 1.0 (2.2) | 1.0 (2.2) |
| 3 | Oil processing | 5.2 (1.8) | 5.2 (1.8) | 5.2 (1.8) | 5.2 (1.8) | 5.2 (1.8) | 5.2 (1.8) | 4.9 (2.3) | 5.2 (1.8) | 5.1 (1.8) | 5.1 (1.9) | 5.1 (1.7) | 5.1 (1.8) | 5.1 (1.6) | 5.0 (1.4) | 5.0 (1.2) | 5.0 (0.9) | 4.9 (0.8) | 4.9 (0.7) | 4.9 (0.7) | 4.9 (0.7) |
| 4 | Gas | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 4.7 (1.3) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) |
| 5 | Coalmining | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 5.0 (0.0) | 4.4 (1.8) | 4.4 (1.8) | 4.4 (1.8) | 4.4 (1.8) | 4.4 (1.8) | 4.4 (1.8) | 4.4 (1.8) | 4.4 (1.8) | 4.4 (1.8) | 4.4 (1.8) |
| 6 | Other fuel industries | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| 7 | Ferrous metallurgy | 8.0 (4.8) | 8.0 (4.8) | 8.0 (4.8) | 8.0 (4.8) | 8.0 (4.8) | 8.4 (5.1) | 7.9 (5.3) | 7.9 (5.2) | 9.0 (6.) | 8.7 (5.8) | 8.6 (5.8) | 8.1 (5.4) | 7.3 (4.5) | 6.5 (3.7) | 6.0 (3.2) | 5.9 (3.0) | 5.9 (3.0) | 5.9 (3.0) | 5.9 (3.0) | 5.9 (3.0) |
| 8 | Non-ferrous metallurgy | 10.6 (6.0) | 10.6 (6.0) | 10.8 (6.1) | 10.7 (6.0) | 10.6 (6.0) | 10.7 (6.2) | 9.8 (6.6) | 9.9 (6.6) | 9.8 (6.6) | 9.9 (10.1) | 10.0 (10.1) | 9.8 (7.1) | 9.1 (6.6) | 8.5 (6.) | 7.9 (5.6) | 7.5 (5.3) | 7.4 (5.2) | 7.4 (5.2) | 7.4 (5.2) | 7.4 (5.2) |
| 9 | Chemicals and petrochemicals | 7.8 (5.1) | 8.0 (7.1) | 8.0 (7.4) | 8.0 (7.5) | 7.9 (6.9) | 7.6 (4.4) | 7.7 (5.0) | 7.6 (5.) | 7.6 (4.8) | 6.9 (4.9) | 7.4 (10.) | 7.2 (4.6) | 6.6 (3.7) | 5.9 (3.) | 5.5 (2.7) | 5.3 (2.4) | 5.2 (2.2) | 5.2 (2.2) | 5.2 (2.2) | 5.2 (2.2) |
| 10 | Mechanical engineering and metal working | 10.5 (7.7) | 11.0 (15.9) | 11.6 (28.3) | 11.0 (15.0) | 10.6 (13.8) | 9.2 (12.7) | 8.9 (12.9) | 8.5 (11.8) | 9.7 (16.6) | 8.3 (15.8) | 8.9 (18.7) | 8.3 (9.6) | 7.6 (9.1) | 6.9 (8.7) | 6.2 (8.5) | 5.9 (8.3) | 5.8 (8.2) | 5.8 (8.1) | 5.7 (8.0) | 5.7 (8.0) |
| 11 | Timber, wood, pulp and paper | 14.9 (5.5) | 15.1 (6.6) | 15.5 (7.7) | 15.4 (7.5) | 15.1 (6.6) | 15.6 (8.0) | 15.7 (8.4) | 15.3 (7.6) | 15.0 (6.6) | 14.3 (6.6) | 14.3 (5.9) | 14.1 (5.9) | 12.7 (5.2) | 11.1 (4.7) | 9.8 (4.3) | 8.9 (3.9) | 8.5 (3.3) | 8.2 (2.9) | 8.2 (2.9) | 8.2 (2.9) |
| 12 | Construction materials | 13.5 (5.2) | 13.6 (6.5) | 13.6 (5.8) | 13.4 (5.0) | 13.4 (5.2) | 13.4 (5.0) | 13.0 (5.2) | 13.3 (5.1) | 13.2 (5.) | 12.8 (5.2) | 12.7 (5.2) | 12.9 (5.1) | 11.8 (4.7) | 11.0 (4.3) | 10.3 (4.1) | 10.0 (4.0) | 9.9 (4.0) | 9.9 (4.0) | 9.9 (4.0) | 9.9 (4.0) |
| 13 | Light industry | 16.6 (19.9) | 17.3 (16.5) | 17.9 (17.9) | 16.2 (11.2) | 15.5 (8.1) | 14.3 (7.5) | 15.0 (7.6) | 14.8 (7.4) | 14.8 (7.5) | 12.2 (6.2) | 12.3 (6.3) | 12.3 (5.8) | 11.3 (5.2) | 10.3 (4.7) | 8.7 (4.3) | 8.3 (4.2) | 8.2 (4.1) | 8.2 (4.1) | 8.2 (4.1) | 8.2 (4.1) |
| 14 | Food industry | 14.5 (10.9) | 14.9 (16.1) | 16.4 (17.0) | 16.7 (18.0) | 16.3 (19.0) | 16.6 (15.5) | 15.5 (15.0) | 15.7 (14.4) | 17.1 (17.5) | 17.6 (18.9) | 18.2 (18.7) | 17.0 (16.8) | 15.9 (16.8) | 15.0 (16.8) | 14.3 (16.8) | 14.0 (16.9) | 14.0 (16.9) | 14.0 (16.9) | 14.0 (16.9) | 13.6 (16.2) |
| 15 | Other industries | 11.7 (7.6) | 12.0 (8.7) | 12.0 (8.4) | 12.1 (8.5) | 12.1 (8.8) | 12.1 (8.2) | 12.0 (8.2) | 11.9 (8.1) | 11.8 (7.7) | 10.7 (6.9) | 10.4 (6.8) | 10.8 (6.9) | 9.9 (6.2) | 9.0 (5.6) | 8.1 (5.1) | 7.6 (4.7) | 7.4 (4.4) | 7.4 (4.4) | 7.4 (4.4) | 7.4 (4.4) |
| 17 | Agriculture and forestry | 7.8 (5.8) | 9.2 (8.0) | 9.8 (9.7) | 9.5 (8.6) | 9.1 (8.0) | 8.1 (5.9) | 8.2 (6.0) | 8.2 (6.4) | 8.2 (5.8) | 8.0 (6.7) | 7.7 (6.6) | 7.8 (5.7) | 6.9 (4.9) | 6.3 (4.3) | 5.9 (3.9) | 5.8 (3.7) | 5.7 (3.6) | 5.7 (3.6) | 5.7 (3.6) | 5.7 (3.6) |
| 22 | Other goods-producing sectors | 18.6 (16.0) | 18.2 (13.0) | 18.3 (14.2) | 17.8 (10.5) | 17.3 (8.4) | 17.7 (8.3) | 17.5 (8.1) | 17.3 (7.8) | 17.3 (7.8) | 14.5 (8.3) | 14.2 (8.) | 14.6 (8.3) | 13.7 (7.5) | 12.8 (6.9) | 12.1 (6.4) | 11.1 (6.2) | 10.7 (6.1) | 10.7 (6.1) | 10.7 (6.1) | 10.7 (6.1) |

Note: Table reports average applied MFN rates by industries of the Russian input-output table. The standard deviation is reported in parentheses. Mapping from 10 digit codes to industries of the Russian input-output table is based on the Rosstat classification.

Table 3 Number of product lines with non-zero specific tariffs in 2001-2020 by industry

| Code | Industry | Year | | | | | | | | | | | | | | | | | | | |
|--------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| 1 | Electric industry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | Oil extraction | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | Oil processing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | Gas | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | Coalmining | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | Other fuel industries | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | Ferrous metallurgy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | Non-ferrous metallurgy | 1 | 8 | 8 | 8 | 8 | 4 | 4 | 4 | 4 | 8 | 8 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 9 | Chemicals and petrochemicals | 22 | 30 | 30 | 31 | 30 | 33 | 33 | 33 | 37 | 38 | 48 | 14 | 14 | 13 | 11 | 11 | 7 | 7 | 7 | 7 |
| 10 | Mechanical engineering and metal working | 120 | 125 | 137 | 138 | 141 | 130 | 132 | 137 | 150 | 153 | 148 | 86 | 89 | 86 | 77 | 76 | 75 | 63 | 65 | 65 |
| 11 | Timber, wood, pulp and paper | 39 | 39 | 39 | 39 | 39 | 50 | 50 | 48 | 48 | 51 | 48 | 59 | 59 | 59 | 56 | 55 | 51 | 43 | 43 | 43 |
| 12 | Construction materials | 17 | 17 | 17 | 17 | 17 | 19 | 19 | 19 | 19 | 19 | 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 13 | Light industry | 598 | 596 | 596 | 596 | 596 | 579 | 580 | 580 | 580 | 547 | 557 | 468 | 469 | 468 | 467 | 467 | 466 | 466 | 466 | 466 |
| 14 | Food industry | 748 | 752 | 882 | 889 | 896 | 1,050 | 983 | 1,048 | 998 | 1,072 | 1,137 | 752 | 762 | 763 | 760 | 755 | 755 | 755 | 755 | 755 |
| 15 | Other industries | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 7 | 7 | 7 | 7 | 7 | 6 | 6 | 6 | 6 |
| 17 | Agriculture and forestry | 50 | 50 | 50 | 50 | 50 | 40 | 40 | 40 | 40 | 45 | 46 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 |
| 22 | Other goods-producing sectors | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Total | | 1,609 | 1,624 | 1,774 | 1,783 | 1,792 | 1,920 | 1,856 | 1,924 | 1,891 | 1,948 | 2,020 | 1,440 | 1,454 | 1,450 | 1,432 | 1,425 | 1,414 | 1,394 | 1,396 | 1,396 |

Note: Table reports number of lines at 10-digit level with a specific tariff greater than zero by industries of the Russian input-output table. Mapping from 10 digit codes to industries of the Russian input-output table is based on the Rosstat classification.

Table 4 Applied MFN rates before and after WTO accession by HS 2 digit product lines

| Product code | Simple average | | Weighted average | | Import share 2011, % | Import share 2020, % | Industry |
|------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------------|-------------------------|----------|
| | 2011 tariff, % | 2020 tariff, % | 2011 tariff, % | 2020 tariff, % | | | |
| 01 Live animals | 5.4 | 3.6 | 27.0 | 2.1 | 0.2 | 0.2 | 17 |
| 02 Meat | 45.7 | 43.6 | 27.7 | 17.5 | 3.4 | 0.8 | 14 |
| 03 Fish | 10.5 | 6.1 | 10.1 | 3.9 | 0.3 | 1.2 | 14 |
| 04 Dairy, eggs,honey | 21.1 | 14.9 | 19.4 | 14.9 | 0.8 | 0.7 | 14 |
| 05 Prod.of animal origin | 7.6 | 7.3 | 5.2 | 5.1 | 0.1 | 0.1 | 14 |
| 06 Live plants | 11.9 | 4.9 | 14.8 | 5.2 | 0.5 | 0.5 | 17 |
| 07 Edible vegetables | 15.1 | 11.4 | 15.1 | 11.5 | 1.5 | 1.2 | 17 |
| 08 Edible fruits and nuts | 7.8 | 6.1 | 7.9 | 4.3 | 2.3 | 2.7 | 14, 17 |
| 09 Coffee, tea, and spices | 6.0 | 5.0 | 4.1 | 2.8 | 0.7 | 0.6 | 14 |
| 10 Cereals | 15.5 | 8.4 | 15.2 | 7.3 | 0.1 | 0.2 | 14 |
| 11 Prod.mill.indust | 11.1 | 9.7 | 13.0 | 8.6 | 0.1 | 0.1 | 14 |
| 12 Oil seed, oleagi fruits | 4.5 | 4.2 | 3.3 | 1.3 | 0.3 | 0.6 | 17 |
| 13 Lac; gums, resins | 5.0 | 5.0 | 5.0 | 5.0 | 0.1 | 0.1 | 14 |
| 14 Vegetable materials | 13.0 | 10.2 | 15.0 | 9.6 | 0.0 | 0.0 | 17 |
| 15 Fats & oils | 11.0 | 9.0 | 7.2 | 5.4 | 0.5 | 0.4 | 14 |
| 16 Prep of meat, fish etc | 20.4 | 17.8 | 21.4 | 14.9 | 0.2 | 0.2 | 14 |
| 17 Sugars and confectionery | 8.7 | 15.9 | 18.8 | 24.5 | 0.2 | 0.9 | 14 |
| 18 Cocoa and preparations | 13.0 | 5.3 | 8.2 | 3.4 | 0.6 | 0.5 | 14 |
| 19 Prep.of cereal, flour | 15.0 | 11.6 | 11.7 | 9.1 | 0.4 | 0.3 | 14 |
| 20 Prep. of vegetable, fruit, nuts | 13.6 | 9.5 | 11.1 | 9.0 | 0.7 | 0.6 | 14 |
| 21 Miscellaneous edible preps | 17.9 | 10.9 | 14.3 | 8.7 | 0.7 | 0.9 | 14 |
| 22 Beverages, spirits and vinegar | 18.6 | 12.5 | 18.4 | 9.7 | 0.9 | 1.0 | 14 |
| 23 Residues & waste from food | 7.7 | 5.5 | 7.2 | 4.4 | 0.7 | 0.6 | 14 |
| 24 Tobacco and tobacco substitutes | 12.6 | 8.1 | 15.0 | 5.2 | 0.3 | 0.8 | 14 |
| 25 Salt; sulphur; earth & stone | 5.0 | 4.7 | 5.9 | 5.0 | 0.3 | 0.2 | 12 |
| 26 Ores, slag and ash | 3.9 | 3.9 | 4.2 | 4.1 | 0.1 | 0.1 | 8 |
| 27 Mineral fuels, oils & product | 4.7 | 4.6 | 2.7 | 4.2 | 0.3 | 0.7 | 3 |
| 28 Inorganic chemicals | 5.1 | 4.8 | 2.2 | 2.0 | 1.0 | 0.9 | 9 |
| 29 Organic chemicals | 4.8 | 4.6 | 4.9 | 4.4 | 0.8 | 1.2 | 8 |
| 30 Pharmaceutical products | 8.1 | 4.1 | 6.6 | 3.2 | 1.1 | 6.5 | 8 |
| 31 Fertilisers | 9.7 | 6.5 | 10.0 | 6.4 | 0.0 | 0.0 | 8 |
| 32 Tanning/dyeing extracts | 4.3 | 4.0 | 5.2 | 4.4 | 1.1 | 1.0 | 8 |
| 33 Essential oils & resinoids | 8.9 | 5.5 | 12.7 | 6.0 | 1.9 | 1.8 | 14 |
| 34 Soap, washing preps | 12.5 | 6.1 | 13.9 | 5.7 | 0.5 | 0.7 | 14 |
| 35 Albuminoidal subs; glues | 6.3 | 4.9 | 8.1 | 4.4 | 0.3 | 0.3 | 14 |
| 36 Explosives; pyrotechnic prod. | 17.5 | 6.3 | 18.8 | 6.4 | 0.0 | 0.0 | 8 |
| 37 Photographic goods | 6.5 | 5.7 | 6.3 | 5.3 | 0.1 | 0.1 | 8 |
| 38 Misc. chemical products | 6.0 | 4.8 | 5.1 | 4.9 | 1.2 | 1.3 | 9 |
| 39 Plastics and articles thereof | 10.2 | 5.9 | 10.0 | 5.7 | 3.7 | 4.1 | 8 |
| 40 Rubber and articles thereof | 13.2 | 6.3 | 7.5 | 5.2 | 0.9 | 0.8 | 8 |
| 41 Raw hides and skins | 3.3 | 3.4 | 4.1 | 4.1 | 0.0 | 0.0 | 13 |
| 42 Articles of leather | 20.4 | 12.7 | 20.5 | 12.9 | 0.5 | 0.5 | 13 |
| 43 Furskins and articles thereof | 9.7 | 5.0 | 11.8 | 8.8 | 0.2 | 0.1 | 13 |
| 44 Wood and articles of wood | 15.0 | 8.5 | 16.1 | 7.7 | 0.3 | 0.4 | 11 |
| 45 Cork and articles of cork | 5.0 | 5.0 | 5.0 | 5.0 | 0.0 | 0.0 | 11 |
| 46 Manufactures of straw | 15.0 | 8.0 | 15.0 | 7.3 | 0.0 | 0.0 | 11 |

Table 4 (continued) Applied MFN rates before and after WTO accession by HS 2 digit product lines

| Product code | Simple average | | Weighted average | | Import | Import | Industry |
|---|----------------|-----------|------------------|-----------|---------|---------|----------|
| | 2011 | 2020 | 2011 | 2020 | share | share | |
| | tariff, % | tariff, % | tariff, % | tariff, % | 2011, % | 2020, % | |
| 47 Pulp of wood | 7.4 | 6.6 | 8.5 | 5.8 | 0.1 | 0.0 | 11 |
| 48 Paper & paperboard | 13.5 | 7.7 | 11.6 | 5.8 | 1.7 | 1.9 | 11 |
| 49 Printed books, newspapers | 6.5 | 3.3 | 2.9 | 0.6 | 0.7 | 0.7 | 15 |
| 50 Silk | 4.8 | 3.6 | 5.0 | 3.1 | 0.0 | 0.0 | 13 |
| 51 Wool, animal hair | 8.5 | 6.5 | 12.4 | 8.1 | 0.0 | 0.0 | 13 |
| 52 Cotton | 11.0 | 7.9 | 9.6 | 7.0 | 0.1 | 0.1 | 13 |
| 53 Other vegetable fibres | 7.6 | 6.9 | 5.9 | 5.5 | 0.0 | 0.0 | 13 |
| 54 Man-made filaments | 9.1 | 6.5 | 9.9 | 7.2 | 0.2 | 0.2 | 13 |
| 55 Man-made staple fibres | 8.0 | 7.4 | 8.4 | 6.4 | 0.4 | 0.3 | 13 |
| 56 Wadding, felt & nonwoven | 8.6 | 6.7 | 6.3 | 5.5 | 0.2 | 0.2 | 13 |
| 57 Carpets | 26.0 | 5.5 | 27.0 | 4.7 | 0.0 | 0.1 | 13 |
| 58 Special woven fab. | 15.0 | 10.3 | 15.0 | 10.1 | 0.1 | 0.1 | 13 |
| 59 Cover/laminated textile | 6.7 | 6.1 | 5.2 | 5.1 | 0.2 | 0.2 | 13 |
| 60 Knitted or crocheted fabrics | 10.0 | 7.3 | 10.0 | 7.2 | 0.2 | 0.2 | 13 |
| 61 Art of apparel, knitted | 14.3 | 9.4 | 13.8 | 7.8 | 1.3 | 1.1 | 13 |
| 62 Art of apparel, not knitted | 15.1 | 10.0 | 14.9 | 11.2 | 1.6 | 1.4 | 13 |
| 63 Other made up textile articles | 19.8 | 11.9 | 22.6 | 12.7 | 0.4 | 0.4 | 13 |
| 64 Footwear | 11.7 | 4.9 | 11.9 | 4.4 | 1.9 | 1.6 | 13 |
| 65 Headgear | 11.6 | 12.3 | 10.1 | 12.3 | 0.0 | 0.1 | 13 |
| 66 Umbrellas | 15.0 | 15.0 | 15.0 | 15.0 | 0.0 | 0.0 | 13 |
| 67 Prepr of feathers & down | 12.3 | 11.3 | 18.1 | 14.4 | 0.0 | 0.0 | 15 |
| 68 Art of stone | 14.5 | 11.6 | 14.9 | 10.8 | 0.3 | 0.4 | 12 |
| 69 Ceramic products | 17.0 | 11.2 | 18.3 | 10.6 | 0.3 | 0.4 | 12 |
| 70 Glass and glassware | 13.6 | 11.1 | 13.3 | 9.8 | 0.5 | 0.4 | 12 |
| 71 Pearls, prec. stones & metals | 18.5 | 13.3 | 13.4 | 9.0 | 0.0 | 0.1 | 22 |
| 72 Iron and steel | 5.4 | 4.5 | 4.9 | 4.4 | 1.4 | 1.4 | 7 |
| 73 Articles of iron or steel | 13.8 | 8.2 | 14.5 | 7.7 | 3.1 | 2.4 | 7 |
| 74 Copper and articles thereof | 4.9 | 4.6 | 5.0 | 3.9 | 0.2 | 0.2 | 8 |
| 75 Nickel and articles thereof | 7.9 | 6.7 | 5.8 | 4.4 | 0.1 | 0.1 | 8 |
| 76 Aluminium and articles thereof | 15.5 | 8.6 | 19.8 | 10.0 | 0.5 | 0.5 | 8 |
| 78 Lead and articles thereof | 5.0 | 3.5 | 5.0 | 4.4 | 0.0 | 0.0 | 8 |
| 79 Zinc and articles thereof | 5.0 | 3.7 | 5.0 | 3.7 | 0.0 | 0.0 | 8 |
| 80 Tin and articles thereof | 11.6 | 10.0 | 5.1 | 1.9 | 0.0 | 0.0 | 8 |
| 81 Other base metals and articles there | 10.7 | 9.3 | 10.4 | 8.7 | 0.1 | 0.1 | 8 |
| 82 Tool, implement, cutlery, spoons | 8.0 | 6.6 | 7.9 | 6.1 | 0.7 | 0.7 | 10 |
| 83 Miscellaneous articles of base metal | 14.5 | 9.9 | 8.4 | 7.4 | 0.5 | 0.6 | 10 |
| 84 Machinery and mechanical appliances | 3.7 | 3.1 | 2.8 | 2.2 | 20.3 | 18.2 | 10 |
| 85 Electrical mchy equip | 9.1 | 5.0 | 5.7 | 2.7 | 11.5 | 12.4 | 10 |
| 86 Railw/tramw locom | 7.0 | 6.3 | 5.9 | 4.7 | 0.2 | 0.2 | 10 |
| 87 Vehicles | 23.8 | 12.1 | 33.2 | 9.7 | 13.4 | 10.3 | 10 |
| 88 Aircraft, spacecraft | 12.4 | 9.3 | 11.1 | 10.0 | 1.1 | 0.7 | 10 |
| 89 Ships, boats | 11.5 | 8.9 | 7.0 | 6.1 | 0.7 | 0.6 | 10 |
| 90 Precision equipment | 5.3 | 4.0 | 2.5 | 1.9 | 3.4 | 3.2 | 10 |
| 91 Clocks and watches | 28.0 | 10.0 | 39.2 | 8.5 | 0.1 | 0.1 | 10 |
| 92 Musical instruments | 7.7 | 6.6 | 10.4 | 7.6 | 0.0 | 0.0 | 15 |
| 93 Arms and ammunition | 20.0 | 14.7 | 20.0 | 13.4 | 0.0 | 0.0 | 10 |
| 94 Furniture | 17.2 | 9.6 | 18.0 | 10.4 | 1.6 | 1.3 | 10 |
| 95 Toys & sports requisites | 12.9 | 8.6 | 11.7 | 8.0 | 0.6 | 0.7 | 15 |
| 96 Misc.manufactured articles | 13.1 | 10.6 | 13.7 | 10.5 | 0.3 | 0.2 | 10 |
| 97 Works of art | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15 |

Notes: Table reports simple average applied MFN tariffs before the WTO accession (the customs union tariff rates as of the end of 2011) and after the WTO accession (applied MFN rates as of 2020) by 2 digit codes of HS product classification. It also reports import share in total import in 2010, only 2012 product lines that match trade statistics of 2010 are included. Finally, it provides the mapping from 2 digit HS code to industry of the input-output table. The mapping is not always one-to-one, the most frequent industry is reported.

Table 5: Water in the bound tariff schedule, by 2-digit category

Tariff Lines with applied MFN rates in 2011 lower than final bound WTO rates

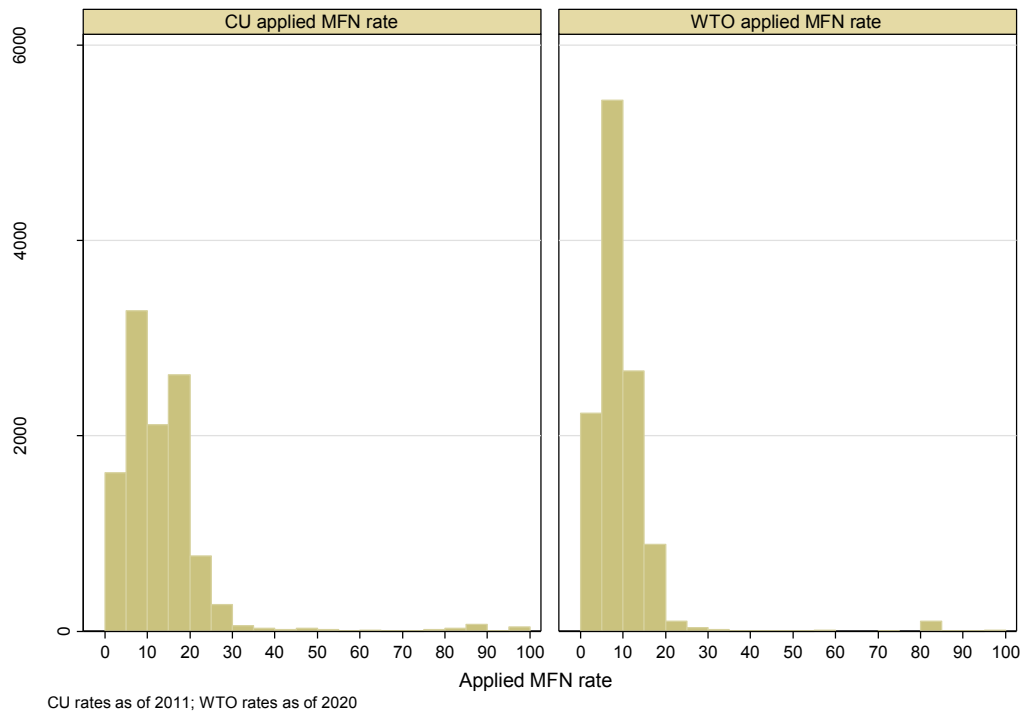
| 2-digit HS code | Number of lines | 2-digit HS code | Number of lines |
|------------------------------------|------------------------|--|------------------------|
| 01 Live animals | 5 | 50 Silk | 1 |
| 02 Meat | 4 | 51 Wool, animal hair | 3 |
| 03 Fish | 0 | 52 Cotton | 0 |
| 04 Dairy, eggs, honey | 2 | 53 Other vegetable fibres | 0 |
| 05 Prod. of animal origin | 1 | 54 Man-made filaments | 15 |
| 06 Live plants | 2 | 55 Man-made staple fibres | 0 |
| 07 Edible vegetables | 0 | 56 Wadding, felt & nonwoven | 0 |
| 08 Edible fruits and nuts | 13 | 57 Carpets | 0 |
| 09 Coffee, tea, and spices | 7 | 58 Special woven fab. | 0 |
| 10 Cereals | 3 | 59 Cover/laminated textile | 0 |
| 11 Prod. mill. indust | 3 | 60 Knitted or crocheted fabrics | 0 |
| 12 Oil seed, oleagi fruits | 3 | 61 Art of apparel, knitted | 16 |
| 13 Lac; gums, resins | 0 | 62 Art of apparel, not knitted | 39 |
| 14 Vegetable materials | 0 | 63 Other made up textile articles | 0 |
| 15 Fats & oils | 17 | 64 Footwear | 3 |
| 16 Prep of meat, fish etc | 2 | 65 Headgear | 12 |
| 17 Sugars and confectionery | 14 | 66 Umbrellas | 0 |
| 18 Cocoa and preparations | 1 | 67 Prepr of feathers & down | 6 |
| 19 Prep. of cereal, flour | 0 | 68 Art of stone | 2 |
| 20 Prep. of vegetable, fruit, nuts | 12 | 69 Ceramic products | 3 |
| 21 Miscellaneous edible preps | 2 | 70 Glass and glassware | 9 |
| 22 Beverages, spirits and vinegar | 0 | 71 Pearls, prec. stones & metals | 4 |
| 23 Residues & waste from food | 1 | 72 Iron and steel | 37 |
| 24 Tobacco and tobacco substitutes | 1 | 73 Articles of iron or steel | 34 |
| 25 Salt; sulphur; earth & stone | 3 | 74 Copper and articles thereof | 3 |
| 26 Ores, slag and ash | 9 | 75 Nickel and articles thereof | 7 |
| 27 Mineral fuels, oils & product | 8 | 76 Aluminium and articles thereof | 11 |
| 28 Inorganic chemicals | 9 | 78 Lead and articles thereof | 0 |
| 29 Organic chemicals | 22 | 79 Zinc and articles thereof | 0 |
| 30 Pharmaceutical products | 5 | 80 Tin and articles thereof | 0 |
| 31 Fertilisers | 0 | 81 Other base metals and articles there | 22 |
| 32 Tanning/dyeing extracts | 14 | 82 Tool, implement, cutlery, spoon & for | 0 |
| 33 Essential oils & resinoids | 3 | 83 Miscellaneous articles of base metal | 14 |
| 34 Soap, washing preps | 1 | 84 Machinery and mechanical appliances | 619 |
| 35 Albuminoidal subs; glues | 0 | 85 Electrical mchy equip | 140 |
| 36 Explosives; pyrotechnic prod. | 2 | 86 Railw/tramw locom | 2 |
| 37 Photographic goods | 26 | 87 Vehicles | 79 |
| 38 Misc. chemical products | 3 | 88 Aircraft, spacecraft | 7 |
| 39 Plastics and articles thereof | 24 | 89 Ships, boats | 4 |
| 40 Rubber and articles thereof | 12 | 90 Precision equipment | 93 |
| 41 Raw hides and skins | 23 | 91 Clocks and watches | 3 |
| 42 Articles of leather | 1 | 92 Musical instruments | 0 |
| 43 Furskins and articles thereof | 0 | 93 Arms and ammunition | 0 |
| 44 Wood and articles of wood | 0 | 94 Furniture | 24 |
| 45 Cork and articles of cork | 0 | 95 Toys & sports requisites | 11 |
| 46 Manufactures of straw | 0 | 96 Misc. manufactured articles | 1 |
| 47 Pulp of wood | 15 | 97 Works of art | 0 |
| 48 Paper & paperboard | 1 | | |
| 49 Printed books, newspapers | 0 | Total | 1498 |

Table 6 Examples of products with the final bound rate above the applied MFN rate

| 10 digit code | Description | Import in 2010, million USD | CU applied | Final |
|---------------|---|--------------------------------|-------------------|--------------------|
| | | | MFN rate, 2011 | bound rate 2020 |
| 8707101000 | Car bodies | 1135 | 0 | 15 |
| 8502392000 | Electricity turbo-generators | 1037 | 0 | 5 |
| 8708291000 | Parts and accessories of the motor vehicles | 725 | 0 | 5 |
| 8407341000 | Spark- ignition reciprocating or rotary internal combustion piston engines | 610 | 0 | 10 |
| 8537109900 | Boards, panels, consoles, desks, cabinets and other bases for electric control or the distribution of electricity | 402 | 0 | 5 |
| 8479820000 | Mixing, kneading, crushing, grinding, screening, sifting, homogenising, emulsifying or stirring machines | 351 | 0 | 5 |
| 8455210009 | Metal- rolling mills and rolls therefor | 349 | 0 | 5 |
| 8415900009 | Parts of air-conditioning machines | 325 | 0 | 5 |
| 8415109000 | Air-conditioning machines | 286 | 0 | 5 |
| 7305110004 | Tubes and pipes | 285 | 0 | 7.5 |
| 8708402001 | Gear boxes | 278 | 0 | 5 |
| 9022120000 | Computed tomography apparatus | 275 | 0 | 5 |
| 1511909908 | Palm oil and its fractions | 271 | 0 | 3 |
| 8509400000 | Food grinders and mixers, fruit or vegetable juice extractors | 268 | 5 | 10 |
| 9018120000 | ultrasonic scanning apparatus | 264 | 0 | 5 |
| 8422400008 | packing and wrapping machinery | 258 | 0 | 5 |
| 7208512009 | Flat- rolled products of iron or non- alloy steel | 249 | 0 | 5 |
| 9019200000 | ozone therapy, oxygen therapy, aerosol therapy, artificial respiration or other therapeutic respiration apparatus | 244 | 0 | 4 |
| 8422300008 | machinery for filling, closing, sealing, or labelling bottles | 229 | 0 | 5 |
| 8479810000 | Machines for treating metal, including electric wire coil- winders | 226 | 0 | 5 |

Note: An applied MFN rate includes both ad valorem and specific components of the tariff. Specific component of the tariff is translated into the ad valorem equivalent according to the formula that is explained in the methodology section and using import statistics of Russia in 2006-2010. For 2011-2020, the ad valorem equivalent is computed using the 2009-2011 import data.

Figure 1 Distribution of applied MFN tariffs before and after WTO accession



Note: Figure reports distribution of the applied MFN rates for more than 11,000 product lines at 10 digit level of the tariff classification for the Customs Union as of the end of 2011 and after the transition period of the WTO accession in 2020.

Table A1 Applied MFN tariffs in Russia in 2006-2020

| Year | Number of product lines | Simple average | | | | Weighted average | | | |
|------|-------------------------|-----------------|--------------------|------------------|--------------------|------------------|--------------------|------------------|--------------------|
| | | Ad valorem rate | | Applied MFN rate | | Ad valorem rate | | Applied MFN rate | |
| | | Mean | Standard deviation | Mean | Standard deviation | Mean | Standard deviation | Mean | Standard deviation |
| 2006 | 10,875 | 10.67 | 8.52 | 11.67 | 11.31 | 11.75 | 9.45 | 13.71 | 12.18 |
| 2007 | 11,001 | 10.29 | 8.57 | 11.36 | 11.28 | 10.10 | 8.92 | 11.66 | 11.19 |
| 2008 | 11,057 | 10.41 | 8.67 | 11.25 | 10.77 | 10.85 | 10.28 | 13.39 | 22.68 |
| 2009 | 11,067 | 10.87 | 10.00 | 11.85 | 13.18 | 9.88 | 9.40 | 11.62 | 16.64 |
| 2010 | 11,051 | 10.06 | 10.05 | 11.09 | 13.46 | 9.09 | 9.04 | 11.02 | 17.64 |
| 2011 | 11,125 | 10.11 | 10.20 | 11.55 | 14.80 | 9.66 | 9.96 | 12.01 | 20.77 |
| 2012 | 11,557 | 10.06 | 9.61 | 10.88 | 10.68 | 8.27 | 7.41 | 9.05 | 8.11 |
| 2013 | 11,557 | 9.24 | 9.30 | 10.01 | 10.30 | 7.29 | 7.11 | 8.02 | 7.83 |
| 2014 | 11,557 | 8.48 | 9.10 | 9.19 | 10.02 | 6.60 | 6.81 | 7.29 | 7.55 |
| 2015 | 11,557 | 7.67 | 9.05 | 8.41 | 9.87 | 5.86 | 6.67 | 6.56 | 7.36 |
| 2016 | 11,557 | 7.39 | 8.98 | 8.12 | 9.78 | 5.52 | 6.30 | 6.08 | 6.64 |
| 2017 | 11,557 | 7.30 | 8.94 | 8.01 | 9.73 | 5.30 | 5.89 | 5.82 | 6.18 |
| 2018 | 11,557 | 7.28 | 8.92 | 7.98 | 9.71 | 5.14 | 5.54 | 5.65 | 5.85 |
| 2019 | 11,557 | 7.27 | 8.91 | 7.98 | 9.70 | 5.05 | 5.36 | 5.56 | 5.68 |
| 2020 | 11,557 | 7.20 | 8.59 | 7.90 | 9.40 | 4.97 | 4.77 | 5.48 | 5.14 |

Note: Table presents main summary statistics of the Russian tariffs computed for products at ten-digit level of the Russian tariff classification. An ad valorem rate ignores the specific component of the tariff. An applied MFN rate includes both ad valorem and specific components of the tariff. Specific component of the tariff is translated into the ad valorem equivalent according to the formula that is explained in the methodology section and using import statistics of Russia in 2006-2010. For 2011-2020, the ad valorem equivalent is computed using import data of 2009-2011. Weighted averages are computed using weights computed as the share of the product line h in the total import at time t .

Table A2. Calculation of the Russian Simple Average Tariff on Matched Tariff Lines only in 2011-2020.

| | Number of matched tariff lines | un-weighted average tariff | standard deviation |
|------|--------------------------------|----------------------------|--------------------|
| 2011 | 10,493 | 10.5 | 12.8 |
| 2012 | 11,210 | 10.6 | 10.3 |
| 2013 | 11,210 | 9.7 | 9.9 |
| 2014 | 11,210 | 8.9 | 9.6 |
| 2015 | 11,210 | 8.1 | 9.5 |
| 2016 | 11,210 | 7.9 | 9.4 |
| 2017 | 11,210 | 7.8 | 9.3 |
| 2018 | 11,210 | 7.7 | 9.3 |
| 2019 | 11,210 | 7.7 | 9.3 |
| 2020 | 11,210 | 7.6 | 9.0 |

Source: Authors' estimates

Note: Comparison with table 1 shows that for 2012-2020, the simple average calculated on matched tariff lines only is about 0.3 percentage points lower than the simple average calculated on the full set of tariff lines.