

Tariff Pass-through of the World-wide Trade: Empirical Evidence at Tariff-line Level

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Abstract: This paper provides the first empirical evidence on the tariff pass-through of the world-wide trade. Specifically, we estimate the effects of tariff reduction on import prices for our tariff line-level data in 46 import countries in 2007-2011. The estimation results show that the average pass-through rate for tariff reduction by regional trade agreements (RTAs) is higher than that for reduction of most favoured nation rates. Namely, most part of tariff rents goes to importers in the case of multilateral trade liberalization and to exporters in the case of trade liberalization by RTAs. We also find that the product differentiation has an impact of substantial magnitude on the tariff pass-through in RTAs. The difference in income level of country pairs affects much the tariff pass-through in RTAs. The bargaining on prices between importer and exporter might explain these results because the use of RTAs requires exporters to incur some costs for certifying products' origin.

Keywords: Tariff pass-through; RTAs; Import prices; Tariff-line level

JEL Classification: F15; F53

1. Introduction

The impact of tariff reduction or elimination on trade prices has long been studied in the international economics literature. Such impact is called “tariff pass-through”, or in plain words, “who captures the tariff rent”. When negotiating trade liberalization, exporter countries expect not only to increase its export volumes but also to achieve

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higher sales prices. The underlying idea of the tariff pass-through comes from a “terms of trade” argument, which has been argued since the early 20th century in the trade literature either in large country model (Taussig, 1927) or in imperfect competition abroad (Brander and Spencer, 1984). A relatively large importer country vis-à-vis its partner country (exporter) can raise its welfare by setting a positive tariff because the importer country generally has a relatively elastic demand while the exporter country’s supply curve is relatively inelastic. When the large country imposes a 10 percent tariff, the small country reduces its before-tariff (tariff-exclusive) export price or “absorb” some part of the tariff in order to maintain its demand in the importer country. In particular, the tariffs which maximize the importer country welfare are called “optimal tariff”.

The degree of tariff pass-through might be different between multilateral trade liberalization and unilateral/regional trade liberalization. Despite the terms of trade or optimal tariff argument in 1950s-60s, the world economy has been heading for free trade through multilateral agreements in the GATT and the WTO and also through regional trade agreements (RTAs). Given this general trend of tariff reduction or elimination, trade economists’ attention has turned to the tariff pass-through in terms of tariff rent gain between exporters and importers. When importing under preference schemes, i.e., unilateral/regional trade agreement schemes, exporters need to comply with the rules of origin (RoOs). Compliance of RoOs requires exporters to incur costs for collecting several kinds of documents including a list of inputs, production flow chart, production instructions, invoices for each input, contract documents, and so on. Namely, exporters bear some amount of costs for exporting under FTA schemes. To compensate such costs, importers may allow exporters to raise export prices. As a result, exporters may obtain a higher tariff rent share.

There have been important contributions of empirical studies. An early pioneering empirical work on the issue is Feenstra (1989), which posits a hypothesis on the symmetric pass-through in multilateral trade liberalization and exchange rates, in the long-run. Cadot et al. (2005) analyses the tariff pass-through effects of North American Free Trade Agreement (NAFTA) of the U.S. textiles exports to Mexico and Mexican apparel exports to the US. Tariff pass-through in unilateral trade liberalization was studied by Olarreaga and Ozden (2005), Ozden and Sharma (2006), and Cirera (2014) among others. These studies examine the tariff pass-through in the African Growth and Opportunity Act (AGOA) by U.S., Caribbean Basin Initiative (CBI) by U.S., and the generalized scheme of preferences by European Union, respectively. These studies have consistently found an incomplete tariff pass-through in multilateral, unilateral, or

regional trade liberalization.

Although these existing studies focus only on a particular country, a particular product such as textiles and apparel, and particular programs such as AGOA or CBI, the effects of tariff reduction by RTAs will differ by country pairs and products. As mentioned above, RoO compliance costs borne by exporters create the room for price bargaining between importer and exporter. Then, exporters will have the larger bargaining powers when exporting differentiated products. The same will be true when high income countries export to low income countries. As a result, the degree of tariff pass-through will differ by these elements. Thus, in order to obtain the estimates of tariff pass-through in general, it is important to examine tariff pass-through for more countries and products.

This paper attempts to obtain the first evidence on the average tariff pass-through of the world trade. Our identification strategy on tariff pass-through in RTAs is different from that in some previous studies. While the previous studies compare the difference between import prices under RTA schemes and those under most favored nation (MFN) schemes in the same product, we compare the difference in tariff pass-through between products eligible and ineligible to RTAs. Those products whose RTA tariff is less than MFN tariff are defined as “eligible” products, otherwise “ineligible” products. We take this strategy, contrary to the previous studies, because the trade data by each tariff schemes (e.g., the US imports of a shirt from Mexico under NAFTA, from Chile under US-Chile FTA, etc.) are hardly available for many importing (reporting) countries. Admittedly a drawback of this strategy is that due to the existence of RoO compliance costs, some imports are usually conducted under MFN schemes even if imported products are eligible to RTA schemes.¹ Thus, the tariff pass-through in products eligible to RTAs is not exactly consistent with the tariff pass-through based on the use of RTA schemes. Specifically, we employ tariff line-level data on import prices and tariffs, which enables us to exactly identify RTA eligibility at a tariff line-level. The dataset includes the tariff line-level import prices between 46 import countries and 174 export countries during 2007 to 2011. With this dataset, we estimate the tariff pass-through in MFN rates and RTA preferential rates and examine how it differs by product characteristics and countries.

The rest of this paper is organized as follows. The next section introduces our detailed trade data and the estimation specification. Section 3 presents the estimation results. Section 4 concludes.

¹ Indeed, the share of imports under RTA schemes is less than one hundred percent in almost all cases. For example, see Keck and Lendle (2012).

2. Data and Methodology

This section explains our dataset of the import data at each country's tariff-line level and tariff data. Then, we specify the equations for estimation. Some countries, especially developed countries, make their tariff-line level trade data readily available mostly on the government web-sites. But many countries do not. We draw tariff-line level import data of 46 countries from the database of WTA (World Trade Atlas). The 46 importing countries are chosen according to the data accessibility. As explained below, we also match tariff data with these import data. Thus, we drop from the analyses those countries for which tariff data are not available. Although the import data cover all the partner (i.e., exporter) countries, we drop the exporter countries for which other variables used in our estimation work are not available. As a result, 174 exporting countries remain for analyses. For the sake of maintaining consistency of HS code system over the sample years to construct a panel dataset, 2007-2011 (i.e., HS2007) are taken as the sample. Furthermore, if a country switches the HS code version in its record in the middle of the sample years, we drop inconsistent import country-year pairs.² Therefore the number of the sample years differs across importing countries (see Appendix).

We combine the tariff data with the above-mentioned import data at tariff-line levels. The detailed tariff data are from the database by the World Integrated Trade Solution (WITS). The database provides information on various kinds of tariff schemes, such as MFN, RTA, or the generalized system of preferences (GSP). In this paper, we only use tariff rates of RTA and MFN. In fact, it is technically difficult to identify products eligible to GSP since such products differ by beneficiaries (i.e., product graduation). We integrate preferential rates in only RTAs that are included in the Regional Trade Agreements Information System (RTA-IS) in the website of the World Trade Organization. When combining the data on trade and tariffs, we aggregate the number of digits in tariff data in case the tariff data have higher numbers of digits than the trade data. The lowest tariff rates within the category in this aggregation are taken.

Using the tariff-line level trade data, we estimate the following equations. Similar to the previous literature, especially Ozden and Sharma (2005), our first estimation equation at the tariff-line level is given by

² The Philippines and Venezuela report both import and tariff data in the version of HS2002 during 2007-2011. Since we can still construct the panel data in such cases, we keep the Philippines and Venezuela in our samples.

$$\ln Price_{ijpt} = \beta_1 \ln(1 + MFN_{ijpt}) + \beta_2 \ln ExGDPcapita_{jt} + \beta_3 \ln ImGDP_{it} + \beta_4 \ln Exchange_{ijt} + u_{ijp} + u_t + \varepsilon_{ijpt}$$

$Price_{ijpt}$ represents before-tariff (tariff exclusive) import price of country i from country j in tariff-line product p at year t . It is computed by dividing imports by import quantities. MFN_{ijpt} is MFN rates of country i for tariff-line product p imported from country j at year t . $ExGDPcapita_{jt}$ is exporter j 's (real) GDP per capita at year t . GDP per capita is used for a proxy of wages, i.e., production factor prices, of exporter country j . $ImGDP_{it}$ is importer i 's (real) GDP at year t , which is expected to control for the demand sizes in import country i . $Exchange_{ijt}$ is (real) exchange rates of exporter j 's currency against importer i 's currency in year t . u_{ijp} and u_t are country pair-product fixed effects and year fixed effects, respectively. ε is the disturbance term.

There are several noteworthy points. First, the coefficient for MFN rates indicates the degree of tariff pass-through in multilateral trade liberalization. Also, exchange rate pass-through will be related to the coefficient for exchange rates. Second, in order to control for demand sizes at a more detailed level, we also include total import value of importer country i of product p in year t (Total Import) instead of importer GDP. Third, since the commodity code at a tariff-line level is different across import countries, it is technically impossible to include tariff-line product fixed effects, i.e., u_p . In order to control for product fixed effects, it is thus necessary at least to introduce tariff-line product-importer fixed effects, i.e., u_{ip} . Instead of them, we introduce finer fixed effects, i.e., country pair-product fixed effects. Fourth, we drop the import transactions that exist for only one year since we need price changes over time.³ Last, we employ the data on import quantities evaluated with the same unit during our sample period.⁴

Next, we take RTA preferential rates into account in the tariff pass-through. To do that, we first introduce whichever lower tariff rates between MFN and preferential tariff rates (i.e., *applied* tariff rates), denoted as $Tariff_{ijpt}$ in the equation below (2), instead of MFN rates. The above equation is modified as follows.

$$\ln Price_{ijpt} = \beta_{11} \ln(1 + Tariff_{ijpt}) + \beta_{12} \ln ExGDPcapita_{jt} + \beta_{13} \ln ImGDP_{it} + \beta_{14} \ln Exchange_{ijt} + u_{ijp} + u_t + \varepsilon_{ijpt}$$

As a result, the coefficient for Tariff indicates the pass-through of applied tariff rates.

Second, in order to explicitly examine the difference in tariff pass-through between MFN rates and RTA rates, we generate a variable *Eligible*, which takes the

³ As a result, around two million of observations are dropped.

⁴ Another issue may be the sample selection. Namely, since we can observe the data on import prices only when the concerned products are imported, our estimates may suffer from sample selection biases. The use of Heckman two-step estimation technique is one candidate to address this issue. However, our dataset is a world-wide tariff line-level data and thus potentially includes approximately 360 million of observations. The estimation of non-linear models including the Heckman model with a larger number of dummy variables for such a number of observations is beyond the capacity of our computers.

value of one if RTA rates are lower than MFN rates, and zero otherwise. We add an interaction term of *Tariff* with *Eligible* to equation (2).

$$\ln Price_{tjpt} = \beta_1 \ln(1 + Tariff_{tjpt}) + \beta_2 \ln(1 + Tariff_{tjpt}) \cdot Eligible_{tjpt} + \beta_3 \ln ExGDPcapita_{jt} + \beta_4 \ln$$

Coefficient β_1 indicates the pass-through in MFN rates while the sum of that and coefficient β_2 shows the pass-through in RTA preferential rates.⁵ More specifically, it captures the effects of tariff reduction through the change from ineligible to eligible status or through the reduction of RTA preferential rates (in addition, those through the change from eligible to ineligible status).

Third, in order to shed more light on the magnitude of preference margin (i.e., the difference between RTA rates and MFN rates), we introduce this magnitude (*Margin*) to equation (1).

$$\ln Price_{tjpt} = \beta_1 \ln(1 + MFN_{tjpt}) + \beta_2 Margin_{tjpt} + \beta_3 \ln ExGDPcapita_{jt} + \beta_4 \ln ImGDP_{it} + \beta_5 \ln Exch$$

In this variable, the value one indicates the preference margin of one hundred percent. Again, coefficient β_1 indicates the pass-through in MFN rates. On the other hand, coefficient β_2 divided by 100 shows how many percentages the import prices change when the preference margin rises by one percent. Such rise is caused by the change from ineligible to eligible status or by the reduction of RTA preferential rates.⁶

The data sources are as follows. As mentioned in the previous subsection, those on imports and import quantities are the database of WTA while we obtain the information on RTA preferential rates and Eligible dummy variables from the databases of WITS and RTA-IS. The data on MFN rates are also from the database of WITS. The data on GDP, GDP deflator, GDP per capita and bilateral exchange rates are taken from the World Development Indicator. GDP deflator is used for deflating GDP and exchange rates.

3. Estimation Results

This section reports estimation results of the above equations. The basic statistics for these analyses are provided in Table 1. In our 16,555,308 observations of country pair-product imports in 2007 -2011, the mean of $\ln(1+MFN)$ is 0.059, namely, the simple average of MFN tariffs is 6.08% ($\exp(0.059) - 1$), though the standard deviation

⁵ As mentioned in the introductory section, all exporters do not necessarily use RTA preferential schemes even when exporting eligible products to RTA partner countries. Thus, precisely, the sum of two coefficients includes changes in import prices of products eligible for RTA but imported under MFN schemes.

⁶ Of course, the margin may be also lowered through the change from eligible to ineligible status or the reduction of MFN rates.

is large (0.080). The mean of the preference margin, i.e., Margin, is 0.028 (2.8%), and its standard deviation is 0.098.

=== Table 1 ===

Table 2 shows our benchmark results. Those for equations (1) and (2) are provided in columns (I)-(III) and columns (IV)-(VI), respectively. In columns (III) and (VI), we include total imports instead of importers' GDP. The variables of our interest in this estimation, MFN rates and applied rates show negative coefficient estimates. Namely, the reduction of MFN/applied tariff rates significantly raises the before-tariff import price. The larger coefficient in applied tariff rates, in terms of absolute magnitude, implies that such negative effects are larger in the case of applied rates. Specifically, a 10 percent-reduction of (one plus) applied tariff rates raises import prices by 2-3%.

=== Table 2 ===

All the other covariates show coefficient estimates with expected signs with high statistical significance. The coefficients for exporter's GDP per capita are positively significant, indicating that the rise of factor prices raises import prices. As implied in the coefficients for importer's GDP and total imports, the larger sizes of demand also lead to the higher import prices. The coefficients for exchange rates are estimated to be negatively significant, indicating that a 10 percent depreciation of exporter's currency against importer's currency lowers import prices (evaluated in US dollars) by 0.05-0.11 percent. This magnitude looks very small. From the quantitative viewpoint, the changes of exporter's currency against importer's currency do not affect much US dollar-evaluated import prices.

Next, the estimation results for equation (3) are reported in columns (I)-(III) in Table 3. The coefficients for both applied tariff rates and their interaction with Eligible are estimated to be negatively significant. The latter result indicates that tariff reduction by RTAs increases the before-tariff import price more greatly than the reduction of MFN rates. Specifically, while one percent reduction of (one plus) MFN rates raises import prices by 0.282%, the rise of import prices through one percent (one plus) tariff reduction by RTAs is 0.727% (= 0.282 + 0.445). Namely, multilateral trade liberalization and trade liberalization by RTAs have roughly 28% and 73% of tariff pass-through, respectively. In other words, most part of tariff rents goes to importers in

the case of multilateral trade liberalization and to exporters in the case of trade liberalization by RTAs. This result is consistent with the RoO compliance cost argument, which is mentioned in the introductory section.

=== Table 3 ===

The estimation results for equation (4) are shown in columns (IV)-(VI) in Table 3. The coefficients for MFN rates are negatively significant, indicating that the reduction of (one plus) MFN rates by one percent raises import prices by 0.06-0.10%. The significantly positive coefficient for Margin indicates that the larger preference margin leads to the higher import prices. However, its magnitude looks too small. Remember that the rise of this variable by one indicates that of preference margin by 100% point. Therefore, our estimates show that the rise of preference margin by 100% point raises import prices by 0.02-0.03%. These small estimates may indicate that the relationship between (a log of) import prices and preference margin is not simple linear.⁷

Last, we estimate two additional models to make use of our data coverage in terms of countries and products. We interact some variables with the cross-term between applied tariffs and Eligible dummy in equation (3). First, in order to investigate the differences in the impacts of tariff reduction by RTAs between differentiated and non-differentiated products, we interact an indicator variable on differentiated products. The indicator variable, which is named “Differentiated”, takes the value one for differentiated products in the “liberal” classification of products by Rauch (1999). The results are shown in columns (I)-(III) in Table 4. The interaction term of applied tariffs with Eligible dummy has negative coefficients at a 10% significance level in columns (II) and (III). Its interaction with Differentiated has significantly negative coefficients, which indicate that the impacts of tariff reduction by RTAs are larger when trading differentiated products. As mentioned in the introductory section, this larger effect in differentiated products will imply the larger bargaining power in the exporters of differentiated products.

=== Table 4 ===

Second, in order to examine the differences in the effects of tariff reduction by RTAs according to income levels of exporter and importer, we interact pair dummies of

⁷ Indeed, if we include the square and cube terms of preference margin, their coefficients are significantly estimated. The results are available upon request.

the combinations of high/low income exporter/importer. We divide our sample countries into high and low-income countries following World Bank classifications of income as of 2010.⁸ The results are reported in columns (IV)-(VI) and show that for pairs of high income export country – low income import country, the tariff reduction is fully passed on to exporter country ($-0.210-0.437-0.539$), while there is no pass through for the case of low income exporter country – high income importer country pairs ($-0.210-0.437+0.629$). As mentioned in the introductory section, these results reflect the balance of bargaining powers between exporters and importers. Namely, high income exporters obtain a high share of tariff rents while low income exporters do not.

4. Concluding Remarks

This paper provided the first empirical evidence on tariff pass-through in the world-wide trade. To this aim, we collected the trade data and tariff data at tariff-line levels for 46 import countries. The estimation results show that the tariff reduction through RTAs induces a higher tariff pass-through in the sense of higher price for exporters than through the MFN tariff reduction. Specifically, it finds that the average pass-through rate is 0.727 in RTAs and 0.282 in MFN rates. We also find that the product differentiation has an impact of substantial magnitude on the tariff pass-through in RTAs and the difference in income level of country pairs affects much the tariff pass-through in RTAs. These differences according to product characteristics and countries will explain the differences in the estimates of tariff pass-through in the previous studies.

⁸ The following countries are classified as high income countries: ABW, ADO, ANT, ARE, AUS, AUT, BEL, BHR, BHS, BMU, BRB, BRN, CAN, CHE, CHI, CYM, CYP, CZE, DEU, DNK, ESP, EST, FIN, FRA, FRO, GBR, GIB, GNQ, GRC, GRL, GUM, HKG, HRV, HUN, IMY, IRL, ISL, ISR, ITA, JPN, KOR, KWT, LIE, LUX, LVA, MAC, MCO, MLT, MNP, NCL, NLD, NOR, NZL, OMN, POL, PRI, PRT, PYF, QAT, SAU, SGP, SMR, SVK, SVN, SWE, TCA, TTO, USA, VIR.

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Appendix. Sample Countries

A1. Importers

	Tariff-line Digit	Sample Years	Tariff-line Number
Argentina	8	2007 - 2011	Approximately 11,000
Australia	8	2007 - 2011	Approximately 6,000
Austria	8	2007 - 2011	Approximately 10,000
Belgium	8	2007 - 2011	Approximately 10,000
Brazil	8	2007 - 2011	Approximately 10,000
Canada	8	2007 - 2010	Approximately 8,000
Chile	8	2007 - 2011	Approximately 9,000
China	8	2007 - 2011	Approximately 8,000
Colombia	10	2007 - 2011	Approximately 8,000
Costa Rica	10	2008 - 2010	Approximately 10,000
Czech Republic	8	2007 - 2011	Approximately 10,000
Denmark	8	2007 - 2011	Approximately 10,000
Finland	8	2007 - 2011	Approximately 10,000
France	8	2007 - 2011	Approximately 10,000
Germany	8	2007 - 2011	Approximately 10,000
Greece	8	2007 - 2011	Approximately 10,000
Hong Kong	8	2007 - 2011	Approximately 7,000
Hungary	8	2007 - 2011	Approximately 10,000
Indonesia	8	2007 - 2011	Approximately 8,000
Ireland	8	2007 - 2011	Approximately 10,000
Italy	8	2007 - 2011	Approximately 10,000
Japan	9	2007 - 2011	Approximately 9,000
Lithuania	8	2007 - 2011	Approximately 10,000
Luxembourg	8	2007 - 2011	Approximately 10,000
Mexico	8	2008 - 2010	Approximately 12,000
Netherlands	8	2007 - 2011	Approximately 10,000
New Zealand	8	2007 - 2010	Approximately 7,000
Norway	8	2007 - 2011	Approximately 7,000
Panama	8	2007 - 2008	Approximately 9,000
Peru	10	2007 - 2011	Approximately 8,000
Philippines	8	2007 - 2010	Approximately 12,000
Poland	8	2007 - 2011	Approximately 10,000
Portugal	8	2007 - 2011	Approximately 10,000
Romania	8	2007 - 2011	Approximately 10,000
Russian Federation	8	2007 - 2011	Approximately 10,000
Singapore	8	2007 - 2010	Approximately 12,000
Slovakia	8	2007 - 2011	Approximately 10,000
Slovenia	8	2007 - 2011	Approximately 10,000
South Africa	8	2007 - 2011	Approximately 7,000
Spain	8	2007 - 2011	Approximately 10,000
Sweden	8	2007 - 2011	Approximately 10,000
Thailand	8	2007 - 2011	Approximately 8,000
Turkey	8	2007 - 2011	Approximately 10,000
United Kingdom	8	2007 - 2011	Approximately 10,000
USA	8	2007 - 2011	Approximately 10,000
Venezuela	10	2007 - 2011	Approximately 7,000

A2. Exporters (174)

Afghanistan; Albania; Algeria; Angola; Antigua and Barbuda; Argentina; Armenia;

Aruba; Australia; Austria; Azerbaijan; Bahamas; Bahrain; Bangladesh; Barbados; Belarus; Belgium; Belize; Benin; Bermuda; Bhutan; Bolivia; Bosnia and Herzegovina; Botswana; Brazil; Brunei Darussalam; Bulgaria; Burkina Faso; Burundi; Cambodia; Cameroon; Canada; Central African Republic; Chad; Chile; China; Colombia; Comoros; Congo; Congo (Democratic Republic of the); Costa Rica; Croatia; Cuba; Cyprus; Czech Republic; Cote d'Ivoire; Denmark; Djibouti; Dominica; Dominican Republic; East Timor; Ecuador; Egypt; El Salvador; Eritrea; Estonia; Ethiopia; Fiji; Finland; France; Gabon; Gambia; Georgia; Germany; Ghana; Greece; Greenland; Guatemala; Guinea; Guinea-Bissau; Guyana; Haiti; Honduras; Hong Kong; Hungary; Iceland; India; Indonesia; Iran; Iraq; Ireland; Israel; Italy; Jamaica; Japan; Jordan; Kazakhstan; Kenya; Kiribati; Korea; Kuwait; Kyrgyzstan; Lao People's Democratic Republic; Latvia; Lebanon; Lesotho; Liberia; Libyan Arab Jamahiriya; Lithuania; Luxembourg; Macau; Macedonia (the former Yugoslav Rep. of); Madagascar; Malawi; Malaysia; Maldives; Mali; Malta; Mauritania; Mauritius; Mexico; Moldova, Rep. of; Mongolia; Morocco; Mozambique; Namibia; Nepal; Netherlands; New Zealand; Nicaragua; Niger; Nigeria; Norway; Oman; Pakistan; Panama; Papua New Guinea; Paraguay; Peru; Philippines; Poland; Portugal; Qatar; Romania; Russian Federation; Rwanda; Sao Tome and Principe; Saudi Arabia; Senegal; Singapore; Slovakia; Slovenia; South Africa; Spain; Sri Lanka; Sudan; Suriname; Swaziland; Sweden; Switzerland; Syrian Arab Republic; Taiwan; Tajikistan; Tanzania, United Rep. of; Thailand; Togo; Tonga; Trinidad and Tobago; Tunisia; Turkey; Turkmenistan; Tuvalu; Uganda; Ukraine; United Arab Emirates; United Kingdom; USA; Uruguay; Vanuatu; Venezuela; Viet Nam; Yemen; Zambia; Zimbabwe

Table 1. Basic Statistics

	Obs	Mean	Std. Dev.	Min	Max
ln Prices	16,555,308	5.917	3.701	-12.9906	23.2276
ln (1+MFN)	16,555,308	0.059	0.080	0	4.6030
ln (1+Tariff)	16,555,308	0.033	0.065	0	4.6030
* Eligible	16,555,308	0.001	0.014	0	3.2256
* Eligible * Differentiated	16,555,308	0.001	0.011	0	1.2413
* Eligible * High Exporter-High Importer	16,555,308	0.0001	0.006	0	3.2256
* Eligible * High Exporter-Low Importer	16,555,308	0.0006	0.009	0	0.8671
* Eligible * Low Exporter- High Importer	16,555,308	0.0001	0.004	0	3.2256
Margin	16,555,308	0.028	0.098	0	98.7868
ln Ex GDP per capita	16,555,308	13.319	1.201	8.1186	15.1284
ln Im GDP	16,555,308	30.649	1.390	27.2501	33.8467
ln Total Imports	16,555,308	15.847	2.300	-2.8134	26.0258
ln Exchange	16,555,308	0.043	3.029	-10.4934	23.2376

Source: Authors' computation

Table 2. Baseline Results

	(I)	(II)	(III)	(IV)	(V)	(VI)
ln (1+MFN)	-0.066*** [0.011]	-0.035*** [0.011]	-0.042*** [0.011]			
ln (1+Tariff)				-0.326*** [0.016]	-0.208*** [0.015]	-0.249*** [0.016]
ln Ex GDP per capita		0.216*** [0.003]	0.228*** [0.003]		0.215*** [0.003]	0.227*** [0.003]
ln Im GDP		0.162*** [0.003]			0.160*** [0.003]	
ln Total Imports			0.035*** [0.001]			0.034*** [0.001]
ln Exchange		-0.011*** [0.001]	-0.005*** [0.001]		-0.011*** [0.001]	-0.005*** [0.001]
Number of observations	16,555,308	16,555,308	16,555,308	16,555,308	16,555,308	16,555,308
Adj. R-squared	0.9531	0.9531	0.9532	0.9531	0.9532	0.9532

Notes: The dependent variable is a log of import prices.***, **, and * indicate 1%, 5%, and 10% significance, respectively. In the parenthesis is the robust standard error. In all specifications, we include country pair-tariff line and year dummy variables.

Table 3. MFN Rates versus RTA Preferential Rates

	(I)	(II)	(III)	(IV)	(V)	(VI)
ln (1+Tariff)	-0.282*** [0.016]	-0.174*** [0.016]	-0.210*** [0.016]			
* Eligible	-0.445*** [0.051]	-0.346*** [0.046]	-0.386*** [0.048]			
ln (1+MFN)				-0.097*** [0.014]	-0.057*** [0.013]	-0.067*** [0.013]
Margin				0.029*** [0.009]	0.019*** [0.006]	0.023*** [0.007]
ln Ex GDP per capita		0.215*** [0.003]	0.226*** [0.003]		0.216*** [0.003]	0.228*** [0.003]
ln Im GDP		0.160*** [0.003]			0.162*** [0.003]	
ln Total Imports			0.034*** [0.001]			0.035*** [0.001]
ln Exchange		-0.011*** [0.001]	-0.005*** [0.001]		-0.011*** [0.001]	-0.005*** [0.001]
Number of observations	16,555,308	16,555,308	16,555,308	16,555,308	16,555,308	16,555,308
Adj. R-squared	0.9531	0.9532	0.9532	0.9531	0.9531	0.9532

Notes: The dependent variable is a log of import prices.***, **, and * indicate 1%, 5%, and 10% significance, respectively. In the parenthesis is the robust standard error. In all specifications, we include country pair-tariff line and year dummy variables.

Table 4. Differentiated Products and Income Level

	(I)	(II)	(III)	(IV)	(V)	(VI)
ln (1+Tariff)	-0.285*** [0.016]	-0.177*** [0.016]	-0.213*** [0.016]	-0.281*** [0.016]	-0.174*** [0.016]	-0.210*** [0.016]
* Eligible	-0.102 [0.065]	-0.096* [0.057]	-0.098* [0.059]	-0.573*** [0.063]	-0.381*** [0.063]	-0.437*** [0.063]
* Eligible * Differentiated	-0.587*** [0.087]	-0.428*** [0.081]	-0.494*** [0.083]			
* Eligible * High Exporter-High Importer				0.717*** [0.094]	0.445*** [0.090]	0.519*** [0.092]
* Eligible * High Exporter-Low Importer				-0.478*** [0.120]	-0.499*** [0.119]	-0.539*** [0.119]
* Eligible * Low Exporter- High Importer				0.839*** [0.081]	0.534*** [0.080]	0.629*** [0.080]
ln Ex GDP per capita		0.215*** [0.003]	0.226*** [0.003]		0.214*** [0.003]	0.226*** [0.003]
ln Im GDP		0.159*** [0.003]			0.159*** [0.003]	
ln Total Imports			0.034*** [0.001]			0.034*** [0.001]
ln Exchange		-0.011*** [0.001]	-0.005*** [0.001]		-0.011*** [0.001]	-0.005*** [0.001]
Number of observations	16,555,308	16,555,308	16,555,308	16,555,308	16,555,308	16,555,308
Adj. R-squared	0.9531	0.9532	0.9532	0.9531	0.9532	0.9532

Notes: The dependent variable is a log of import prices. ***, **, and * indicate 1%, 5%, and 10% significance, respectively. In the parenthesis is the robust standard error. In all specifications, we include country pair-tariff line and year dummy variables.