

# INSULIN TARIFFS AND TAXES PROFILE

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## Acronyms

ACCISS	Addressing the Challenge and Constraints of Insulin Sources and Supply
API	Active Pharmaceutical Ingredients
EU	European Union
FTA	Free Trade Agreements
GDP	Gross Domestic Product
HS	Harmonized System
MFN	Most-Favoured-Nation
PRONADIA	Argentina's National Programme for the Prevention and Control of Diabetes
REMEDIAR	Argentina's Programme for the Free Provision of Drugs at National Level
TRAINS	Trade Analysis and Information System
UN	United Nations
UN COMTRADE	UN Statistical Division Commodity Trade
UNCTAD	United Nations Conference on Trade and Development
US	United States
VAT	Value Added Tax
WITS	UNCTAD World Integrated Trade Solution
WTO	World Trade Organization

## Executive Summary

This profile is a review of import tariffs and taxes on insulin charged by countries and the effects access to insulin. This is important because insulin is an essential medicine that is needed for type 1 and type 2 diabetes. For type 1 diabetes insulin is the only pharmacotherapeutic option currently available. For type 2 diabetes, other treatments can also be offered. However, with the progression of the disease, many people will eventually be treated with insulin.

Access to insulin and devices is particularly poor in many low- and middle-income countries. In high-income countries such as the United States (US), patients without health insurance or with high co-payments for insulin therapy are also unable to afford insulin. Our research is based on a literature review and a review of the available databases from the United Nations (UN) statistical division and the World Bank.

The major findings are as follows:

The global weighted average import tariff on insulin for retail sale has dropped from less than 3.5 percent in 2004 to 1.9 percent in 2013. Most countries have little or no tariffs on imported retail grade insulin. Governments in South and Central America have high import tariffs on insulin.

The global weighted average import tariff for insulin not yet formulated into its final retail packaging (called bulk insulin) has dropped since 2004. It is fluctuating but remains at about two percent. As of 2012 and 2013, the only countries contributing to the highest tariffs for bulk insulin are in Africa (Ghana and Sudan). Within these two countries, we are virtually certain that insulin is not being produced, so there is no obvious local industry protectionist value for these high tariffs.

With regard to finished medical products, in 2013, eight countries showed the highest tariffs, five being small, probably tax haven economies from the Caribbean (Anguilla, Antigua and Barbuda, Monserrat, and Bermuda) and the remaining being Pakistan, Nepal, India, and the Russian Federation. In those countries where we recorded both bulk and retail tariffs on insulin, it is clear that only a few countries (Chile, Ghana, South Korea, Myanmar, Serbia, and Yemen) generate any revenue at all and almost all of the revenue generated comes from imports of retail grade insulin. In fact, for these countries in 2013, the revenue generated from imports tariff on retail and bulk insulin represents between 0.3 and 0.5 percent of the total import value of retail and bulk insulin, respectively.

The value added tax (VAT) on medical products generally (which we assume include insulin) ranged from about zero to 24 percent on all or some medicines with no relationship to country income.

We suggest that eliminating import tariffs on insulin is one activity in a comprehensive policy reform of the pharmaceutical value chain that will improve access. The achievement of tariff reductions for pharmaceutical products is likely to have lost some of its initial relevance in recent years. As the average applied tariff on pharmaceutical products across countries in 2013 was already less than three percent, there may not be much additional ability for countries to exchange preferential tariff concessions in trade agreements. Nonetheless, some countries have import tariffs on insulin that are 10 percent or more.

# 1. Introduction

## 1.1 The ACCISS Study

Today, approximately 100 million people around the world need insulin, including all people living with type 1 diabetes and between 10-25 percent of people with type 2 diabetes. Although insulin has been used in the treatment of diabetes for over 90 years, globally more than half of those who need insulin today still cannot afford and/or access it. Without insulin, people living with type 1 diabetes will die. Many more will suffer from diabetes-related complications, like blindness, amputation and kidney failure, and, ultimately, premature death.

There are many complex issues that affect access to this life-saving medicine, creating inequity and inefficiency in the global insulin market. These issues include the global insulin market domination by three multinational manufacturers, import duties affecting the price insulin entering different countries, and mark-ups, taxes and other charges in the public and private sector supply chains that affect the final patient price.

The innovative global study, Addressing the Challenge and Constraints of Insulin Sources and Supply (ACCISS), sets out to identify the causes of poor availability and high insulin prices and develop policies and interventions to improve access to this essential medicine, particularly in the world's most under-served regions. The three-year study involves a unique group of leading international experts as members of the study's advisory and technical groups. ACCISS is co-led by Margaret Ewen at Health Action International, David Beran from Geneva University Hospitals and the University of Geneva, and Richard Laing from Boston University School of Public Health.

The study will be carried out in three phases. The first phase was mapping the global insulin market from various angles including trade issues, patents on insulin, market issues (including which pharmaceutical companies manufacture and distribute insulin) prices, trade issues, tariffs and taxes on insulin, and current initiatives to improve access to insulin. This Insulin Tariffs and Taxes Profile is a result of the mapping work completed in phase one, and is one of several profiles on the global insulin market to be published. All profiles can be accessed on the ACCISS Study section of HAI's website:

<http://haiweb.org/what-we-do/acciss/>

## 1.2 The Insulin Tariffs and Taxes Profile

Work by the International Insulin Foundation (IIF) in various countries found a variety of barriers to insulin access, one of which was its overall price in comparison to other medicines. In addition in some countries insulin was only present at 20 percent of the facilities where it should have been; therefore, availability is also problematic. The factors causing this situation are present both at international and national levels and cannot be addressed in isolation. It is important to understand the wider issues surrounding access to insulin and the path of medicines from production to administration. (1-3)

This profile looks at the trade issues that create barriers to insulin products for those in need. To create this profile on tariffs and taxes data from available databases was collected as well as other information on the imports and exports of insulin in all countries.

Domestic taxes can comprise a substantial proportion of the price people pay for medicines, and high prices are generally considered to be a principal barrier to access. When considering the effect of medicine taxes on national revenues, official breakdowns of revenue by type of commodity are not

routinely available. Though the percentage of public revenue raised from medicine taxes may appear small at around one percent of total revenue, the amount is significant enough for national treasuries to be resistant to special pleading from health lobbyists for preferential tax treatment for medicines. Nevertheless, some countries at both high- and low-income levels do manage to exempt some or all medicines from taxation. Therefore, also included is a summary of available information on VAT for medicines. A VAT is defined as a tax placed on a product whenever value is added at a stage of production and at final sale. From the perspective of the buyer, it is a tax on the purchase price.

### **1.3 Tariffs and Tariff Regulations**

Tariffs, or customs duties on imported goods, are a traditional trade policy instrument and are preferred under World Trade Organization (WTO) rules to quantitative restrictions, such as quotas. Tariffs are relatively transparent and, unlike quotas, do not impose rigid restrictions on volumes of imports.<sup>(4)</sup> Import quotas can in principle cause serious corruption problems in certain countries, as the importers chosen to meet the quota can often provide the most favors to customs officers.

WTO members have agreed to certain maximum levels for their respective tariffs on all or most imported products, including pharmaceuticals. These maximum levels are called “tariff bindings” and vary according to each country and product. Successive rounds of trade negotiations have also led to lower bound tariff rates and, in fact, WTO members frequently apply tariffs below the bound rate. <sup>(4)</sup> Many countries apply tariffs to bolster the competitive position of locally based companies in the domestic market in an attempt to preserve employment, promote local production capacities of the pharmaceutical sector and/or to (maintain a certain level of independence from international markets. Most low- and middle-income countries are net importers of pharmaceutical products and many impose tariffs on finished drugs, PRONADIA (APIs), and excipients (inactive substances that contain active ingredients).<sup>(5)</sup>

Tariffs also are intended to raise revenue for governments.<sup>(5)</sup> Government revenue generation is often quoted as being one of the two main explanations for tariffs on pharmaceutical products. For example, if the US government puts a 20 percent tariff on imported Indian cricket bats they will collect \$10 million dollars if \$50 million worth of Indian cricket bats are imported in a year. Added up, this can generate a lot of revenue for a government – in 2011 alone, the US government collected \$28.6 billion in tariff revenue.<sup>(6)</sup>

Although some countries, such as China, India, and Brazil, have established pharmaceutical industries, they continue to import some products. Often countries impose tariffs to protect local industry, raise revenue, or retaliate against trade rule violations by another country. However, the global trend has been to reduce or eliminate tariffs.<sup>(7)</sup> The goal of lower tariffs is to stimulate trade, competition, and price reductions. A number of WTO members, mainly upper income countries, concluded the Pharmaceutical Tariff Elimination Agreement in 1994. <sup>(8)</sup> Under this agreement, the parties to the agreement eliminated tariffs on all finished pharmaceutical products as well as on designated active ingredients and manufacturing inputs. Since 1994, the parties have periodically updated the agreement’s coverage.

Tariffs contribute to pharmaceutical costs by increasing the final price of essential drugs, which can limit access for those who can least afford them.<sup>(5)</sup> Some local industries may see a lowering of tariffs as non-beneficial, as lower tariffs force them to compete with foreign producers who may offer better quality or lower priced goods. From the health sector perspective, minimising tariffs may increase purchasing power for the public and private sectors, so long as sales tax and other drug price components are controlled. Optimally, this will lead to greater availability of essential medicines in the health system.



## **2. Brief Literature Review: Tariffs and Pharmaceuticals**

In 2005, a literature review concluded that there has been little research on tariffs implemented on pharmaceutical products and their relative importance in terms of the hidden costs of pharmaceutical products and the direct impact on access to medicines. (5) Bale looked at tariffs as one of the barriers to access to essential medicines and concluded that barriers to access are largely due to: "financing, infrastructure, lack of political will, corruption and counterfeiting." (9) Woodward considered how import tariffs and other trade barriers determine the price of essential health sector inputs, both pharmaceutical and non-pharmaceutical, necessary for prevention and treatment objectives. (10)

In general, tariffs increase the prices of imported goods directly, by levying a tax on them. At the same time however, there are costs associated with the lowering of trade barriers. In particular, the reduced tariff protection worsens the financial position of domestic producers, potentially causing loss of employment and income, and lower receipts from tariffs reduce overall government revenues. Levison and Laing investigated the hidden costs inherent to the procurement process that diminish purchasing power, looking at tariffs as just one of the components. The data was collected and presented from ten countries. Protectionist strategies for local manufacturers is reflected in the fact that Nigeria, Pakistan, India and China, which all have local pharmaceutical industries, are included in the group of countries with the highest import duties on finished products. Some countries also do not levy tariffs for certain drugs or for certain institutions. (11)

Between 2001 and 2003, the European Commission carried out a study to assess the duties and taxes applied to pharmaceutical products used in the treatment of major communicable diseases. The findings highlighted the large disparities in custom duties between countries, but also that in general few developing countries applied peak tariffs and that the least developed countries had the lowest rates of duties and taxes. (12)

Bate et al. in 2004 reviewed the effect of tariffs, taxes, and regulatory requirements on access to medicines, specifically looking at import tariffs for active ingredients on the WHO Essential Medicines List and finished pharmaceuticals. (13) They found that Iran had very high tariffs and taxes of over 50 percent for active ingredients (without specifying which ingredients). For the same ingredients, the Democratic Republic of Congo's tariff rate was over 18.5. Although the present report does not analyse sales tax and VAT we note that Bate et al. found that many states in India continue to charge VAT as well as the sales taxes which "could increase the cost of medicines by as much as 20 percent." (13) Many countries (US, members of the EU, Canada, Switzerland, Japan, Norway, Czech Republic, Slovakia, Macau in China) have zero percent tariffs as part of the Pharmaceutical Agreement of the WTO Uruguay Round of TRIPS. Over 50 percent of the countries surveyed maintained tariffs between of five percent or more.

In 2008, Volman determined which low- and middle-income countries charged import tariffs on insulin. (14) The primary message of this document was that the majority of countries, where data was available, did not charge tariffs on insulin products. Critically, the reasons for tariffs charged in the remaining countries were not clear, particularly as insulin is manufactured in very few countries, and tariffs are unlikely to be used to protect a local industry. (14) In 2012 Helbe reviewed the latest tariff information and found that the market of health products is dominated by a small number of countries in which the overall level of tariffs is low, but far from zero, especially in the low- and middle-income countries. (15)

## 2.1 A Note on Tariff Classification of Finished Products and Active Ingredients

Pharmaceutical products that are used for medical purposes to diagnose, treat or prevent diseases are classified according to their chemical structure and the way they are made up (for example in measured doses such as tablets or ampoules and whether or not they are intended for retail sale). It is important for classification purposes to identify whether or not a product contains an active ingredient or substance. An active pharmaceutical ingredient is a substance or compound that is intended to be used in the manufacture of a pharmaceutical product. It is either a chemically defined substance, a chemically defined group of substances (such as alkaloids, polyphenols or anthocyanins) or a plant extract. Active substances must have medicinal properties to prevent or treat specific diseases and ailments, or their symptoms. Insulin is an active ingredient. It becomes a finished product when placed in containers such as a vial. For pharmaceuticals, there are clear tariff classifications for active pharmaceutical ingredients and finished products. Specifically for insulin, tariff distinctions will likely be based on whether or not the insulin is “bulk” insulin or whether it is a finished product put into “measured doses or for retail sale”.

## 2.2 A Note on Taxes

There are two main categories of tax: direct tax, levied by governments on the income of individuals and corporations, and indirect taxes, added to the prices of goods and services and collected through the businesses that provide them. (16) In low-income countries, indirect taxes, principally on international trade or on the purchase of goods and services, are major sources of government revenue. Indirect taxes, such as taxes on medicines are charged on what people buy rather than falling directly on an individual's earnings. These indirect taxes such as VAT are regressive; in that they impact the economically disadvantaged more than the economically advantaged.

One way around the repressiveness of a tax system is to treat certain goods preferentially, at lower VAT rates, or zero-rating or exempting some goods and services from VAT entirely. VAT exemption on medicines means that they are not included in suppliers' or dispensers' VAT accounts (irrelevant to the buyer), and that no tax can be claimed back on them. Zero-rated VAT items are included in VAT accounts and VAT may be reclaimed on purchases related to sales of zero-rated items if it is paid higher up the supply chain (again, irrelevant to the purchaser).

## 3. Objectives of the Report

The purpose of this profile is to provide an update on the prior document on tariffs on insulin provided in Volman. (14) Further this profile aims to characterise tariffs on both retail and bulk insulin and compare them to those pharmaceuticals in general. We also characterise which countries continue to maintain high import tariffs on insulin and provide recommendations going forward on the role of tariffs in access to insulin. Yet another objective is to update, if possible, the information on country-specific taxes on insulin, using taxes on “medicines” as a proxy.

## 4. Methods

### 4.1 Databases

The data on tariff rates used for the study was based on information on trade and tariffs compiled by various UN divisions, e.g., the UN Statistical Division Commodity Trade (UN COMTRADE). (17) UN COMTRADE is a repository of official trade statistics and relevant analytical tables. It contains annual trade statistics starting from 1962 and monthly trade statistics since 2010.

Another repository is derived from the United Nations Conference on Trade and Development (UNCTAD), which has a Trade Analysis Information System (TRAINS). (18-19) TRAINS is a comprehensive database at the most disaggregated level of (HS), covering tariff and non-tariff measures as well as import flows by origin for more than 150 countries. More specifically, the HS is an international nomenclature developed by the World Customs Organization, which is arranged in six digit codes allowing all participating countries to classify traded goods on a common basis. Beyond the six-digit level, countries are free to introduce national distinctions for tariffs and many other purposes, but this information is not in the database.

Bound tariffs are the maximum tariffs a country agrees to levy on imported good (14) and are those resulting from WTO negotiations or accession agreements that countries negotiate upon becoming WTO members or through Free Trade Agreements (FTA). They represent commitments not to increase tariffs above the listed rates, hence the rates are bound. For developed countries, the bound rates are generally the rates actually charged. Most developing countries have bound the rates somewhat higher than the actual rates charged, so the bound rates serve as ceilings.

“Applied” tariffs are those that are actually levied on imported goods. For the purposes of this study, applied tariffs have been used.

Data from these repositories was extracted using the UNCTAD World Integrated Trade Solution (WITS) website that allows access to tariff information in the TRAINS database. The weighted and the simple average of these measured tariffs are available. (20)

The results in the profile are displayed as the weighted average of the measured tariffs per country. The weighted average measures tariff rates by the share of total imports by value in the category (in this case the category for pharmaceutical products generally and insulin specifically). Thus if a country imports most of its pharmaceuticals in a single product category with very low tariffs, but has high tariffs in many low import product categories, then the trade-weighted average tariff would indicate a low level of overall tariff protection. This weighted average is less than the maximal rate due to exemptions and special considerations under Free Trade Agreements. (14) The weighted average reflects the “real world” situation for different tariffs used in a single category.

For some years, data may not be available. WITS offers several options to enable users to choose different years when data are not available for their selected years. One can choose from earlier or later years of data as the selected year. For the purposes of this study, if any yearly tariff data was missing, the nearest year to the missing year was used.

With regard to VAT rates, information was obtained from two sources:

1. The WHO/HAI Project on Medicine Prices and Availability Review Series on Pharmaceutical Pricing Policies and Interventions Working Paper 5: Sales Taxes on Medicines (16) which summarises information on VAT with regard to “medicines”;

2. The “2012 worldwide VAT, GST and sales tax guide” produced by the global accounting firm Ernst & Young. (21) This guide lists VAT tax rates in 101 jurisdictions and the European Union (EU). The content is current as of 1 January 2012, with exceptions noted. This document was searched for the terms “medicine”, “drug”, “pharmaceutical” or health” to see if countries had specific, non-standard or exempt VAT rates for these products. Usually, the list of exempt goods was not exhaustive. Therefore, where we could not specifically find a medicine-related VAT using one or more of these search terms, we did not assume that medicine in that country was taxed at the standard rate. Thus, the list of VAT extracted from the Ernst & Young document does not include all 101 countries but only those countries where we could say with certainty that there either was a VAT tax on medicine or it was exempt.

## 4.2. Types of Tariffs

Four different types of tariffs were available in the TRAINS database: the Most-Favoured-Nation (MFN) bound rates, MFN applied rates, preferential rates and effectively applied rates. MFN bound rates are defined by the MFN status and are the maximum rates countries agreed on charging different imported goods. Preferential rates are duties applicable under special trade agreement and the applied rates were the rates actually applied in the countries. (14)

The weighted average of the effectively applied rates have been used for the insulin analysis because these were the most precise numbers for each country studied.

## 4.3 Database Search Strategy

A selection of countries, products, tariff types and different years were made using the TRAINS website. For this analysis, we used two categories: active ingredients and finished product pharmaceuticals between 2004 and 2013. Tariff data on insulin as both active ingredient and finished product was also analysed. For the purposes of this study, HS-based category 30 for pharmaceutical products was used and more specifically, categories 3003 for active ingredients, 3004 for finished products and their corresponding tariff lines. <sup>1</sup>

## 4.4 Limitations of the Method

The primary limitation of the method is that the TRAINS database does not distinguish human from analogue insulins.

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<sup>1</sup> HS 3003- Medicaments consisting of two or more constituents which have been mixed together for therapeutic or prophylactic uses, not put up in measured doses or in forms or packings for retail sale.

300331- Medicaments containing insulin- hereinafter referred to as “bulk” insulin.

3004- Medicaments consisting of mixed or unmixed products for therapeutic or prophylactic uses, put up in measured doses (including those in the form of transdermal administration systems) or in forms or packings for retail sale.

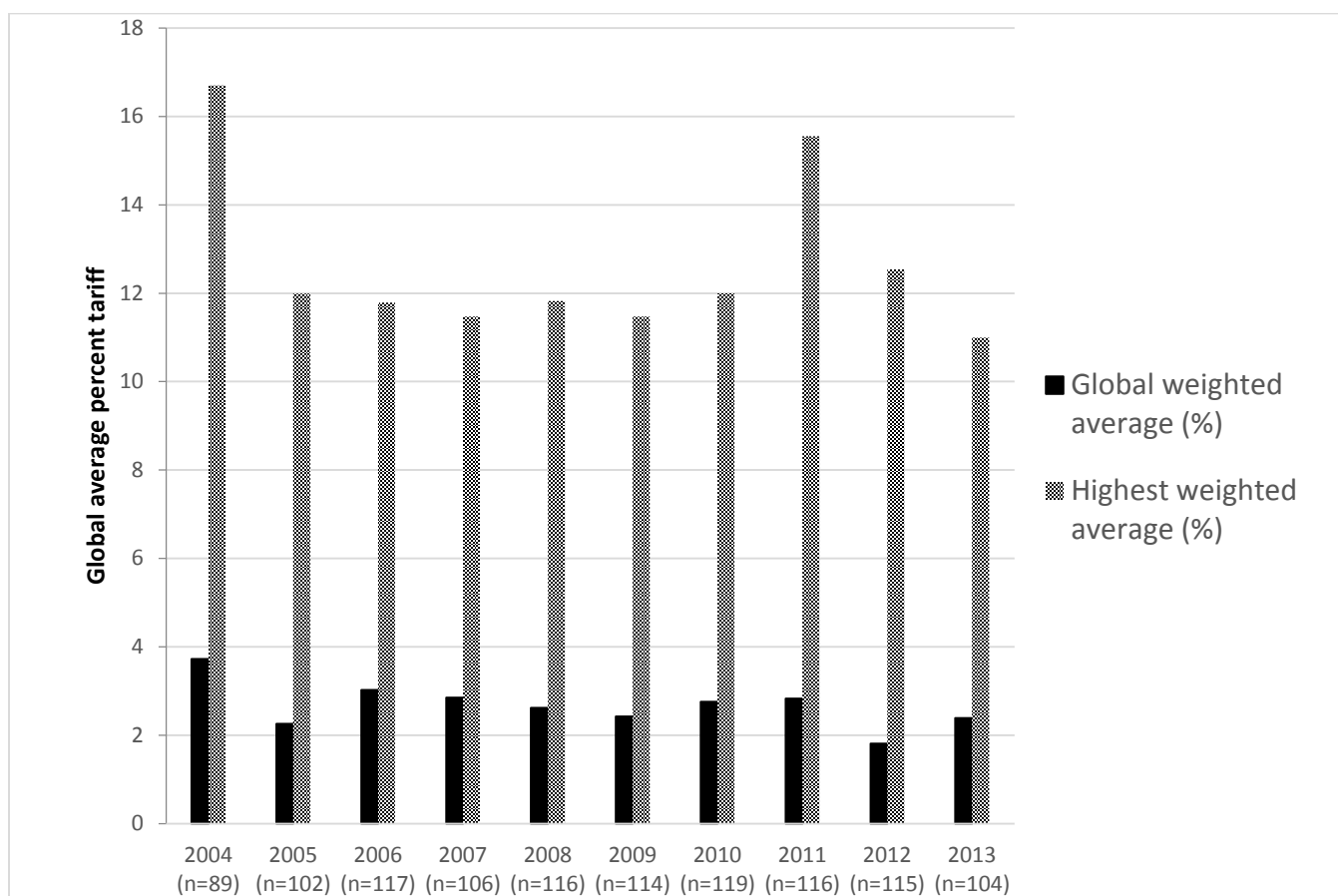
300431- Medicaments containing insulin for retail sale.

## 5. Results

### 5.1 Tariffs on Active Pharmaceutical Ingredients (HS 3003)

The global average of all the weighted average tariffs on active ingredients (applied rate) for each year from 2004 to 2013 is shown in Figure 1, along with the number of different countries (n) contributing to the dataset, and the weighted average of the highest tariffs (defined as 10 percent or greater weighted average applied rate). Those countries contributing to the highest tariffs are listed in Annex 1, ranked by their weighted average tariff.

Figure 1. Global average of all weighted average percent tariffs on active pharmaceutical ingredients.

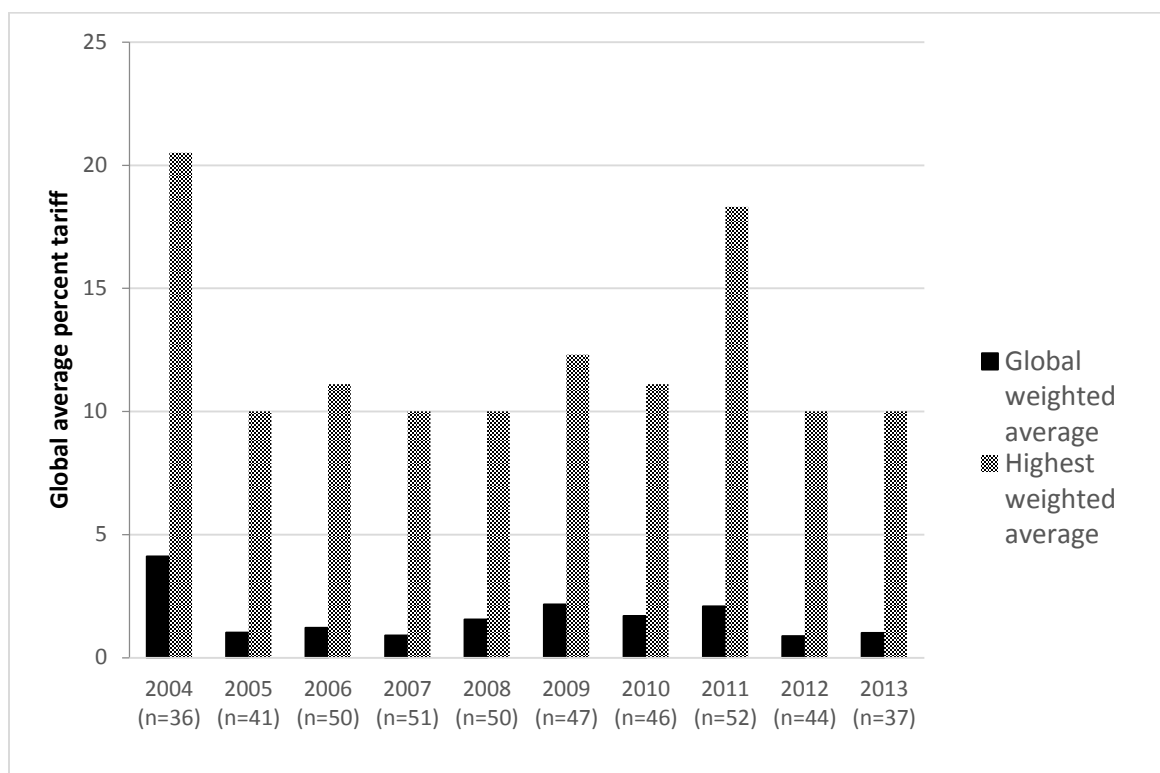


The global average tariff on active ingredients has dropped since 2004 and is holding fairly steady at slightly under 3 percent with some fluctuations. The highest tariffs (those of 10 percent or greater) have a weighted average around 11 percent. The reason for the spike in 2011 is unclear. In 2013, the highest tariffs (10 percent or greater) were in the Caribbean, Africa (Ghana), and Southeast Asia (Pakistan, India, Thailand).

## 5.2 Tariffs on Bulk Insulin (HS 300331)

The global weighted average tariff on bulk insulin (applied rate) for each year from 2004 to 2013 is shown below in Figure 2 along with the weighted average of the highest tariffs (more than 10 percent applied rate) for each year. “N” is the number of countries contributing to this analysis. Those countries contributing to these highest tariffs on bulk insulin are listed in Annex 2.

Figure 2. Global average of all weighted average percent tariffs on bulk insulin.

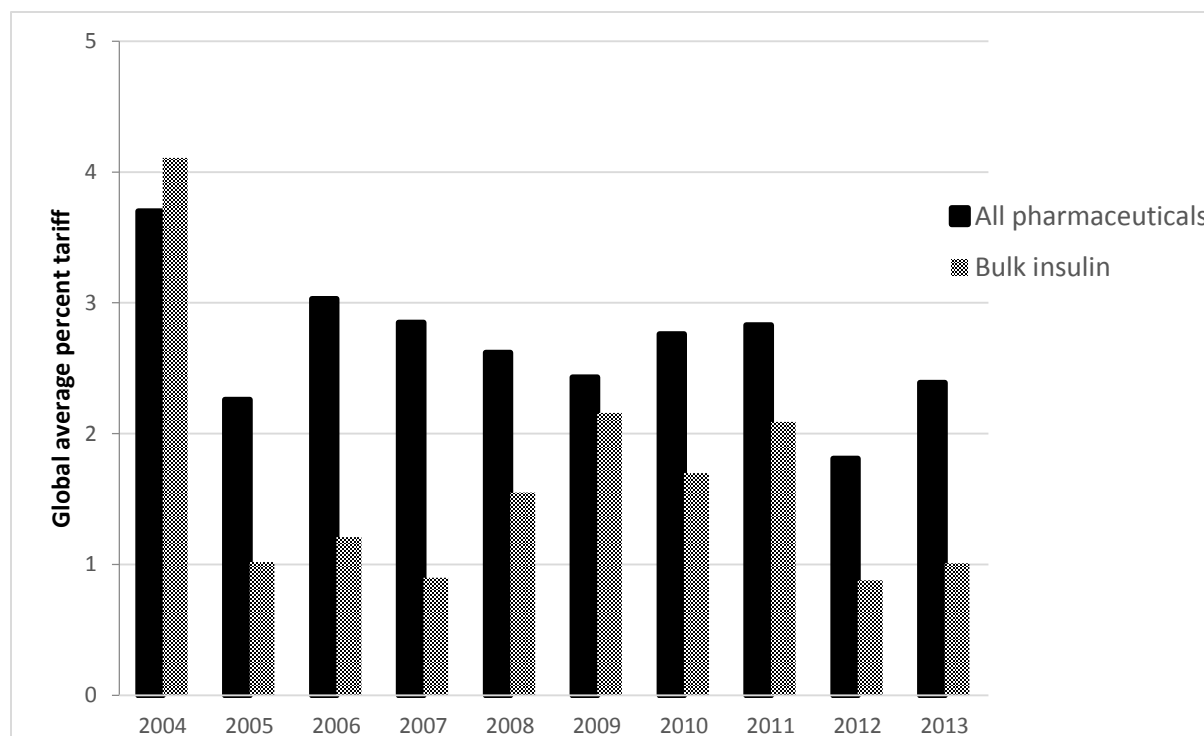


The global weighted average import tariff for bulk insulin has dropped since 2004. It is fluctuating but is less than two percent. The highest tariffs have a weighted average around 11 percent. The reason for the spike in 2011 is likely due to the inclusion of Iran’s 35 percent import tariff. However, in 2012 and 2013, the only countries in the database contributing to the highest tariffs for bulk insulin (Annex 2) are in Africa, Sudan and Ghana respectively. Within these two countries, we are virtually certain that insulin is not being produced so there is no obvious local industry protectionist value for these high tariffs.

## 5.3 Comparison of Tariffs on Active Pharmaceutical Ingredients vs. Bulk Insulin

We combined Figures 1 and 2 to show the global weighted average tariff on active pharmaceutical ingredients as well as bulk insulin (applied rate) for each year (2004-2013) is in Figure 3.

Figure 3. Global average of all weighted average percent tariffs on bulk insulin and active pharmaceutical ingredients.

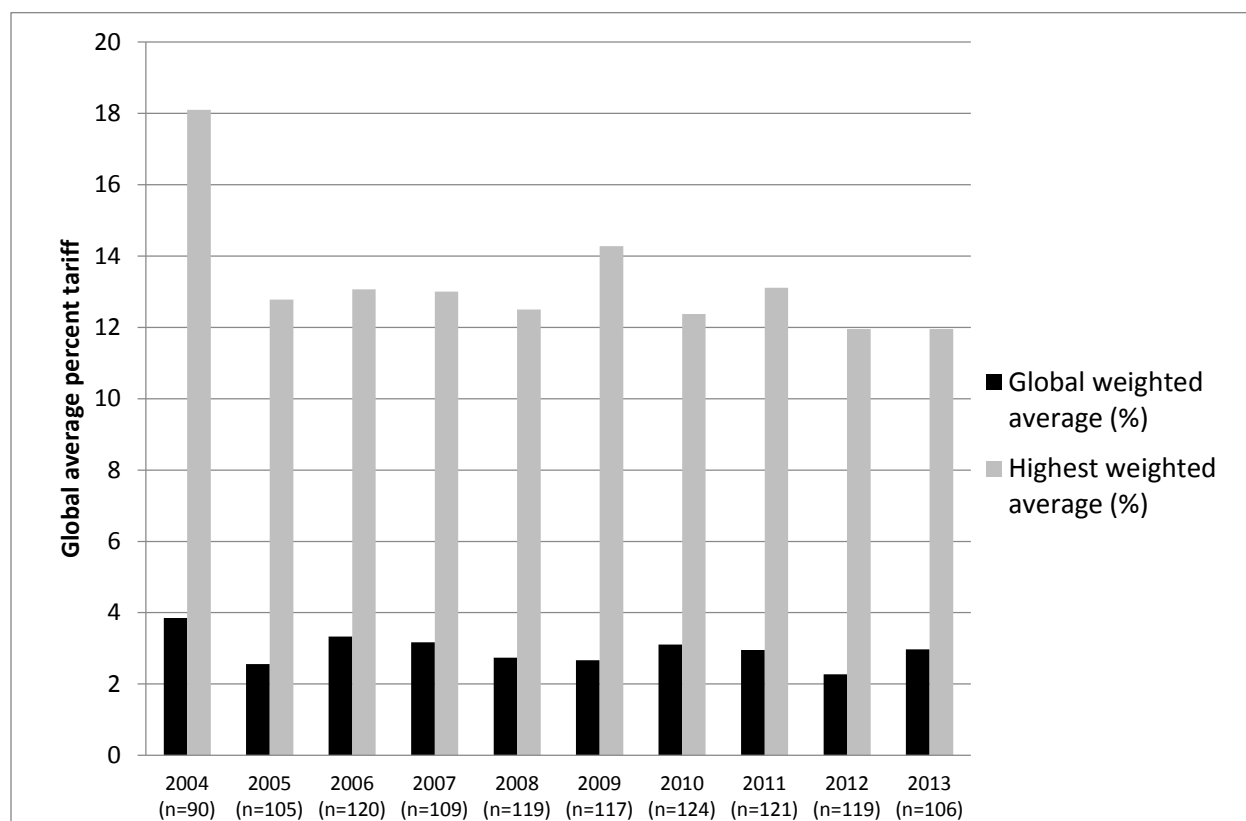


Except for 2004, the global average of the weighted average bulk insulin is uniformly less than that of the entire class of pharmaceuticals as active ingredients, sometimes by a factor of at least two (e.g., 2005, 2006, 2007, 2012, 2013). In 2009, the difference between the two types of tariffs was the least (0.2 percent). Possibly, this was a reflection of the global economic downturn in 2008 and 2009. The difference between the two tariff rates tended to increase after 2009.

## 5.4 Tariffs on All Pharmaceutical Finished Products (HS 3004)

The global weighted average tariff on all pharmaceuticals as finished products (applied rate) for each year (2004-2013) is shown below in Figure 4 along with the weighted average of the highest tariffs (more than 10 percent applied rate) for each year and the number of countries (n) comprising the dataset. Those countries contributing to the highest tariffs included in Figure 4 are found in Annex 3, ranked by their weighted average tariff.

Figure 4. Global average of all weighted average percent tariffs on finished pharmaceutical products.



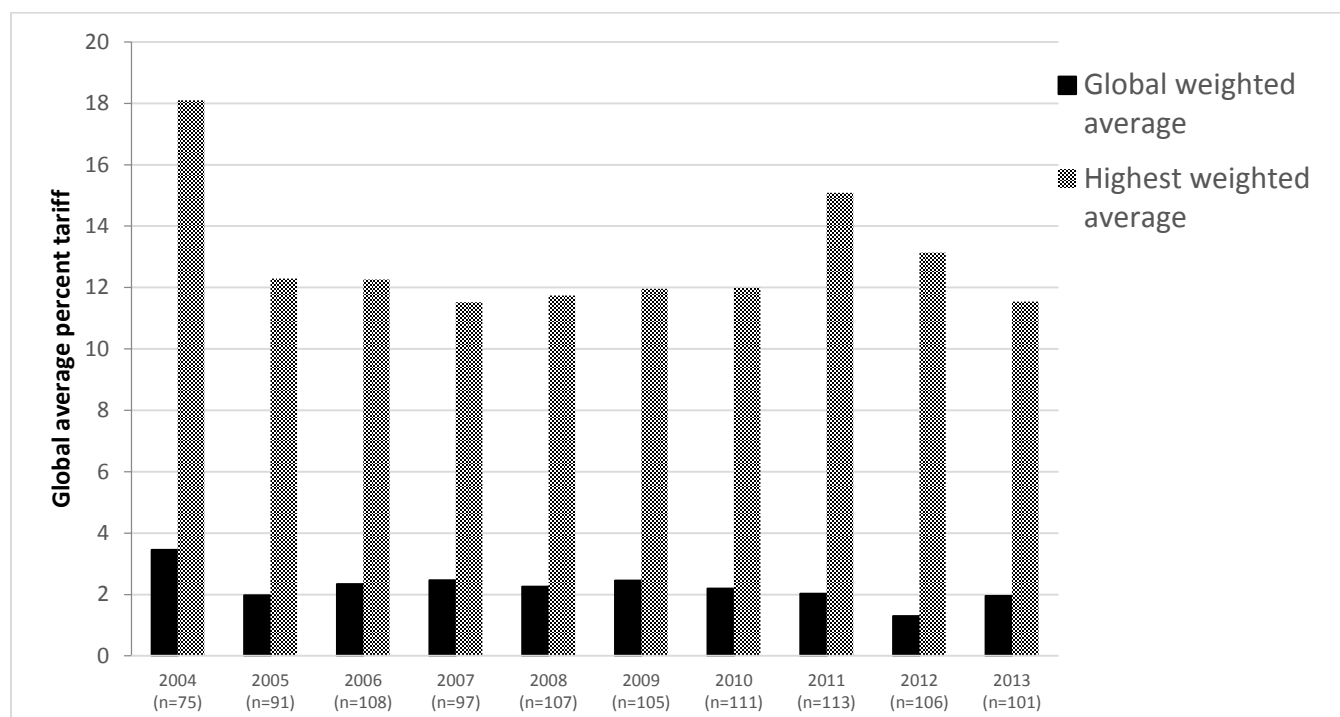
The global weighted average (n=90 to 124 countries) showed a drop since 2004, fluctuating at slightly less than a three percent tariff on imported finished pharmaceuticals. The highest weighted average tariff (10 percent or greater) also dropped since 2004 and is fluctuating around 12 percent. In 2013, eight countries showed the highest tariffs, five being small economies from the Caribbean (Anguilla, Antigua and Barbuda, Monserrat, and Bermuda) and the remaining being Pakistan, Nepal, India, and the Russian Federation.

## 5.5 Tariffs on Retail Insulin: (HS 300431)

The global weighted average tariff on retail insulin (applied rate) for each year from 2004 to 2013 is shown below in Figure 5 along with the number of countries (n) used to obtain the global weighted average. The weighted average of the highest tariffs (more than 10 percent applied rate) for each year is also shown and those countries are in Annex 4.



Figure 5. Global average of all weighted average percent tariffs on retail insulin.

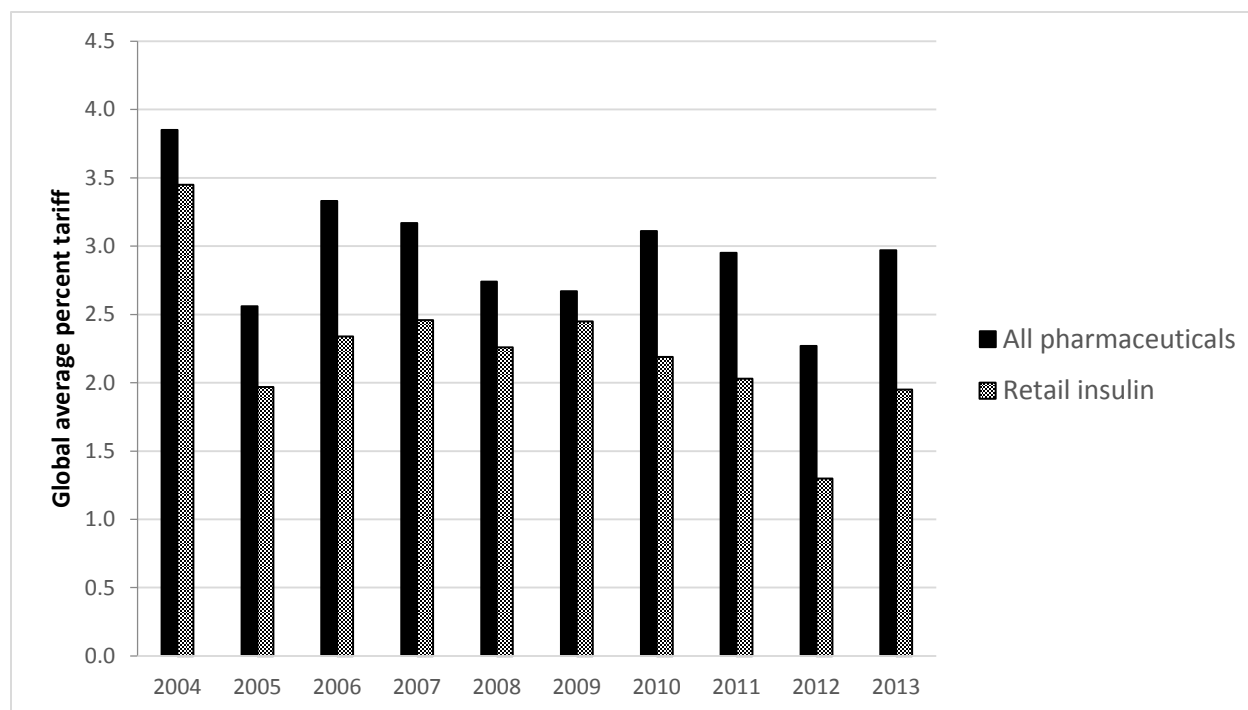


The global weighted average import tariff for retail insulin was slightly less than 3.5 percent in 2004 and has decreased to about 1.9 percent in 2013. The weighted average import tariff for those countries with greater than 10 percent import tariff on retail insulin has decreased from 18 percent in 2004 to about 12 percent in 2013. In 2012 and 2013 the majority of countries with the highest import tariffs on retail insulin are from Latin America, particularly Argentina, Brazil, Paraguay and Uruguay, all of whom consistently have import tariffs on retail insulin in excess of 10 percent. Mexico, India, and Pakistan consistently are showing import tariffs for retail insulin of 10 percent.

## 5.6 Comparison of Tariffs on Finished Pharmaceuticals vs. Retail Insulin

In Figure 6, the outcomes of Figures 4 and 5 are combined to show the global weighted average tariff on finished pharmaceuticals as well as insulin for retail sale (applied rates) for each year from 2004-2013.

Figure 6. Global average of all weighted average percent tariffs on all finished pharmaceuticals v. retail insulin.



The global average of the weighted average retail insulin is uniformly less than that of the entire class of pharmaceuticals as finished product, but not less than a factor of two (e.g., 2012). As for the case of bulk insulin versus active pharmaceuticals, in 2009 the difference in weighted average tariff was the least. Differences after 2009 tended to increase again.

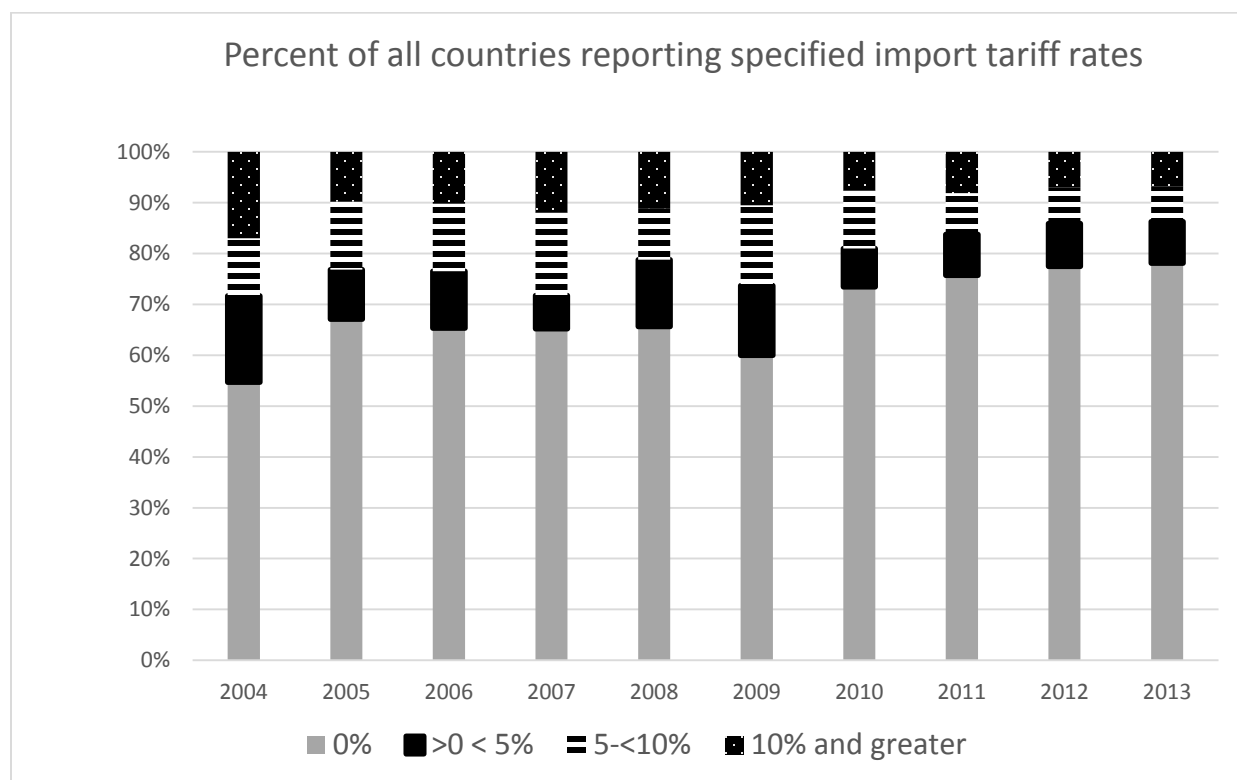
India, which is considered to be among those countries with a sophisticated pharmaceutical industry with significant research capabilities, had 10 percent tariff rates on both active ingredients and finished products (see Annexes). The high tariff rates on both categories may be explained by the fact that India is an important producer of these categories both for the domestic market and for export.

## 6. Country Comparisons

### 6.1 Fraction of Countries with Specified Import Tariffs: Retail Insulin

Of the countries reporting their tariffs, between 2004 and 2013 the proportion of the countries with specified import tariffs are shown in Figure 7 (Y axis). The majority of countries reporting have zero retail insulin import tariffs, and this number has been increasing over time (gray bars).

Figure 7. Fraction of countries reporting specified import tariffs on retail insulin over time.



## 6.2 Country Income Breakdown: Retail Insulin

We used the World Bank classification to distinguish countries according to income.<sup>(20)</sup> For 2004, 2008 and 2013, we dis-aggregated the tariff rates among countries by income level. Results for the three years are in Tables 1, 2 and 3 respectively.

Table 1. Tariff Rates for 2004 ranked by World Bank income classification (Retail Insulin)

2004: Retail Insulin (HS Code 300431)						
Tariff Rate	# Countries (n=75)	% Countries	Low Income (n=6)	Lower-middle (n=16)	Upper-middle (n=31)	High income (n=22)
0	46	61.3%	5	7	16	18
0.1-5	17	22.7%	1	5	9	2
5.1-10	5	6.7%	0	3	1	1
10.1-15	5	6.7%	0	0	4	1
15.1-20	0	0.0%	0	0	0	0
>20	2	2.7%	0	1	1	0

Table 2. Tariff Rates for 2008 ranked by World Bank income classification (Retail Insulin)

<b>2008: Retail Insulin (HS Code 300431)</b>						
Tariff Rate	# Countries (n=107)	% Countries	Low Income (n=17)	Lower-middle (n=29)	Upper-middle (n=35)	High income (n=26)
0	70	65.4%	11	16	20	23
0.1-5	20	18.7%	4	5	10	1
5.1-10	11	10.3%	1	7	2	1
10.1-15	6	5.6%	1	1	3	1
15.1-20	0	0.0%	0	0	0	0
>20	0	0.0%	0	0	0	0

Table 3. Tariff Rates for 2013 ranked by World Bank income classification (Retail Insulin)

<b>2013: Retail Insulin (HS Code 300431)</b>						
Tariff Rate	# Countries (n=101)	% Countries	Low Income (n=21)	Lower-middle (n=16)	Upper-middle (n=29)	High income (n=26)
0	71	70.3%	15	13	20	23
0.1-5	16	15.8%	5	7	4	0
5.1-10	9	8.9%	0	4	3	2
10.1-15	5	5.0%	1	1	2	1
15.1-20	0	0.0%	0	0	0	0
>20	0	0.0%	0	0	0	0

The majority of countries have no import tariffs on retail insulin and this majority has been increasing over time (52 to 77 percent). See also Figure 7. Further, over time, more countries of all income groups now have no import tariffs on retail insulin. The number of low-income countries with no import tariffs on retail insulin has tripled (five to 15) from 2004 to 2013. Conversely, there are fewer countries with the very highest of tariffs (15 percent or greater) but those in the 10-15 percent range do exist and continue to apply them (See Annexes).

## **7. Differences Between Finished Retail Insulin and Bulk Insulin Tariff Rates: Paired Analysis**

This section analyses the differences that exist between insulin tariff rates for active pharmaceutical ingredients (bulk) and finished products (retail) per country. We used the same method as Levison. (11) Please refer to Annex 5, which lists the 39 countries for which comparative data was available for 2013.

Of these 39 pairs of tariffs, only Serbia, South Korea, and Yemen showed any differences between retail and bulk insulin tariffs. Serbia's import tariffs on retail insulin (two percent) were twice that of bulk insulin. Yemen levied higher tariffs on bulk insulin compared to retail insulin; but the difference was trivial - only 0.3 percent more. For Yemen, such a difference in tariffs would hardly seem to matter to

local producers unless the intention is to protect active pharmaceutical ingredients (API) producers. However, Yemen neither produces bulk nor retail insulin.

In 36 out of 39 countries where both tariffs existed, the countries had equal tariffs levied on both raw materials and finished products. In these cases the tariffs can be considered as a revenue generating tax without any industrial policy significance. However, of the 36 countries, 30 had zero tariffs for both bulk and retail insulin.

Olcay and Laing looked at tariffs on pharmaceutical products as a group and noted that 151 countries had both API and final product tariffs. (5) Compare this to the 39 countries that have both API and final product tariffs on insulin.

In 2013, in those countries where we recorded both bulk and retail tariffs, it is clear that only a few countries (Chile, Ghana, South Korea, Myanmar, Serbia, and Yemen) generate any revenue at all and almost all of the revenue generated comes from imports of retail grade insulin. In a prior 2005 study of tariffs on pharmaceuticals, for 145 countries the average country weighted tariff rates for all active ingredients and finished products, and revenue generated from pharmaceutical import tariffs as a percentage of Gross Domestic Product (GDP), amounted to less than 0.1 percent of national GDP. (5)

## **7.1 A Case Study in Argentina: How Much Revenue is Really Generated from Imports of Retail Insulin?**

The amount of revenue generated by import tariffs on insulin can be trivial, even in countries with a substantial import tariff. Argentina has a consistently high import tariff on retail insulin. In 2013, Argentina had a 14 percent import tariff on retail insulin (but none on bulk insulin) and imported \$US 53,730,000 of retail insulin by value. The retail insulin tariff revenue for 2013 would be about \$US7.5 million.

To put this in to context, Argentina has a national programme for the prevention and control of diabetes (PRONADIA), and a programme for the free provision of drugs at national level (REMEDIAR), which supplies metformin, glibenclamide, and human insulin to publicly insured people living with diabetes through primary care units and public hospitals all over the country. (23) Additionally, the Superintendencia de Servicios de Salud is the national institution that assesses the degree of coverage of care and drug treatment by all institutions of the social security system as well as prepaid ones. Diabetes prevalence is about 9.5 percent and with a 2013 population of about 40 million, we estimate there to be about four million persons with diabetes in the country. The government pays for 100 percent of the cost of insulin as well as up to 300 test strips per year for self-monitoring. Note that 300 free test strips per year is less than one strip per day. Typically people living with diabetes are recommended to check their blood sugar four to six times a day.

Insulin imported into Argentina consists of both human and analogue insulin (see Limitations section) and generates US\$7.5 million tariff income. If returned completely to the public health sector to assist only persons with diabetes, the amount would be estimated at about US\$0.2 dollars per person with diabetes. In contrast, for 2010 the per capita hospitalisation cost for people with diabetes in Argentina was estimated at US\$ 1,628. (23)

## 8. VAT on Medicines

Table 4 summarises the VAT (ref 21) and VAT/GST and other sales taxes (ref 16) from our two sources as an average of all countries (n) in the particular income group. The full dataset is in Annex 6. Taxes on medicines in both references are used as a proxy measure for taxes on insulin.

Table 4. Average taxes on insulin for all countries (n) in a given World Bank income group.

Income Group	Metric	[REF 25]	[REF 26]
High income OECD	Mean	9.1	8.3
	n	23.0	29.0
	St. Dev	7.2	7.8
	Range	0-25	0-25
High income- non OECD	Mean	5.0	4.6
	n	3.0	13.0
	St. Dev	5.0	4.4
	Range	0-10	0-21
Upper middle income	Mean	16.0	7.0
	n	10.0	20.0
	St. Dev	9.5	7.0
	Range	6-34	0-24
Lower middle income	Mean	12.3	7.0
	n	12.0	17.0
	St. Dev	6.4	5.4
	Range	4-25	0-20
Low income	Mean	3.6	6.0
	n	3.0	3.0
	St. Dev	4.1	10.4
	Range	0-8	0-18

There are some discrepancies between the two estimates, which may reflect that one source is only VAT (ref 21) from 2010-2012 whereas the other is VAT/GST and other sales taxes (ref 16) from 2010 and earlier. It may also be that countries in these income groups have modified their tax rate on medicines over time. Further, it is not always immediately obvious into which category insulin would fall. For example, in Bulgaria (see Annex 6), health related goods are exempt from the standard 20 percent VAT rate and the question is whether insulin is a health related good. This kind of uncertainty may also lead to discrepancies between the two estimates. Nonetheless, the data from both sources (16, 21) suggest little relationship between VAT on medicines (e.g. insulin) and country income.

## **9. Discussion/Conclusion**

Import tariffs on all medicines and on insulin play, for the majority of countries, an increasingly insignificant role as revenue generator. Further, for most countries that do not produce either API insulin or retail grade insulin, high import tariffs on either make no industrial or health policy sense.

In particular, we note that the small island economies of the Caribbean have consistently had very high import tariffs on insulin (see Annexes). Any reduction of import duties, associated with trade liberalisation, often has the effect of reducing fiscal revenues because the level of tax receipts in small open economies is heavily dependent on import and export trends. It is likely that Caribbean governments are concerned that a general tariff reduction could have substantial negative revenue effects, which could seriously affect their ability to grow their economies, alleviate poverty, and keep debt burdens low. (24)

For other countries, such as Brazil and Argentina, high tariff rates on retail insulin could be a factor for generating additional revenue for governments. We are not aware of Argentina locally producing insulin. It is difficult to understand why Argentina would want to levy duties on retail insulin, when the overall gain is likely to be small. It appears that Brazil is not presently making insulin for either public or private sectors, but is importing either bulk and/or retail insulin from Ukraine. PJSC Indar (Kyiv), the only Ukrainian company with a full cycle of insulin production, plans to begin insulin production in Brazil at a plant built with the technology of Indar in 2014. It is anticipated that by 2016 Brazil will have insulin production with a complete cycle. (25) We have no knowledge of the terms of this technology transfer agreement but it is probably for the public sector.

However, it is doubtful if this Ukrainian source is the only source, as Novo Nordisk also has a private sector manufacturing facility in Brazil. In 2007 Novo Nordisk accounted for 52.8 percent of Brazil's private sector insulin market. (26) Novo Nordisk has recently made heavy investments in the country. In 2007, the company completed construction of a US\$200 million factory in Montes Claros, Brazil, which is the largest insulin production site in Latin America, and Novo Nordisk's largest factory outside Denmark. (26) The site produces modern generation analogue insulins, which are relatively expensive and are not widely used by the government's official healthcare programmes.

Of those countries with tariffs on both bulk and retail insulin, it makes no industrial or health policy sense to impose tariffs if finished products are not made locally. India, and possibly Brazil in the future, is an exception since India can make their own APIs and finished products. This means that they can levy import duties on APIs and finished products to protect the local industry. However, not all countries that apply high tariffs on active pharmaceutical ingredients produce finished products. There is also no industrial logic for a country to import active pharmaceutical ingredients on which high tariffs are charged, in order to incorporate them in finished products.

For countries like Argentina or Brazil, tariffs actually restrict or discourage imports by making imported goods more expensive than domestic goods. If a company imports US\$100 of retail insulin from Denmark

into Argentina, and must pay a US\$14 tariff at the Argentina border, the company will be likely to increase the price of that insulin in Argentina, to make up for the cost of the tariff. Consumers can be expected to consume less insulin made in Denmark if it costs more than domestic insulin, even if the Danish brand is thought to be superior in quality to the domestic brand. Yet Argentina, to our best knowledge, has no local insulin industry. Similarly, at present, Brazil is not producing its own insulin so high import tariffs on finished products are simply a tax on those with diabetes who pay out of pocket.

With regard to taxes, not all medicines are taxed in all countries. Countries at all income levels sometimes exempt medicines entirely from taxes. Imports and locally made medicines are sometimes taxed differently, for example Tanzania adds no tax to locally produced medicines but between 10-16 percent on imports (Annex 6). Mexico only has a VAT on patented medicines and Ireland has a 21.5 percent VAT on medicines but none on oral medicines. For the countries in which medicine price component data has been collected, it is clear that governments are indeed a contributor to the price of medicine and thus a factor in restricting access to insulin. Estimates of the general magnitude of medicine taxes as a source of national tax revenue ranged from 0.03 to 1.66 percent of total tax revenue. However, total tax revenues often comprise most of a government's financial capability so although these percentages may be small, the amounts generated can be large. Thus taxes on medicine sales represent a lot of money and "it is easy to understand the firm resistance of Ministries of Finance when challenged by health advocates to alleviate the plight of the sick by lowering or abolishing taxes on medicines." (16)

## **10. Policy Recommendations**

- Eliminating import tariffs on insulin should be one activity in a comprehensive policy reform all along the pharmaceutical value chain to improve access.
- Countries that have import tariffs on insulin that are 10 percent or more should be eliminated.
- Unhealthy products and behaviour should be taxed while health-promoting actions and goods should be tax-exempt or subsidised.



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## Annex 1. Active ingredients: all medicines: 10 percent and above

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Iran, Islamic Rep. 52	Morocco 14	Burundi 15	Burundi 15	Burundi 15	Tunisia 15	Morocco 16	Iran, Islamic Rep. 35	Guyana 13	Montserrat 13
India 28	India 13	Guyana 13	Guyana 13	Nigeria 14	Antigua and Barbuda 12	Dominica 13	Belize 14	Montserrat 12	Antigua and Barbuda 13
Barbados 12	Antigua and Barbuda 13	India 13	Peru 11	Guyana 13	Nepal 12	Suriname 13	Suriname 13		Ghana 10
Jamaica 11	Trinidad and Tobago 12	Morocco 12	Antigua and Barbuda 11	Grenada 13	Congo, Dem. Rep. 10	Trinidad and Tobago 13	Guyana 12		India 10
Peru 11	Peru 10	Peru 11	Belize 10	Morocco 11	Ghana 10	Barbados 12	Barbados 12		Pakistan 10
Argentina 11	Pakistan 10	Antigua and Barbuda 10	Congo, Dem. Rep. 10	Congo, Dem. Rep. 10	Pakistan 10	Nepal 12	Nepal 12		Thailand 10
Brazil 11		Congo, Dem. Rep. 10	Ghana 10	Ghana 10		Guyana 12	Morocco 12		
Paraguay 10		Pakistan 10		Lao PDR 10		Congo, Dem. Rep. 10			
Pakistan 10						Ghana 10			
Thailand 10						Pakistan 10			

## Annex 2. Bulk insulin: 10 percent and above

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Iran, Islamic Rep. 52	Pakistan 10	India 13	Bolivia 10	Congo, Dem. Rep. 10	Tunisia 15	Nepal 13	Iran, Islamic Rep. 35	Sudan 10	Ghana 10
India 30		Tunisia 11		Bolivia 10	Argentina 14	Congo, Dem. Rep. 10	Nepal 11		
Tunisia 11		Pakistan 10			Nepal 13	Ghana 10	Pakistan 10		
Bolivia 10					Ghana 10				
Pakistan 10					Pakistan 10				
Thailand 10									

### Annex 3. All medicines finished products: 10 percent and above

2004		2005		2006		2007		2008		2009		2010		2011		2012		2013	
Iran, Islamic Rep.	52	India	15	Congo, Dem. Rep.	18	Congo, Dem. Rep.	18	Congo, Dem. Rep.	17	Congo, Dem. Rep.	18	Congo, Dem. Rep.	17	Iran, Islamic Rep.	20	Anguila	15	Anguila	15
India	30	Pakistan	14	Nigeria	16	Burundi	15	Nigeria	15	Nigeria	17	Nigeria	15	Nigeria	16	Pakistan	12	Antigua and Barbuda	13
Sierra Leone	14	Antigua and Barbuda	13	Burundi	15	Pakistan	14	Burundi	14	Tunisia	15	Nepal	13	Nepal	13	Guyana	12	Pakistan	13
Tunisia	14	Trinidad and Tobago	12	Sierra Leone	15	Grenada	12	Pakistan	13	Pakistan	13	Pakistan	13	Pakistan	13	Bermuda	11	Montserrat	12
Pakistan	14	Peru	11	Tunisia	14	Guyana	12	Guyana	12	Nepal	13	Dominica	12	Barbados	12	Russian Federation	10	Nepal	12
Jamaica	12			Pakistan	13	Barbados	12	Grenada	12	Antigua and Barbuda	13	Guyana	12	Guyana	11			Bermuda	10
Barbados	12			India	13	Antigua and Barbuda	12	Tunisia	12	Guyana	12	Barbados	12	Jamaica	10			Russian Federation	10
Trinidad and Tobago	12					Trinidad and Tobago	11	Trinidad and Tobago	11			Trinidad and Tobago	11	Suriname	10			India	10
Peru	11			Grenada	12			Belize	10			Suriname	10						
Thailand	10			Tobago	11			Lao PDR	10			Jamaica	10						
				Barbados	11														
				Antigua and Barbuda	11														
				Jamaica	11														
				Guyana	11														

#### Annex 4. Retail insulin: 10 percent and above

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
Iran, Islamic Rep.	52	India 15	Burundi 15	Burundi 15	Burundi 15	Nepal 15	Argentina 14	Iran, Islamic Rep. 35	Argentina 14	Argentina 14
India	30	Brazil 14	Tunisia 15	Argentina 14	Argentina 14	Tunisia 15	Brazil 14	Nepal 15	Brazil 14	Brazil 14
Brazil	15	Paraguay 13	Argentina 14	Brazil 14	Brazil 14	Argentina 14	Nepal 14	Argentina 14	Paraguay 14	Uruguay 14
Tunisia	14	Uruguay 13	Brazil 14	Peru 12	Uruguay 13	Brazil 14	Morocco 13	Brazil 14	Uruguay 14	Nepal 13
Uruguay	14	Argentina 12	Uruguay 14	Uruguay 12	Tunisia 12	Uruguay 13	Paraguay 13	Paraguay 14	Mexico 10	Paraguay 11
Argentina	13	Peru 12	India 13	Bolivia 10	Paraguay 11	Paraguay 11	Uruguay 13	Uruguay 14		Ghana 10
Peru	12	Pakistan 10	Peru 12	Dem. Rep. 10	Dem. Rep. 10	Dem. Rep. 10	Dem. Rep. 10	Morocco 11		India 10
Bolivia	10	Thailand 10	Bolivia 10	Ghana 10	Ghana 10	Ghana 10	Ghana 10	Mexico 10		Mexico 10
Pakistan	10		Congo, Dem. Rep. 10	Pakistan 10	Lao PDR 10	India 10	Mexico 10	Thailand 10		Pakistan 10
Thailand	10		Pakistan 10	Paraguay 10	Fm Sudan 10	Pakistan 10	Pakistan 10			Thailand 10
			Thailand 10	Thailand 10	Thailand 10	Thailand 10	Thailand 10			

## Annex 5. Difference between retail and bulk tariffs and revenues generated by each

RETAIL INSULIN				BULK INSULIN				Total Revenues Generated (Retail + Bulk)	% of Total Revenues Generated by Retail Insulin
Country	Weighted Average % Tariff (2013)	Import Value (*1000 USD)	Retail: Revenues generated (USD)	Country	Weighted Average % Tariff (2013)	Import Value (*1000 USD)	Retail: Revenues generated (USD)		
Albania	0	537	0	Albania	0	0.1	0	0	0
Bermuda	0	168	0	Bermuda	0	18	0	0	0
Botswana	0	87	0	Botswana	0	1	0	0	0
Burundi	0	688	0	Burundi	0	0.5	0	0	0
Canada	0	331610	0	Canada	0	565	0	0	0
<b>Chile</b>	<b>6</b>	<b>15468</b>	<b>92810</b>	Chile	6	13	78.0	<b>92888</b>	<b>99</b>
Dominican Republic	0	294	0	Dominican Republic	0	53	0	0	0
European Union	0	99091	0	European Union	0	95	0	0	0
French Polynesia	0	1187	0	French Polynesia	0	13	0	0	0
Ghana	10	1046	10460	Ghana	10	116	1160.0	<b>11620</b>	<b>90</b>
Guatemala	0	2191	0	Guatemala	0	220	0	0	0
Guyana	0	167	0	Guyana	0	37	0	0	0
Indonesia	0	33768	0	Indonesia	0	34	0	0	0
<b>Israel</b>	<b>0</b>	<b>19790</b>	<b>0</b>	<b>Israel</b>	<b>0</b>	<b>3</b>	<b>0</b>	0	0
Kazakhstan	0	20362	0	Kazakhstan	0	1	0	0	0
Kenya	0	1656	0	Kenya	0	9	0	0	0
Korea, Rep.	0	53537	0	Korea, Rep.	8	0.3	3	3	0
Lesotho	0	4	0	Lesotho	0	55	0	0	0
Mauritius	0	1195	0	Mauritius	0	269	0	0	0
Mayotte	0	575	0	Mayotte	0	111	0	0	0

<b>Myanmar</b>	<b>1.5</b>	<b>701</b>	<b>1051</b>	<b>Myanmar</b>	<b>1.5</b>	<b>50</b>	<b>75</b>	<b>1126</b>	<b>93</b>
Namibia	0	6	0	Namibia	0	58	0	0	0
Norway	0	28046	0	Norway	0	186	0	0	0
Panama	0	1936	0	Panama	0	5	0	0	0
Russian Federation	0	267795	0	Russian Federation	0	91496	0	0	0
Samoa	0	22	0	Samoa	0	0.1	0	0	0
<b>Serbia, FR(Serbia/Montenegro)</b>	<b>2</b>	<b>73370</b>	<b>146739</b>	<b>Serbia, FR(Serbia/Montenegro)</b>	<b>1</b>	<b>66.0</b>	<b>66</b>	<b>146805</b>	<b>99</b>
Singapore	0	2817	0	Singapore	0	7.0	0	0	0
South Africa	0	51008	0	South Africa	0	0.9	0	0	0
Swaziland	0	40	0	Swaziland	0	3	0	0	0
Switzerland	0	47401	0	Switzerland	0	25	0	0	0
Tanzania	0	386	0	Tanzania	0	30	0	0	0
Turkey	0	177189	0	Turkey	0	0.4	0	0	0
Uganda	0	56	0	Uganda	0	35	0	0	0
United States	0	3594022	0	United States	0	2896	0	0	0
<b>Yemen</b>	<b>4.7</b>	<b>529</b>	<b>24738</b>	<b>Yemen</b>	<b>5</b>	<b>257</b>	<b>1287</b>	<b>26025</b>	<b>95</b>
		Total Revenue	275798.1			Total Revenue	2669		
		Total imports	4828743.3			Total imports	96729.6		
		Retail revenue/Total retail imports (%)	5.7			Bulk revenue/Total bulk imports (%)	2.7		



## Annex 6. VAT on medicines for different countries

Note: VAT levels on medicines (2012) are taken from reference (21). WHO/HAI is from reference (16)

<i>Economy</i>	<i>Income group</i>	<i>%VAT on MEDICINES [21]</i>	<i>WHO/HAI: %VAT OR %SALES MEDICINES [16]</i>
Afghanistan	Low income		
Albania	Upper middle income	10	
Algeria	Upper middle income		18
American Samoa	Upper middle income		
Andorra	High income: nonOECD		
Angola	Upper middle income		
Antigua and Barbuda	High income: nonOECD		
Argentina	High income: nonOECD	21	
Armenia	Lower middle income	20	20
Aruba	High income: nonOECD	0	
Australia	High income: OECD	0	
Austria	High income: OECD	10	10
Azerbaijan	Upper middle income		
Bahamas, The	High income: nonOECD		
Bahrain	High income: nonOECD		
Bangladesh	Lower middle income		
Barbados	High income: nonOECD	0	
Belarus	Upper middle income	20	
Belgium	High income: OECD	6	6
Belize	Upper middle income		
Benin	Low income		
Bermuda	High income: nonOECD		
Bhutan	Lower middle income		
Bolivia	Lower middle income	13	13
Bosnia and Herzegovina	Upper middle income		
Botswana	Upper middle income	0	
Brazil	Upper middle income	0	24
Brunei Darussalam	High income: nonOECD		
Bulgaria	Upper middle income	0	20
Burkina Faso	Low income		
Burundi	Low income		
Cabo Verde	Lower middle income		

Cambodia	Low income		
Cameroon	Lower middle income		
Canada	High income: OECD	0	
Cayman Islands	High income: nonOECD		
Central African Republic	Low income		
Chad	Low income		2.9
Channel Islands	High income: nonOECD		
Chile	High income: OECD	19	
China	Upper middle income	6	20
Colombia	Upper middle income	8	
Comoros	Low income		
Congo, Dem. Rep.	Low income		0
Congo, Rep.	Lower middle income		19
Costa Rica	Upper middle income	0	
Côte d'Ivoire	Lower middle income		
Croatia	High income: nonOECD	0	
Cuba	Upper middle income		
Curaçao	High income: nonOECD	6	
Cyprus	High income: nonOECD	5	
Czech Republic	High income: OECD	17	10
Denmark	High income: OECD	25	25
Djibouti	Lower middle income		
Dominica	Upper middle income		
Dominican Republic	Upper middle income	8	
Ecuador	Upper middle income	0	
Egypt, Arab Rep.	Lower middle income	10	
El Salvador	Lower middle income	13	13
Equatorial Guinea	High income: nonOECD		
Eritrea	Low income		
Estonia	High income: OECD	20	9
Ethiopia	Low income		
Faeroe Islands	High income: nonOECD		
Fiji	Upper middle income		
Finland	High income: OECD	9	9
France	High income: OECD	2	2
French Polynesia	High income: nonOECD		
Gabon	Upper middle income		

Gambia, The	Low income		
Georgia	Lower middle income	9	
Germany	High income: OECD	19	19
Ghana	Lower middle income	15	15
Greece	High income: OECD	0	11
Greenland	High income: nonOECD		
Grenada	Upper middle income		
Guam	High income: nonOECD		
Guatemala	Lower middle income	12	
Guinea	Low income		
Guinea-Bissau	Low income		
Guyana	Lower middle income		
Haiti	Low income		
Honduras	Lower middle income	0	
Hong Kong SAR, China	High income: nonOECD		
Hungary	High income: OECD	5	5
Iceland	High income: OECD		
India	Lower middle income	5	19
Indonesia	Lower middle income	10	10
Iran, Islamic Rep.	Upper middle income		
Iraq	Upper middle income		
Ireland	High income: OECD	0	21.5
Isle of Man	High income: nonOECD	0	
Israel	High income: OECD	0	
Italy	High income: OECD	10	10
Jamaica	Upper middle income		
Japan	High income: OECD	5	
Jordan	Upper middle income	16	4
Kazakhstan	Upper middle income	6	
Kenya	Lower middle income	12	
Kiribati	Lower middle income		
Korea, Dem. Rep.	Low income		
Korea, Rep.	High income: OECD	12	
Kosovo	Lower middle income		
Kuwait	High income: nonOECD		
Kyrgyz Republic	Lower middle income		4
Lao PDR	Lower middle income		

Latvia	High income: nonOECD	12	10
Lebanon	Upper middle income		
Lesotho	Lower middle income		
Liberia	Low income		
Libya	Upper middle income		
Liechtenstein	High income: nonOECD		
Lithuania	High income: nonOECD	5	5
Luxembourg	High income: OECD	3	3
Macao SAR, China	High income: nonOECD		
Macedonia, FYR	Upper middle income	5	
Madagascar	Low income		
Malawi	Low income		
Malaysia	Upper middle income		
Maldives	Upper middle income		
Mali	Low income		8
Malta	High income: nonOECD	0	0
Marshall Islands	Upper middle income		
Mauritania	Lower middle income		
Mauritius	Upper middle income	15	
Mexico	Upper middle income	16	
Micronesia, Fed. Sts.	Lower middle income		
Moldova	Lower middle income	8	
Monaco	High income: nonOECD		
Mongolia	Upper middle income		21
Montenegro	Upper middle income		
Morocco	Lower middle income	7	7
Mozambique	Low income		
Myanmar	Lower middle income		
Namibia	Upper middle income		
Nepal	Low income		
Netherlands	High income: OECD	15	6
New Caledonia	High income: nonOECD		
New Zealand	High income: OECD		
Nicaragua	Lower middle income		
Niger	Low income		
Nigeria	Lower middle income	0	6
Northern Mariana Islands	High income: nonOECD		

Norway	High income: OECD	25	25
Oman	High income: nonOECD		
Pakistan	Lower middle income	0	
Palau	Upper middle income		
Panama	Upper middle income	0	
Papua New Guinea	Lower middle income		
Paraguay	Upper middle income	5	
Peru	Upper middle income		34
Philippines	Lower middle income		12
Poland	High income: OECD	8	7
Portugal	High income: OECD	6	6
Puerto Rico	High income: nonOECD		
Qatar	High income: nonOECD		
Romania	Upper middle income	24	9
Russian Federation	High income: nonOECD	10	
Rwanda	Low income	18	
Samoa	Lower middle income		
San Marino	High income: nonOECD		
São Tomé and Príncipe	Lower middle income		
Saudi Arabia	High income: nonOECD		
Senegal	Lower middle income		
Serbia	Upper middle income		
Seychelles	High income: nonOECD		
Sierra Leone	Low income		
Singapore	High income: nonOECD	7	
Sint Maarten (Dutch part)	High income: nonOECD	5	
Slovak Republic	High income: OECD	10	10
Slovenia	High income: OECD	9	9
Solomon Islands	Lower middle income		
Somalia	Low income		
South Africa	Upper middle income		14
South Sudan	Low income		
Spain	High income: OECD	4	4
Sri Lanka	Lower middle income		
St. Kitts and Nevis	High income: nonOECD		
St. Lucia	Upper middle income		
St. Martin (French	High income: nonOECD		

part)			
St. Vincent and the Grenadines	Upper middle income		
Sudan	Lower middle income		
Suriname	Upper middle income		
Swaziland	Lower middle income		
Sweden	High income: OECD	0	0
Switzerland	High income: OECD	3	2
Syrian Arab Republic	Lower middle income		
Taiwan, China	High income: nonOECD		
Tajikistan	Lower middle income		25
Tanzania	Low income	9	
Thailand	Upper middle income	4	
Timor-Leste	Lower middle income		
Togo	Low income		
Tonga	Upper middle income		
Trinidad and Tobago	High income: nonOECD	0	
Tunisia	Upper middle income	6	6
Turkey	Upper middle income	8	8
Turkmenistan	Upper middle income		
Turks and Caicos Islands	High income: nonOECD		
Tuvalu	Upper middle income		
Uganda	Low income	0	
Ukraine	Lower middle income	0	
United Arab Emirates	High income: nonOECD		
United Kingdom	High income: OECD	0	0
United States	High income: OECD		
Uruguay	High income: nonOECD	10	
Uzbekistan	Lower middle income		
Vanuatu	Lower middle income		
Venezuela, RB	High income: nonOECD		
Vietnam	Lower middle income	5	
Virgin Islands (U.S.)	High income: nonOECD		
West Bank and Gaza	Lower middle income		5
Yemen, Rep.	Lower middle income		
Zambia	Lower middle income	0	
Zimbabwe	Low income	0	