

## Technical Appendix

### Data

This analysis is based on tariff data from UNCTAD TRAINS, downloaded from the World Integrated Trade Solution. The tariff data has been downloaded at the TARIC level (10-digit level) for 2018 (the most recent year available). Where the analysis includes AVEs, these are also downloaded from UNCTAD TRAINS, estimated using the UNCTAD method, as explained in a later section.

We use UK import data from HMRC Overseas Trade Statistics, downloaded at the 8-digit level for 2018. Most of our analysis is based on UK's imports from the group of countries which did not have any preferential trade agreement in place with the UK in 2018. This therefore excludes any imports from the EU, countries with Free Trade Agreements (FTAs), as well as countries that trade under the EU's GSP, GSP+ or EBA schemes.<sup>1</sup>

Since trade data is only available at the 8-digit level, we aggregate the tariff data from the 10-digit level to 8-digit level using an unweighted average. The basis for our analysis is thus the 8-digit level of aggregation, this is to enable us to calculate the change in weighted average tariffs, as well as analyse the share of imports and tariff revenue that would be affected by the changes. In reality the tariff simplifications proposed in the consultation will likely be done at the most detailed (10-digit) level, however conducting the analysis at the 8-digit level is unlikely to make any significant difference to the results.

In order to classify products according to the BEC classification we use a concordance supplied by Eurostat for conversion from the 8-digit level to the BEC.<sup>2</sup>

### Eliminating tariffs on intermediates – impact on nominal tariffs

The second item of consideration in the consultation document is whether tariffs should be eliminated on intermediate goods. Defining intermediate goods is not entirely straight forward. The consultation document suggests three possible sources for this:

- List of [tariff suspensions](#) that currently apply on inputs to production.
- List of goods that have applied for [Inward Processing](#).
- The [Broad Economic Categories](#) (BEC) list.

We deal with each of these lists below.

<sup>1</sup> Our analysis focuses on countries who trade solely on an MFN basis. However, it should be noted that in some cases, for example for countries trading under the GSP scheme, not all products are eligible for preferential tariffs and thus a proportion of UK's imports from these countries will fall under the MFN tariff.

<sup>2</sup> [https://ec.europa.eu/eurostat/ramon/other\\_documents/index.cfm?TargetUrl=DSP\\_OTHER\\_DOC\\_DTL#cn](https://ec.europa.eu/eurostat/ramon/other_documents/index.cfm?TargetUrl=DSP_OTHER_DOC_DTL#cn)

## ***Tariff Suspensions***

Tariff suspensions<sup>3</sup> within the EU are normally granted to raw materials, semi-finished goods or components that are not produced in the EU or where EU production is inadequate to meet demand and where it is therefore in the interests of the EU to suspend tariffs partially or totally.

Applications for tariff suspensions are submitted to a central office in each Member State, which is responsible for checking that all the necessary information has been given. Once the request has been transmitted to the Commission it is examined by the Commission with the aid of the opinion of the Economic Tariff Questions Group (ETQG).<sup>4</sup> Goods imported under the suspension list are released for free circulation throughout the European Union. No suspensions are granted for finished goods, and the tariff suspensions granted by the EU have designated dates for mandatory review with a view to establish whether the suspension is still needed.

The document published by the DIT contains a list of suggested tariff suspensions, covering just under 2,500 10-digit tariff lines (out of around 16,000 tariff lines at the 10-digit level), largely replicating the EU's list of tariff suspensions.<sup>5</sup> However, in contrast to EU's list, DIT's list does not have any review dates and it is not clear whether the tariff elimination would be temporary or permanent.

Setting all the products on the suspension list to zero would have only a very small impact on average tariff rates. This is largely because the items on the suspension list already have low tariffs. Only around 2% of the products on this list face MFN tariffs of over 10% and 23% of the items have tariffs of less than 5%.

Setting all the items on the suspension list to zero would imply a fall in the simple average MFN tariff (across all 8-digit products) to 7.4% (compared to 7.6% in the original MFN schedule). The weighted average would fall to 2.2% (from 2.5% in the original MFN schedule). Excluding non-ad-valorem tariffs, implementing the suspension list would reduce the simple average to 4.5% (from 4.7% in the original MFN schedule) and the weighted average to 1.8% (from 2.0% in the original schedule).

## ***Inward Processing***

The EU has a system of eliminating import duties and VAT on non-EU goods which are imported in order to be used in one or more processing operations within the EU. After the processing operations, the processed products can be either exported outside the EU, or released for free circulation in the EU. The latter would mean that import duties and taxes on the inputs must be paid. According to the EU Commission, out of €160 billion worth of EU motor vehicles exports in 2011, almost 43% (€69 billion) were produced under the inward-processing regime i.e. they were essentially cars assembled in Europe from parts and components imported from the rest of the world.<sup>6</sup>

There are some requirements to get authorisation for inward processing procedure.<sup>7</sup> These are:

<sup>3</sup> For more, see: [https://ec.europa.eu/taxation\\_customs/business/calculation-customs-duties/what-is-common-customs-tariff/suspensions\\_en](https://ec.europa.eu/taxation_customs/business/calculation-customs-duties/what-is-common-customs-tariff/suspensions_en)

<sup>4</sup> See Commission Communication concerning autonomous tariff suspensions and quotas (Official Journal C 363 of 13.12.2011, p. 6) <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2011:363:0006:0017:EN:PDF>

<sup>5</sup> There are 26 10-digit tariff lines on the EU's suspension list that are not recorded on the DIT's suspension list. Note also that out of the 2500 tariff lines on the suspension list, 379 are not matched with the tariff data for 2017-2018 downloaded from WITS.

<sup>6</sup> See: [https://ec.europa.eu/taxation\\_customs/inward-processing\\_en](https://ec.europa.eu/taxation_customs/inward-processing_en)

<sup>7</sup> [https://ec.europa.eu/taxation\\_customs/inward-processing\\_en](https://ec.europa.eu/taxation_customs/inward-processing_en)

- a. The business must be based in the customs territory of the Union. Non-EU bodies can only use IP for non-commercial imports.
- b. To provide necessary assurance of the proper conduct of the operations.
- c. To provide a guarantee where a customs debt or other charges may be incurred.
- d. To carry out processing operations on the goods or arrange them to be carried out.

The DIT's inward processing list contains 216 8-digit tariff lines. Setting these to zero makes very little difference to average tariff rates. This is because most products on the inward processing list have very low tariffs, indeed there are no products listed with tariffs above 10%. It is also worth noting that UK industry will already be benefitting from some of these suspensions.

### ***BEC categories***

A third alternative to identify intermediate goods is to use the United Nations Broad Economic Categories (BEC) classification.<sup>8</sup> This is a widely used international product classification, which categorises goods into broad categories based on detailed commodity classifications such as the Harmonised System (HS) and the Standard International Trade Classification (SITC). The BEC classifies goods by three main end-use categories: intermediate goods, consumption goods and capital goods. In addition, it has separate categories for motor spirits, passenger motor cars and a few small unclassified items, which are used extensively by both industry and households, and can therefore not easily be separated into intermediate or consumption goods.

Using the BEC to identify intermediate goods would be the broadest definition out of the three. Of the 9,500 8-digit tariff lines, just under 5,200 are classified as 'intermediates' according to the BEC classification. While BEC is very useful, and indeed used extensively, for statistical analysis of trade flows, it employs a rather broad definition of intermediates and it is therefore less clear how suitable it is as an instrument for defining intermediates for customs purposes, or for the purposes of the proposal in the consultation document. There is a significant overlap between the BEC and the suspension list: 2261 out of the 2457 10-digit tariff lines on the suspension list are classed as 'intermediates' in the BEC classification.

Setting all tariff lines defined as 'intermediates' to zero would reduce the simple average tariff to 4.6% (2.8% if all non-ad-valorem tariffs are excluded). The weighted average would fall to 1.7% (1.3% excluding non-ad-valorem tariffs). Tariffs would be eliminated on 76% of imports, compared to 50% under the original MFN schedule.

### ***All definitions of intermediates combined***

Table A.1 summarises the changes to average tariffs that would come from each definition of intermediate goods, as well as from all three definitions combined. The final row of the table gives the impact when the changes from the proposed tariff simplification (rounding down) are included on top of the changes to intermediate products. In each case, values are given both including non-ad-valorem tariffs and excluding these. All values are based on tariff and trade data for 2018, although little changes when using 2017 data.

<sup>8</sup> <https://unstats.un.org/unsd/trade/classifications/hec.asp>

Table A.1: Impact on average tariffs and trade from DIT's tariff proposal, applying changes to all UK's imports from 'MFN countries'

Scenario	Simple Average		Weighted Average		% of imports facing zero tariffs		Total tariff revenue	
	With AVEs	Without AVEs	With AVEs	Without AVEs	With AVEs	Without AVEs	With AVEs	Without AVEs
Current EU MFN tariff	7.6%	4.7%	2.5%	2.0%	50.4%	51.4%	3165.2	2580.0
Only suspension list	7.4%	4.5%	2.2%	1.8%	50.5%	51.4%	2848.7	2265.6
Only inward processing list	7.5%	4.6%	2.2%	1.8%	58.1%	59.2%	2871.2	2286.0
Only BEC	4.6%	2.8%	1.7%	1.3%	76.0%	77.3%	2182.5	1637.0
Zero on all intermediates	4.5%	2.8%	1.6%	1.2%	79.4%	80.7%	2039.5	1496.2
Rounding down + zero on all intermediates	4.0%	2.4%	1.3%	0.9%	84.5%	85.9%	1675.0	1176.5

N.B. Tariff data sourced from UN Comtrade at 10-digit (TARIC) level. 10-digit tariff lines have been aggregated into 8-digit codes using a simple average. Trade data sourced from HMRC's Overseas Trade Statistics at the CN 8-digit level. Both tariffs and trade data reported here are for 2018. Data categorised into BEC categories using Eurostat concordance tables from CN to BEC. 'AVE' refers to Ad-Valorem Equivalent tariffs

## Eliminating tariffs on intermediates – effective protection rate

We compute the effective protection rate (EPR) for two of the DIT proposed tariff schedules, and compare them with the EPR values under the current MFN tariff regime.

The EPR is a measure of the effect of the total tariff schedule on the value added of a particular industry, and represents the percentage increase in value added per unit given by the tariff structure, relative to the case with no tariffs. While the tariff applied to a specific product reflects only the protection on the final good produced, the EPR measures both the protection on the final good and on the intermediates used in its production. Indeed, if inputs are imported, a tariff on them would result in higher costs for final producer. By accounting for intermediate tariffs, we can compute an 'effective' protection rate.<sup>9</sup>

The main assumptions behind the construction of the EPR are that:

- The goods identified in the exercise are homogeneous, so that domestic supplies are perfect substitutes for international ones;
- the country is a small open economy facing an exogenous international price for each product and setting its internal prices as the sum of the world price and any tariff payable;
- trade occurs for every intermediate products;
- all products continue to be traded even in the presence of tariffs, and

<sup>9</sup> To our knowledge, the earliest reference is Corden, Warner Max. "The structure of a tariff system and the effective protective rate." *Journal of Political Economy* 74.3 (1966): 221-237.

- the production technology is not altered by the tariff schedule.

As an example, consider a shoemaker that can sell a pair of shoes (the final product) at £100 in the international market. To produce a pair of shoes he uses £50 worth of leather (the intermediate input). In absence of tariffs, the value added of the shoemaker is £100-£50 = £50. Now suppose that the tariff on shoes is 20% but there is no tariff on leather. Then the price of shoes in the domestic market will be £120. The domestic producer matches the foreign price and sell at £120, increasing his value added by £20. The effective protection rate is then 40% (20/50).

The EPR for industry  $j$  in the domestic market is computed as:

$$EPR_j^D = 100 * \frac{(t_j - \sum_i t_i a_{ij})}{1 - \sum_i a_{ij}}$$

Where  $t_j$  is the proportionate tariff on the final good  $j$ ,  $t_i$  is the tariff on the intermediate  $i$ ,  $a_{ij}$  is the share of intermediate  $i$  in costs of  $j$  and  $D$  stands for domestic. The  $t$  terms represent the tariff rate (e.g., for a 10% tariff  $t = 0.1$ ) for both final and intermediates. In this way, if the tariff on both final and intermediates is zero we have  $t_j = t_i = 0$  and the domestic EPR = 0, i.e. there is no protection. On the other hand, if there are no tariffs on intermediates ( $t_i = 0$ ) but positive tariffs on final goods, the EPR > 0 and the sector enjoys some protection. The term in the denominator ( $1 - \sum_i a_{ij}$ ) is the value added of the final product in absence of tariffs, while  $(t_j - \sum_i t_i a_{ij})$  is the value added at domestic prices, which are inclusive tariffs. Note that tariffs on final products increase the EPR as they protect the domestic market, while tariffs on intermediates reduce the EPR, as they represent a cost for producers.

We can also compute the EPR in the export market as:

$$EPR_j^X = 100 * \frac{-\sum_i t_i a_{ij}}{1 - \sum_i a_{ij}}$$

For the exporter EPR, a positive tariff on intermediates reduces the profits of domestic producers (which face world price in the foreign market). Hence, if  $t_i > 0$  the EPR is negative and exporters' profits (or some other element of value added such as the wages they pay) are reduced by domestic tariffs on intermediates.

Data for the  $a_{ij}$  coefficients come from the ONS 2015 Input-Output Analytical Tables.<sup>10</sup> This is done on SIC2007 goods sectors 1-32 as in the ONS IO table, which allows us to identify 46 separate sectors – this is because some sectors are disaggregated at the three digit level. The tariff data come from UNCTAD TRAINS for 2018 at the HS 10-digit level (TARIC level). We have adjusted this data to reflect the proposals of the tariff consultation. In particular, we considered two different versions of the proposed tariff schedule:

<sup>10</sup> Available at: <https://www.ons.gov.uk/economy/nationalaccounts/supplyandusetables/datasets/ukinputoutputanalyticaltables/detailed>

1. Rounding down of tariffs as per DIT's suggestion, applied to both  $t_j$  and  $t_i$
2. Same as 1 but setting the tariff  $t_i = 0$  for BEC intermediates.

We compute both simple and weighted average tariffs for the outputs of each of the 46 sectors, where the weighted average is based on UK's imports from the group of countries which currently have no preferential trade agreement in place with the UK (i.e. countries currently facing the EU's MFN tariff). The trade data was sourced from HMRC's Overseas Trade Statistics at the CN8-digit level. We classify the tariff data into BEC categories using a Eurostat conversion key from CN8 to BEC.

To convert the data into SIC07 categories we first aggregate the data to HS 6-digit level, and then convert this to ISIC4 categories using the OECD's Bilateral Trade in Goods by Industry and End-Use conversion key. SIC07 and ISIC4 are closely related, indeed the first two digits of ISIC4 and SIC07 are identical. As a final step we utilise a Eurostat conversion key from ISIC4 to NACE rev. 2 (which is identical to SIC07 up to the four-digit level).<sup>11</sup>

For each version of the tariff schedule we compute the EPR both for the current EU MFN tariff and the DIT proposed tariff, which then allow for a consideration of their difference in percentage points:

$$\Delta EPR_j = EPR_j^{DIT} - EPR_j^{MFN}$$

A  $\Delta EPR_j > 0$  means that protection increased, while a  $\Delta EPR_j < 0$  means that protection decreases.

## Results

Table A.2 reports summary statistics of the domestic EPR. Version v1 does not set BEC intermediates to zero in the computation of tariffs while v2 does. Note that for the MFN values there is no difference between v1 and v2. The row for MFN v2 it is left in just to ease comparisons.

The tariff schedule proposed by the DIT lowers the average EPR for domestic producers, increases the minimum (which is negative, hence reducing the disadvantage of domestic producers in foreign markets), and reduces the maximum. To interpret the table, whereas the current MFN tariff schedule has the effect of increasing the mean value added in UK industry by 3.73% (weighted average tariff), the DIT tariff with intermediate tariffs set to zero reduces it to 3.27%

Table A.2: summary statistics EPR domestic, %

Tariff	Version	Mean		Min		Max	
		Simple	Weighted	Simple	Weighted	Simple	Weighted
DIT	v1	3.20	3.01	-0.33	-0.92	15.87	15.14
MFN	v1	3.94	3.73	-0.50	-0.73	17.18	16.62
DIT	v2	3.57	3.27	-0.15	-0.15	16.22	15.50

<sup>11</sup> Concordance table available at:

[https://ec.europa.eu/eurostat/ramon/reasons/index.cfm?TargetUrl=LIST\\_LINK&StrNomRelCode=NACE%20REV.%202020-%20ISIC%20REV.%204&StrLanguageCode=EN](https://ec.europa.eu/eurostat/ramon/reasons/index.cfm?TargetUrl=LIST_LINK&StrNomRelCode=NACE%20REV.%202020-%20ISIC%20REV.%204&StrLanguageCode=EN)

Tariff	Version	Mean		Min		Max	
		Simple	Weighted	Simple	Weighted	Simple	Weighted
MFN	v2	3.94	3.73	-0.50	-0.73	17.18	16.62
DIT	v1	3.20	3.01	-0.33	-0.92	15.87	15.14
MFN	v1	3.94	3.73	-0.50	-0.73	17.18	16.62
DIT	v2	3.57	3.27	-0.15	-0.15	16.22	15.50
MFN	v2	3.94	3.73	-0.50	-0.73	17.18	16.62

Table A.3 reports summary statistics of the exporter EPR. The DIT schedule brings the exporters' EPRs closer to zero compared to the current MFN schedule. This is true for mean, min and max values of EPR. The reduction in intermediates tariffs (compared to the current MFN) increases the profits of UK producers in foreign markets.

Table A.3: summary statistics EPR exporter, %

Tariff	Version	Mean		Min		Max	
		Simple	Weighted	Simple	Weighted	Simple	Weighted
DIT	v1	-0.84	-0.87	-4.53	-7.03	-0.05	-0.05
MFN	v1	-1.00	-1.03	-5.11	-7.92	-0.06	-0.06
DIT	v2	-0.46	-0.61	-3.45	-6.68	-0.02	-0.01
MFN	v2	-1.00	-1.03	-5.11	-7.92	-0.06	-0.06
Tariff	Version	Mean		Min		Max	
		Simple	Weighted	Simple	Weighted	Simple	Weighted
DIT	v1	-0.84	-0.87	-4.53	-7.03	-0.05	-0.05
MFN	v1	-1.00	-1.03	-5.11	-7.92	-0.06	-0.06
DIT	v2	-0.46	-0.61	-3.45	-6.68	-0.02	-0.01
MFN	v2	-1.00	-1.03	-5.11	-7.92	-0.06	-0.06
Tariff	Version	Mean		Min		Max	
		Simple	Weighted	Simple	Weighted	Simple	Weighted
DIT	v1	-0.84	-0.87	-4.53	-7.03	-0.05	-0.05
MFN	v1	-1.00	-1.03	-5.11	-7.92	-0.06	-0.06
DIT	v2	-0.46	-0.61	-3.45	-6.68	-0.02	-0.01
MFN	v2	-1.00	-1.03	-5.11	-7.92	-0.06	-0.06

How many sectors see an increase in the domestic EPR? To compute this we count the sectors in which  $EPR^{MFN} < EPR^{DIT}$ . This yields:

Table A.4: Number of sectors with increased domestic protection

Tariff	Version	Count
Simple	v1	6
Simple	v2	14
Weighted	v1	8
Weighted	v2	15

Tariff	Version	Count
Simple	v1	6
Simple	v2	14
Weighted	v1	8
Weighted	v2	15

Note that for some of these cases the increase in protection comes from a reduction in the absolute size of a negative EPR. This is true for all six cases in version 1 using simple average and for seven of the eight sectors using weighted average in v1. On the other hand, version 2 sees a larger number of sectors with increased protection, and many of these have positive EPR. This is the result of intermediate tariffs falling faster than the final ones. Setting intermediate tariffs to zero increases the value added accrued by the final producer, which results in an increase in the effective protection.

On the other hand, the exporter EPR, which is always negative because there is no protection of the final good, always decreases in absolute terms – gets closer to zero. This is because all intermediates tariffs are unchanged or reduced in the proposed schedule.

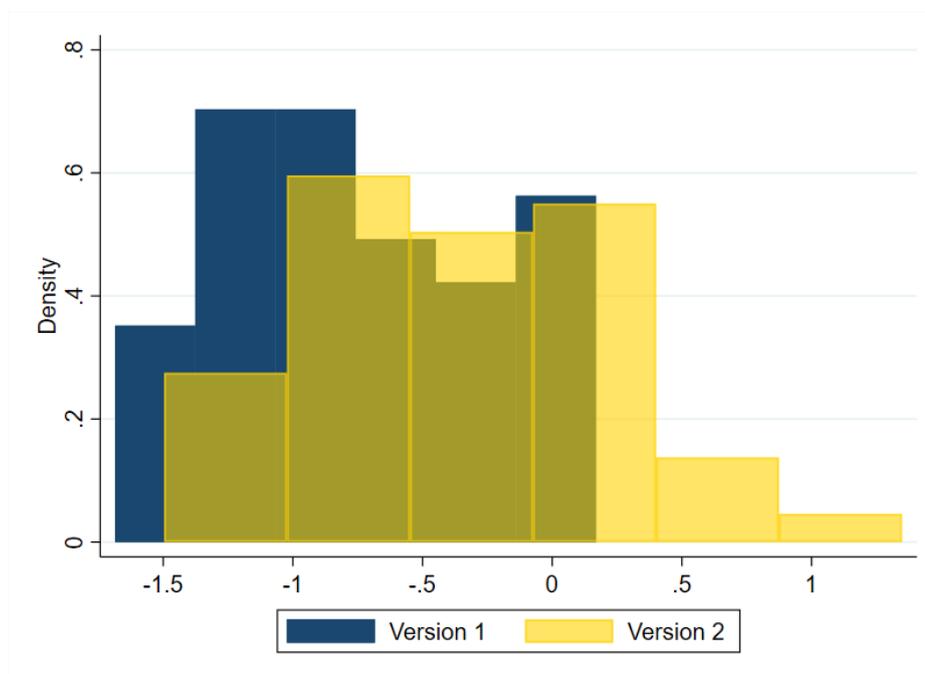
Figure A.1 and Figure A.2 plot the EPR under the DIT schedule (vertical axis) versus the ones under the current MFN (horizontal axis), together with the 45-degree line. Sectors appearing below the line see a reduction in EPR, while those above see an increase in protection.



In version 2, where we set the BEC intermediates tariffs to zero, the sector that gains in terms of protection is related to food processing (SIC 10). Other sectors that see an increase in protection are agriculture, fishing and mining (SIC 01-08), paper and printing (SIC 17-18), basic metals (SIC 24.1-3) and furniture (SIC 31).

Overall, changes in EPR appear to be small. Figure A.3 plots the histogram for changes in EPR,  $\Delta EPR$ , (which is measured in percentage points) for both version 1 (in blue) and version 2 (in yellow). This is done using the simple average tariff in the computation of EPR. The majority of the changes are negative although small. Under version 2, for which BEC intermediates tariffs are set to zero, the number of sectors that see an increase in protection rises compared to version 1.

Figure A.3: Distribution of changes in EPR (pp), simple average



On the other hand, when we use the weighted average tariff in computing EPR, the histogram appears more skewed to the right, with a larger portion of changes close to zero. At the same time, the largest reduction in EPR increases compared to the simple average computation (from -1.7pp to -3.0pp).

Figure A.4: Distribution of changes in EPR (pp), weighted average

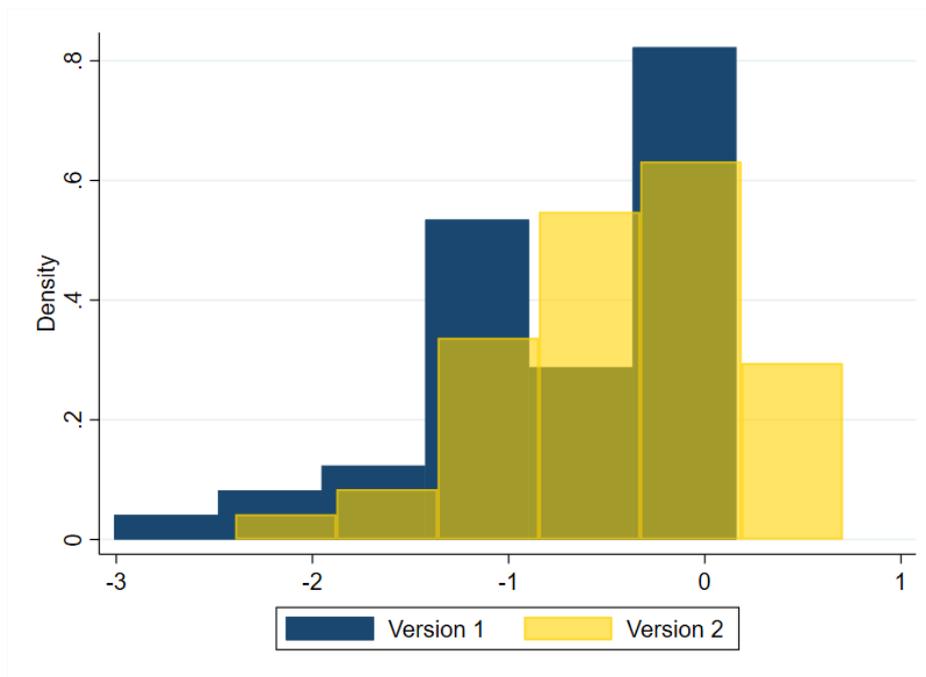


Table A.5: List of sectors codes and names and sample results.  
The change in effective protection under different scenarios<sup>a</sup>

code	description	$\Delta E$	$\Delta E$	$\Delta E$	$\Delta E$
		RP 1W D <sup>a</sup>	RP 1W X	RP 2W D	RP 2W X
01	Products of agriculture, hunting and related services	-0.5	0.2	-0.3	0.4
02	Products of forestry, logging and related services	-0.1	0.1	0.1	0.2
03	Fish and other fishing products; aquaculture products; support services to fishing	-0.2	0.1	-0.1	0.2
05	Coal and lignite	0.2	0.2	0.3	0.3
06&07	Extraction Of Crude Petroleum And Natural Gas & Mining Of Metal Ores	0.0	0.0	0.0	0.0
08	Other mining and quarrying products	0.1	0.1	0.1	0.1
09	Mining support services	-1.5	0.9	-1.1	1.2
10.1	Preserved meat and meat products	-0.9	0.3	-0.7	0.6
10.2-3	Processed and preserved fish, crustaceans, molluscs, fruit and vegetables	-0.1	0.2	0.2	0.5
10.4	Vegetable and animal oils and fats	-2.3	0.8	-0.6	2.5
10.5	Dairy products	0.0	0.2	0.5	0.7
10.6	Grain mill products, starches and starch products	-1.2	0.2	-0.5	0.9
10.7	Bakery and farinaceous products	-0.3	0.2	0.0	0.5
10.8	Other food products	-0.2	0.3	0.7	1.2
10.9	Prepared animal feeds	-0.4	0.1	-0.2	0.3
11.01-6 and 12	Alcoholic beverages & Tobacco products	-3.0	0.5	-2.4	1.1
11.07	Soft drinks	-1.3	0.1	-1.2	0.2
13	Textiles	-1.9	0.2	-1.7	0.4
14	Wearing apparel	-1.4	0.1	-1.3	0.2
15	Leather and related products	-0.4	0.2	-0.1	0.5
16	Wood and of products of wood and cork, except furniture; articles of straw and plaiting materials	0.0	0.0	0.2	0.2
17	Paper and paper products	0.1	0.1	0.2	0.2
18	Printing and recording services	0.0	0.0	0.0	0.1
19	Coke and refined petroleum products	-1.0	0.1	-0.8	0.3
20A	Industrial gases, inorganics and fertilisers (all inorganic chemicals) - 20.11/13/15	-1.2	0.2	-0.5	0.8
20B	Petrochemicals - 20.14/16/17/60	-0.9	0.1	-0.7	0.2
20C	Dyestuffs, agro-chemicals - 20.12/20	-1.1	0.1	-0.8	0.4
20.3	Paints, varnishes and similar coatings, printing ink and mastics	-0.2	0.1	-0.1	0.3
20.4	Soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations	-0.8	0.1	-0.7	0.2
20.5	Other chemical products	0.0	0.0	0.0	0.0
21	Basic pharmaceutical products and pharmaceutical preparations	-1.5	0.1	-1.2	0.4
22	Rubber and plastic products	-1.0	0.1	-0.8	0.2
23OTHER	Glass, refractory, clay, other porcelain and ceramic, stone and abrasive products - 23.1-4/7-9	-2.0	0.2	-1.8	0.4
23.5-6	Cement, lime, plaster and articles of concrete, cement and plaster	0.1	0.1	0.2	0.2
24.1-3	Basic iron and steel	-0.1	0.0	0.0	0.1
24.4-5	Other basic metals and casting	-0.7	0.1	-0.6	0.2

25	OTHER	Fabricated metal products, excl. machinery and equipment and weapons & ammunition - 25.1-3/25.5-9	-0.9	0.2	-0.8	0.3
25.4		Weapons and ammunition	-0.1	0.1	0.0	0.2
26		Computer, electronic and optical products	-1.2	0.1	-0.9	0.4
27		Electrical equipment	-1.3	0.1	-1.1	0.3
28		Machinery and equipment n.e.c.	-0.9	0.1	-0.7	0.4
29		Motor vehicles, trailers and semi-trailers	-1.1	0.1	-1.1	0.1
30.1		Ships and boats	0.1	0.2	0.5	0.6
30.3		Air and spacecraft and related machinery	-1.0	0.1	-0.9	0.2
30	OTHER	Other transport equipment - 30.2/4/9	0.0	0.2	0.3	0.5
31		Furniture	-0.9	0.1	-0.7	0.3
32		Other manufactured goods	-0.5	0.2	-0.3	0.4

a) In labelling the scenarios, 1 refers to version, W to weighted tariffs, D to the domestic market and X to the export market. See text for details.

## Impact of the proposals on consumer prices

### *Eliminating tariffs on items where there is no domestic production.*

One of the elements of the DIT's proposal is whether or not to set tariffs to zero where there is no, or very limited, UK production.

The inward processing list discussed above is used partly for this purpose, where EU importers can apply for tariff suspensions on goods where there is insufficient EU production to meet the demand for a certain raw material or intermediate. Other than using this list, it is not straight forward to identify goods with zero UK production. To make precise estimates one would need detailed production data for all industries of the economy, but such data is unfortunately not easy to come by.

One alternative way of identifying such goods is by using UK export data as a proxy, whereby any goods where UK exports are zero could be interpreted as having no UK production.

At the 8-digit level, there are 169 goods (out of around 9,500 goods in total) where the UK had no exports in 2016-2018. Such goods include live buffalos, single cotton yarn and sea cucumbers. In these cases it seems relatively safe to assume that there is no UK domestic production.

However, in other cases it could be the case that there is UK production, but only serving the UK market, and therefore not reflected in export statistics. Thus, looking purely at goods with zero exports may be an overstatement in the sense that it may capture goods produced in the UK but only for the domestic market. Equally, for some products it may be the case that there is no UK production, but the UK still reports some positive exports due to re-exports. One such example may be the exports of live camels, of which the UK reported

exports worth £57,000 in 2016. It seems unlikely that these camels truly originated in the UK. Thus, looking only at exports may understate the number of products with zero production, to the extent that export statistics reflect re-exports.

To partly correct for the issue of re-exports, in this analysis we supplement the data on exports with agricultural production data from FAOSTAT.<sup>12</sup> FAOSTAT reports detailed production data for crops, processed crops, live animals and primary and processed livestock. We use the most recent production data available in FAOSTAT which reports production data up until 2017, and convert this to HS 6-digit codes using the FAOSTAT concordance table.<sup>13</sup>

In total there are 165 HS 6-digit agricultural products for which FAOSTAT reports zero UK production. These include, for example, citrus and exotic fruits, live mammals such as camels and primates, coffee, tea and spices such as coriander and saffron.<sup>14</sup> As can be expected, there is some overlap between the zero export list and the zero production list, and so overall we identify 223 6-digit sectors where either exports are zero, or production is zero according to FAOSTAT. In some cases tariffs are relatively high on these goods. For example, the UK reports no exports of cuts of goat meat with bones (02045031), which face a two-part tariff of 12.80% + 222.70 EUR / 100 kg. Similarly, FAOSTAT reports zero UK production for garlic (070320) which faces a tariff of 9.60% + 120.00 EUR / 100 kg.

We do not report the effects of this tariff elimination on average tariffs – it is very small - but when we come to consider the effects on consumer prices we will take this reform into account.

It should be noted that while eliminating tariffs on products which the UK doesn't produce might intuitively make sense one should take into account the impact that this might have on developing countries. Many of the agricultural products which the UK does not produce are imported from developing countries (think of bananas, tea, or coffee). Most developing countries benefit from preferential access to the UK market through the Generalised System of Preferences (GSP) or Everything But Arms (EBA) schemes. The tariff preferences are in place to help poorer countries compete against richer ones. Eliminating tariffs on e.g. bananas or coffee for all countries would erode the preferences that the developing countries currently benefit from, which could be detrimental to these countries.

### ***Non-Ad-Valorem tariffs***

Roughly 12% of all 10-digit tariff lines are so-called non-ad-valorem tariffs. These tariffs are not measured in percentage terms but rather levy a fixed charge per unit of a good (such as the EU's tariff on dried sugar beet of 23 EUR per 100 kg or). Some goods also face a two-part tariff, combining both an ad valorem tariff and a specific tariff (such as the tariff on goat meat (02045031), which face a two-part tariff of 12.80% + 222.70 EUR / 100 kg). The percentage burden of a specific tariff therefore depends on the price the importer pays for the good, which may vary across time and across countries. Methods have been developed for estimating the ad- valorem equivalent (AVE) (i.e. percentage rates) of such specific

<sup>12</sup> <http://www.fao.org/faostat/en/#data>

<sup>13</sup> <http://www.fao.org/economic/ess/ess-standards/commodity/en/>

<sup>14</sup> 8 HS 6-digit codes which report zero production data have been excluded due to inconsistencies in the production and export data. These are HS 010690, 020130, 020230, 020680, 020690, 040310, 040390, 040590.

tariffs. In this analysis we use AVEs estimated by UNCTAD.

UNCTAD estimates unit-values from tariff line import statistics of the HS 6-digit import statistics of all OECD countries. Once a unit value is estimated, then it is used for all types of rates (MFN, preferential rates, etc). This gives unique unit values for each product common to all importing countries and all types of rates. It also preserves the margin of preference in the preferential rates.<sup>15</sup>

Since the AVEs are a function of the unit price, which can vary considerably from year to year, the percentage equivalent of non-ad-valorem varies likewise. For example, the EU's MFN tariff on item 2205901000 - Vermouth and other wine of fresh grapes is 9 EUR per 100 l has an estimated AVE tariff of 8.4% in 2017, but 46.1% in 2018. Similarly, the tariff on item 0403903900 – certain types of buttermilk, curdled milk and cream is 1.620 EUR/kg/lactic matter + 22 EUR/100 kg. This represented an AVE tariff of 152.2% in 2017, but 136.2% in 2018.

Accounting for specific tariffs is important as these are typically among the highest tariffs facing importers. Indeed, at the 10-digit level the 125 products with the highest EU MFN tariffs in 2018 were all non-ad-valorem tariffs. Looking only at the AVEs of the non-ad-valorem tariffs, the average tariff was 34% in 2018, compared with a mean of 4.7% on the ad-valorem products.

While converting the current non-ad-valorem tariffs to percentage terms would likely be helpful for importers and exporters, as has been illustrated here, since AVEs tend to change from year to year it will be a difficult task to decide at which level the percentage rates should be set if the aim is to maintain an equivalent rate of protection as that which these industries enjoy currently.

### ***The impact on consumer prices***

What would these changes imply for consumer prices? In this section we estimate the approximate impact on final consumer prices from the changes in tariffs discussed above. Before delving further, however, a few caveats are needed:

1. Our analysis only looks at the impact on *final* consumer goods, and excludes any intermediate goods. Thus, while prices of intermediate goods could potentially impact the prices of final goods, this interlinkage effect is not included here.
2. We assume that trade patterns remain unchanged in the face of the changes in tariffs. Thus, we assume that the proportion that the UK imports from e.g. the EU, remains unchanged from actual values in 2018. Large changes in tariffs could of course make consumers substitute between suppliers, but, as discussed above, the tariff changes under consideration are mostly very small.
3. Due to limited data availability, and since the UK's future TRQ rates are yet to be established, we are unable to adjust our calculations for the existence of Tariff Rate Quotas (TRQs). TRQs allow a given volume of imports from a source country in at low tariff rates (usually zero) and then apply the regular MFN tariff to imports

<sup>15</sup> See Box 2.1 (p.65) here [https://www.wto.org/english/res\\_e/publications\\_e/wto\\_unctad12\\_e.pdf](https://www.wto.org/english/res_e/publications_e/wto_unctad12_e.pdf)

beyond that limit. Quite what effect this has on the average price of the imports from that source is uncertain, but our inability to analyse TRQs could lead us to over-estimate the effects of the tariff reforms on overall prices. If, for example, the imports allowed in duty-free are sold in the UK at duty-free prices, they would be insensitive to the tariff charged ‘out of quota’. In some cases, e.g. imports of sheep-meat from New Zealand, the entire EU import flow is within the TRQ and thus attracts zero tariffs. In that case, rounding the MFN tariff rate has no effect.

We consider two aspects of the tariff consultation that would impact directly on final prices:

- 1) Rounding down of tariffs according to their tariff bracket.
- 2) Setting tariffs on products with no UK production to zero.

To capture the impact of the non-ad-valorem tariffs (which, as discussed, are some of the highest) we include the AVEs for non-ad-valorem tariffs, and round these down in the same way as we do for the ad-valorem tariffs.

Tariff and import data is collected for the following trade partners:

- EU27
- The group of ‘continuity countries’ for which a roll-over agreement has been agreed<sup>16</sup>
- Countries under the EU’s EBA/GSP/GSP+ schemes
- Rest of the world

The tariff data has been sourced from UNCTAD TRAINS (through WITS) and the trade data is from UN Comtrade (also through WITS). All values are downloaded at the HS 6-digit level for 2018. We identify ‘final goods’ as those defined as consumer goods in the BEC classification, as well as motor fuel and automotive products.<sup>17</sup> Finally, we convert the data into ISIC4 sectors using the OECD’s Bilateral Trade in Goods by Industry and End-Use conversion key. Overall this gives us 81 ISIC4 sectors, covering 8 agricultural sectors and 73 manufacturing sectors.

For the calculations, we reconcile the trade and tariff data with data on production. The production data was further adjusted to capture the size of domestic sales (i.e. home consumption of home production).<sup>18</sup> This enables us to calculate the import penetration ( $s$ ) for each sector ( $x$ ):

$$S_x = \frac{M_x}{C_x}$$

Where M denotes total UK imports and C total UK consumption of sector x. We have this

<sup>16</sup> For an updated list of the continuity agreements see <https://www.gov.uk/guidance/uk-trade-agreements-with-non-eu-countries>. At the time of writing continuity agreements have been signed with 49 countries.

<sup>17</sup> We merge our HS 6-digit data with BEC using a concordance table downloaded from the World Integrated Trade Solution (WITS).

<sup>18</sup> For further details on how the production-trade-tariff dataset was composed see <https://blogs.sussex.ac.uk/uktpo/files/2018/02/18-02-13-BP16Appendix-revised.pdf>

data for UK's total consumption and total imports in each ISIC4 sector, and we assume that this ratio remains unchanged when looking at only final goods.

Further, for each product, we calculate the shares of each supplier in total imports ( $v_i$ ):

$$v_{i,x} = \frac{m_{i,x}}{M_x}$$

where  $m_{i,x}$  is the UK's imports from partner  $i$  of sector  $x$ .

We assume that products are differentiated by place of production. With heterogeneous goods the overall price of category  $x$  will be a weighted average of the domestic price (assumed to be, to a first approximation, unchanged), the affected import price and other import prices. To calculate consumer prices we thus calculate the price of imports as  $p_{world} * (1 + t_i)$  for each partner, where we set  $p_{world}$  to 1, and then weight together, using  $s_x$  and  $v_{i,x}$ , with domestic prices, which we also set =1.<sup>19</sup>

Thus, assuming  $p_{world}=1$ , the consumer price for sector  $x$  is calculated by:

$$P_x = [s_x * \sum((1 + t_{i,x}) * v_{i,x})] + (1 - s_x)$$

The first term gives the impact on the consumer price in sector  $x$  from the import partners, and the last term  $(1-s_x)$  gives the impact on the price from domestic production (where price is set to 1).

This calculation is done before and after the changes implied by the tariff consultation, after which the percentage change in consumer prices is calculated. Thus, we look at the impact of applying the proposed tariffs on imports from 'MFN countries' compared with applying the current MFN tariffs on these countries. We assume tariffs remain unchanged for all other trade partners.

Our calculations indicate that the impact on final consumer prices would be small. The average change in prices across the 81 ISIC4 sectors is -0.24%. The largest changes are in citrus fruit (-1.28%) and tropical fruits (-1.17%), this is largely driven by the fact that UK has close to zero production of these products, and tariffs have therefore been set to zero.

Multiplying the price change in each sector by its share of total consumption across the 81 sectors, and summing across all sectors gives an approximation to the aggregate effect of the tariff proposal on consumer-good prices. Overall, rounding down tariffs and eliminating tariffs on zero production goods, reduces consumer goods prices by around -0.15%. Of course, consumers in the UK spend only around 40% of their money on goods as opposed to services and so the effect of these tariff reforms on the cost of living is about 0.06% (= 0.4 \* 0.15%).

It is important to remember that this exercise is only an approximation. Unlike in Clarke,

<sup>19</sup> Note that this is a very different assumption from the one adopted in the companion exercise on effective protection. The two should not be combined.

Serwicka and Winters<sup>20</sup>, we have worked with industry level data rather than consumption data and we have made no allowance for changes in the pattern of consumption arising from the tariff changes. Nonetheless, for the small changes considered, the approximation does not seem to be seriously misleading.

## Tariffs and variety

The most important points here are:

- that variety is much more dependent on regulations etc. than on tariff levels
- that reductions in tariffs could either lead to a decrease or an increase in variety
- that the reforms that the government has suggested for discussion are too small to have significant effects overall.

Having said that, however, there is always a chance that the tariff reform – especially if it is to reform and then reduce one of the large specific duties – could be sufficient to trigger a variety effect in a specific case.

A large tariff could exclude a foreign variety of a good and even, by so reducing competition, lead domestic producers to offer a more limited menu of varieties. Undoing these effects via a tariff reduction could have beneficial effects, if any. However, it is equally possible that a domestic variety of a good is kept afloat by tariff protection and that a reduction sinks it altogether. This is the sort of argument that is advanced for ‘infant industries’ – the need to provide protection in order to allow a sector (firm) to establish itself. (The argument is not implausible, but experience suggests that it is rarely true.). It also, more plausibly, might be relevant to efforts to slow the decline of a senescent industry. Any analysis of this sort is necessarily case-specific.

At a more general level, economists have models of differentiated product markets in which the number of varieties of a type of good is endogenous. In the simplest of these – Krugman (1980) – the number of firms (varieties) is determined by the size of the market and the fixed costs of providing an additional variety. Holding the latter constant if previously completely separate economies are joined together by engaging in perfectly free trade, the overall economy size goes up and with it variety. Import competition reduces prices in each country, driving some firms (varieties) out of business. However, while opening trade up has the effect of reducing the number of producers in each country, the fact that consumers can now benefit from purchasing from two supplying countries means that the net effect is to increase available variety.

The real world is more complex than this in two critical dimensions. First, we are dealing with finite tariffs that are changed only slightly, so rather moving from autarchy to free trade, we are moving from a slightly more to a slightly less distorting trade policy, and this ignores any (second-best) considerations about how tariffs may interact with other policies and frictions in the economy. Nonetheless, the tendency for trade to encourage variety seems likely to prevail. Second, the UK and the rest of the world are highly asymmetric.

<sup>20</sup> Stephen Clarke, Ilona Serwicka and L. Alan Winters (2017) *Changing Lanes The impact of different post-Brexit trading policies on the cost of living*, The Resolution Foundation and UKTPO.  
<https://blogs.sussex.ac.uk/uktpo/files/2017/10/Changing-Lanes.pdf>

Accounting for a little over 2% of world income, even a major liberalisation seems unlikely to affect the number of varieties that the world produces materially.

Overall, therefore, despite the theoretical models the most plausible conclusion is a small UK liberalisation is unlikely to have much effect on the variety of products available in the UK.

### **Tariffs and quality**

The discussion so far has treated varieties symmetrically, not distinguishing them by any specific characteristic. However, a question does arise as to whether the tariff (or its reform) offers more encouragement to 'low' or 'high' quality varieties. There are many ways to define quality, which we will not enter into, but we may observe that varieties generally held to be 'better' are almost invariably more expensive. This may reflect their excess costs of production or just their branding which makes demand less price sensitive and hence offers more scope for sellers to ease up their prices.

This observation provides a direct link to tariff policy. Economists generally assume that demand is a function of relative prices – the ratio of, say, the price of a 'low' quality variety (PL) to that of a 'high' one (PH) – viz PL/PH. If both high and low quality varieties face the same percentage tariff ( $t\%$ ), ceteris paribus, the price of each will rise by  $t\%$ , leaving the relative price, and hence relative demand, unchanged. Now, however, suppose that as with many UK tariffs on foodstuffs, the tariff is a specific one, i.e.  $\pounds x$  per unit, and that again this is passed straight onto consumers.  $\pounds x$  is a larger percentage of PL than of PH and so the low quality variety becomes relatively more expensive and demand for it is likely to be suppressed. There is ample evidence of this sort of effect, although mostly in the cases of quantitative restrictions (quotas), which are equivalent to specific duties.

The tariff consultation is not clear about the future of specific duties on foodstuffs, but if they were converted to regular percentage (ad valorem) tariffs, we would expect that to increase demand for lower priced varieties. Given that some of these tariffs are large the effect might be to create markets for lower-priced varieties that were previously rendered uneconomic by the tariff. This process might appear to be generating an undesirable decline in average quality, but by opening markets up for poorer consumers it could be of great social significance.

### **Tariffs and Environmental Goods**

There is no accepted definition of environmental goods, although several attempts have been made at reaching a consensus on the matter. This document lists some of the attempts at defining environmental goods, and gives information on the EU's current MFN tariffs, and the share of UK's total imports, of the goods defined in the various lists. Unless otherwise stated, all tariff and trade data refers to 2018.

Overall, across all the different environmental goods (EGs) lists analysed here, EU's MFN tariffs are already very low, and the vast majority of the non-zero tariffs would be zero under DIT's proposals (e.g. round down tariffs or setting tariffs on intermediates to zero). Further, the UK's imports of the different EGs tend to account for a rather small share of UK's total

imports, so it seems unlikely that removing tariffs on EGs would have any significant impact on UK imports.

One of the reasons why negotiators struggled to make progress in defining environmental goods at a plurilateral level is that, even at the HS 6-digit level (the most disaggregated classification which is standardised internationally) many HS 6-digit products have dual-use, and thus there is a need to drill down further, to the 8-digit or 10-digit level, to precisely identify true environmentally friendly goods. While this was not possible at a plurilateral level, there is perhaps an opportunity for the UK to do so unilaterally.

Table A.6 gives an overview of three different lists of environmental goods. These (and more) are discussed below.

**Table A.6: Selection of environmental goods lists**

Variable	WTO 411-list (Doha Round)	WTO EGA list	CLEG*
Number of HS 6-dig products	411	265	255
% of total UK imports in 2018	27.0%	9.8%	7.5%
% of total UK exports in 2018	28.9%	10.7%	8.3%
EU Simple Average MFN tariff	2.9%	2.0%	2.3%
Share of 6-dig tariff lines:			
.. already 0% MFN tariffs	18.0%	25.3%	15.7%
.. <=2.5% MFN tariffs	38.0%	41.9%	47.1%
.. intermediate products	21.7%	20.0%	18.8%

\* The original list contains 248 products, but converted to HS2012 the number of products increase to 255

### **Early WTO proposals during Doha Round**

Under the 2008 work programme of the Committee on Trade and Environment in Special Session (CTESS) at the WTO, member states were invited to identify environmental goods of interest to them across as many categories as possible. Thirteen countries participated in the submission process resulting in six lists with a varying number of products included<sup>21</sup>:

- Saudi Arabia (262 HS 6-dig codes)
- Japan (57 HS 6-dig codes)
- Philippines (17 HS 6-dig codes)
- Qatar (20 HS 6-dig codes)
- Singapore (72 HS 6-dig codes)
- Group of nine ‘Friends’<sup>22</sup> (164 HS 6-dig codes)

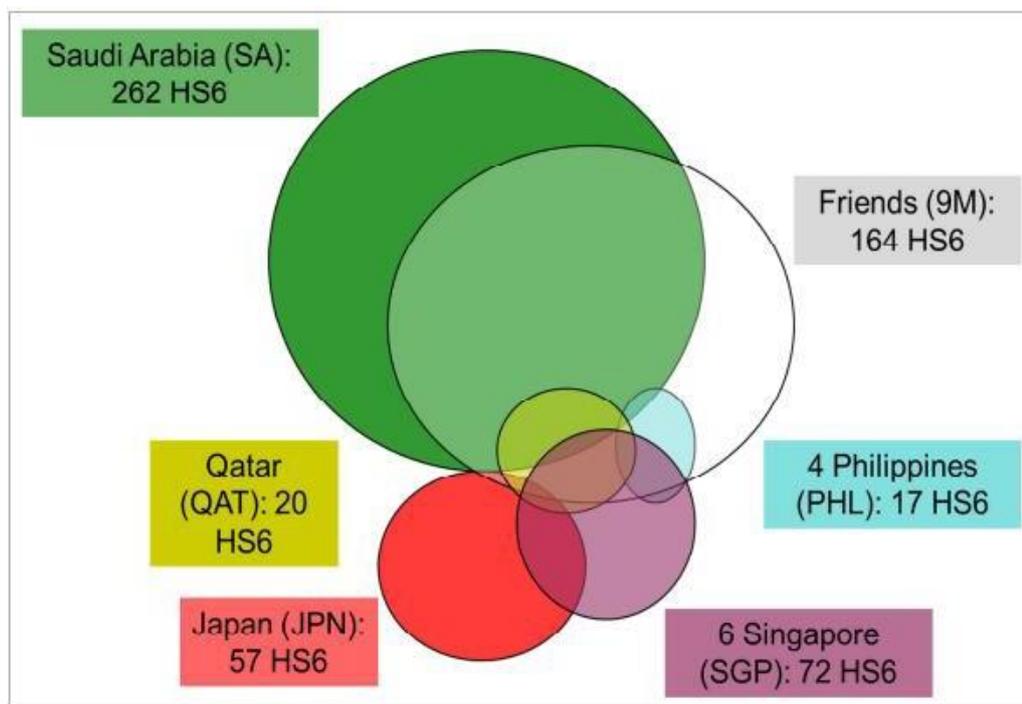
The overlap between the lists was small, as Figure A.5 below illustrates. Removing any

<sup>21</sup> Balineau and De Melo (2013) document the process for removing tariffs on environmental goods during the Doha Round: [https://www.cambridge.org/core/services/aop-cambridge-core/content/view/8AC2A282E45B01B5A13EC01E130E9232/S1474745613000074a.pdf/removing\\_barriers\\_to\\_trade\\_on\\_environmental\\_goods\\_an\\_appraisal.pdf](https://www.cambridge.org/core/services/aop-cambridge-core/content/view/8AC2A282E45B01B5A13EC01E130E9232/S1474745613000074a.pdf/removing_barriers_to_trade_on_environmental_goods_an_appraisal.pdf)

<sup>22</sup> The ‘friends’ group includes Canada, the EU, Japan, Korea, New Zealand, Norway, Taiwan, Switzerland and the USA.

duplicates, the six lists together identified 411 HS 6-digit products as potential ‘environmental goods’. Note that the scope of the lists are relatively broad and includes, for example, a range of motor vehicles.

**Figure A.5: Overlaps of proposals to the WTO of environmental goods**



Source: Balineau, G., and De Melo, J., (2013), “Removing Barriers to Trade on Environmental Goods: An Appraisal”, *World Trade Review*, Volume 12, Issue 4, pp. 693-718

Overall, EU MFN tariffs on these goods are already low. The simple average tariff across all the 411 goods is 2.9%. 74 tariff lines (18%) are already zero, and a further 156 products (38%) have MFN tariffs of 2.5% or less (and would thus be rounded down to zero under DIT’s proposal). A further 88 tariff lines are categorised as BEC intermediates, and one tariff line falls under the inward processing list, these would be zero under DIT’s proposal on intermediate tariffs.

All in all, over 77% of the 411 tariff lines are either already zero, or would be zero under DIT’s proposals.<sup>23</sup> Of the remaining products, the highest tariffs are on motor vehicle products (which make up 29% of the remaining tariff lines), as well as on e.g. colour video monitors, projectors and recording or reproducing apparatus. Due to its broad scope, the products on this list account for 27% of UK’s total imports.

In the end, it proved too difficult to reach an agreement, largely because member states had very different views on how to define environmental goods, as evidenced by the low degree of overlap between the six proposed lists.

<sup>23</sup> Note also that no tariff data is reported in 2017/2018 for 14 of the 411 products.

### **APEC list**

In 2011, APEC launched an initiative that sought to cut tariffs on environmental goods. In 2012 a list of 54 goods was endorsed, for which tariffs were to be cut to 5% of less by the end of 2015.

Most of the 6-digit headings fall into three categories:

- 7.1 Renewable energy production (27.8% of headings)
- 7.2 Environmental monitoring analysis and assessment equipment (27.8%); and
- 7.3 Management of solid and hazardous waste and recycling systems (22.2%).

This list is looked at in more detail in the section on the CLEG list (below).

### **WTO Environmental Goods Agreement (EGA)**

Building on the APEC initiative, the WTO initiated negotiations for an Environmental Goods Agreement in 2014. This was a plurilateral initiative by 46 WTO members, with the aim of agreeing a common list of environmental goods for which tariffs would be eliminated.

In 2016 a so-called ‘A list’ had been drawn up, covering about 300 goods. However, in the end no agreement was reached, partly because, at a late stage, China introduced a new list of 231 goods which was unacceptable to some of the other members.<sup>24</sup>

Since no agreement was reached, there exists no official list of the environmental goods defined under the EGA. The list used here is one which was circulated just before negotiations collapsed, covering 265 HS 6-digit codes in total.<sup>25</sup> 139 goods on the EGA list were also on the WTO’s combined 411 list discussed above.

The products on the EGA list account for under 10% of UK’s total imports. Further, the average tariff is very low: across all 265 goods the simple average tariff is 2.0%. Overall, 67% of the tariff lines are 2.5% or below, meaning they would be rounded down to zero under DIT’s proposal. Another 20% are defined as intermediates on the BEC list, and may therefore also be set to zero under DIT’s proposal. This leaves 34 6-digit tariff lines, where the average tariff is 3.5%.

### **Original OECD/EUROSTAT list (1999)**

Together with Eurostat, the OECD prepared a list of environmental goods for statistical use rather than for negotiation purposes.<sup>26</sup> The aim was to define a list of environmental goods such that estimates of the importance of environmental goods trade could be determined.

Because this list was not made for negotiating purposes it did not suffer from the same

<sup>24</sup> <https://mlexmarketinsight.com/insights-center/editors-picks/trade/cross-jurisdiction/chinas-eleventh-hour-demands-derail-talks-on-environmental-goods-deal>

<sup>25</sup> We are grateful to George Riddell for sharing with us the provisional list of environmental goods

<sup>26</sup> <https://www.oecd-ilibrary.org/docserver/9789264173651-en.pdf?expires=1582565068&id=id&accname=ocid177402b&checksum=D8A48969474FC445948A9D8F9A8DFAFE>

domestic political economy pressures as the WTO and APEC did. On the other hand, the list could be seen as less precise as it is non-exhaustive, and no attempt was made to go beyond the 6-digit (sub-heading) HS codes and identify only those goods that could be considered “environmental”.

Overall the OECD’s list identified 132 HS 6-digit codes. The 6-digit codes were divided into 3 categories (Pollution Management; Cleaner technologies and products; Resource Management) with a number of sub-categories.

Subsequently, in preparation for the 2010 Toronto summit of the G20, the OECD published an indicative list of 150 climate-change-relevant goods for a plurilateral environmental goods and services (PEGS) agreement.<sup>27</sup> This list is discussed in more detail below.

### **The Combined List of Environmental Goods (CLEG)**

The CLEG<sup>28</sup> combines the APEC (54 goods) list, the OECD’s (150 goods) PEGS list and the proposal by the ‘Friends’ (154 goods) to the WTO. In total the list contains 248 products.<sup>29</sup> 135 of these products are common to both the CLEG and the WTO’s EGA list.

The EU’s simple average MFN tariff on the CLEG products is 2.3%, and the products accounted for 7.5% of UK’s total imports and 8.3% of UK’s exports in 2018. Overall, over 80% of the tariff lines are either 2.5% or below (so would be rounded down under DIT’s proposal), or defined as intermediates. The average tariff on the remaining 39 tariff lines is 4%.

### **Environmentally Preferable Products**

A concern for the above mentioned lists (particularly the WTO lists and the APEC list) is that they were put together by developed countries, largely for developed countries. As already seen, the process was heavily influenced by mercantilist concerns, and as a result the list predominantly feature goods where average tariffs were already low in most developed countries. In contrast, tariffs on these goods were often higher in developing countries, and in addition few of the listed products were goods in which developing countries had a comparative advantage.<sup>30</sup> For these reasons most developing countries did not engage in the discussions at the WTO.

As an alternative, the concept of ‘environmentally preferable products’ was developed by UNCTAD, and later the OECD (Tothova, 2006<sup>31</sup>) compiled a list of 106 HS 6-digit EPPs. This is a looser concept than the ‘environmentally friendly’ concept used in the WTO, and

<sup>27</sup><http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=COM/TAD/ENV/JWPTE%282013%2933/FINAL&docLanguage=En>

<sup>28</sup><http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=COM/TAD/ENV/JWPTE%282013%2933/FINAL&docLanguage=En>

<sup>29</sup> The original list was published in HS2007, however for our purposes (to match the WTO EGA list) we use HS2012, in which case the CLEG lists contains 255 products.

<sup>30</sup> <https://voxeu.org/article/what-s-wrong-wto-s-environmental-goods-agreement>

<sup>31</sup> <https://www.oecd-ilibrary.org/docserver/9789264024823-3-en.pdf?expires=1582567484&id=id&accname=ocid177402b&checksum=9D4B71EE525475EBB45CE18A1683C>

feature products which cause significantly less environmental harm at some stage of their life cycle than their alternatives. The products on this list generally favour developing countries interests more than the aforementioned lists.