

Dr. Seferidi Paraskevi<sup>1</sup>, Dr. Soledad Cuevas<sup>2</sup>

1. Imperial College London
2. London School of Hygiene & Tropical Medicine

## **The potential impact of Brexit on fruit and vegetable prices in the UK**

### **Aim**

To calculate the impact that Brexit could have on consumer expenditure on fruit and vegetables (FV) due to changes in applied tariffs.

These are preliminary findings and involve a number of simplifying assumptions. Further modelling analysis is required to confirm and expand on these findings.

### **Methods**

We estimated potential changes in prices of FV post-Brexit. We used 2019 import data from the HMRC<sup>1</sup> to identify imports (in kg) of 12 FV categories from the EU and non-EU countries. Those were identified using the Harmonised System (HS) level 4 commodity classification (see Annex). We assumed that prices of EU imports will change under two scenarios: (1) No deal Brexit: No agreement between the UK and the EU will be established post-Brexit, so there will be an increase in FV tariffs from zero to the new UK MFN tariffs, and (2) EU FTA: A free trading agreement (FTA) between the UK and the EU will be established, so FV will continue to be imported under a zero tariff regime. We assumed that prices of imports from some non-EU countries will also change. This will include, first, imports from countries that used to have a FTA with the EU but they have not agreed the same deal with the UK. This will increase FV tariffs from zero to the new UK MFN tariffs. For some of these countries, negotiations are ongoing, so this is subject to change. Second, changes in prices might occur to imports from countries that had no FTA with the EU and will continue to have no FTA with the UK. These will see a shift from the EU MFN tariffs to the new UK MFN tariffs. We assumed that no change would occur in the price of FV imports from countries that were importing under an EU FTA that has now been rolled over to the UK. We did not identify any newly established FTAs between the UK and FV importers. Table 1 presents the percentage of FV imports that fall under each category. We translated the estimated change in price of FV imports into change in wholesale FV price, using an estimate of imports as a percentage of overall FV supply from DEFRA<sup>2</sup> (see Table 1).

We used data provided by the UK government<sup>3</sup> to identify the new UK MFN tariffs for each FV subcategory and calculate differences from the EU MFN tariffs. The majority of MFN tariffs did not change, i.e. the UK maintained the EU MFN tariffs. Some tariffs which are not defined in ad valorem terms (as a proportion of value) were changed to reflect currency conversions. For these, we assumed no change in the ad valorem rate equivalent. Finally, some tariffs will be liberalised, and some will be simplified; these are reflected in the differences between UK and EU MFN tariffs used in this analysis.



We used tariffs disaggregated at the HS8 level, as provided by the UK government. These were used to calculate simple averages at the HS6 level. We then use the simple HS6 averages to calculate simple and value-weighted tariffs at the HS4 level. Non ad-valorem EU MFN tariffs were replaced by their ad-valorem equivalents (AVE) provided by the World Trade Organisation (WTO)<sup>4</sup>. These include specific duties, compound duties and duties that vary based on entry price according to the EU entry price system (EPS). As AVE were only available at the HS6 or in some cases HS5 level, we assumed the same AVE rate across all HS-8 commodities. Seasonal UK and EU MFN tariffs were replaced by an annual average weighted by monthly import volumes to the UK, using 2019 import data. Tomatoes were the only commodity where AVE rates were not provided. Thus, we used the rate applied to the EU Standard import value (68.4 Euros/100Kg, for which the corresponding rate is 8.8%), obtained from the EU Market Access Database<sup>5</sup> (accessed on 28/11/2020). . Table 2 presents the UK and EU MFN tariffs used, as well as their estimated differences.

We used expenditure data (average expenditure in pence per person per week) by income quintile from Family Food 2018/2019<sup>5</sup> to estimate the increase in overall expenditure of fresh FV under the two scenarios, assuming that there would be no change in the amount of FV purchased. Overall household expenditure changes are calculated using adult equivalent conversion rates from the literature<sup>6</sup>.

The additional cost of a five a day fruit and veg basket is based on previously published estimates on the baseline cost of a 5 a day fruit and veg basket<sup>7</sup>. We adjusted these estimates for inflation using a specific CPI index for non-processed foods and assumed that the proportions of fruit and veg groups within the basket remained constant when going up to 5 a day (Table 5).

This analysis has some limitations. We assumed that no trade diversion would occur, i.e. the UK will not shift towards more efficient importers. We assumed that changes in import tariffs will pass-through to consumer prices. For specific, compound and EPS duties, we assumed that EU AVE tariffs at HS-6 or HS-5 commodity level are common across all disaggregated commodities within this group. We only took into account changes in tariffs and we did not consider potential extra costs related to non-tariff trade barriers, e.g. transaction costs due to border check for rules of origin or technical requirements. We do not account for other factors which might impact import prices such as changes in the exchange rate.

## Results

Fruits and vegetable prices could increase between 0.4% and 9.1% across the different subcategories, as a result of a no deal scenario, as imports from the EU would be automatically subject to the new UK general tariffs (UKGT) (Table 3). The largest increases in price would be for citrus fruits and tomatoes, If the UK establishes a FTA with the EU, impacts on prices would be minimal, as the majority of EU FTAs have been rolled over to the UK and the UKGT are very similar to the EU MFN tariffs (Table 3).

If tariff increases were passed on to consumers, the current fruit and vegetable basket for British families would be around 4% more expensive (Table 4). For a family of four (two kids, two adults), this would represent an increase of 25 to 28 pounds a year (depending on the kid's age) only for fruit and vegetables.



The cost of buying five a day for a family of four could increase up to 65 pounds per year (Table 5).

While these estimates assume that price increases are passed on to consumers, they do not include major sources of potential increase such as transaction costs from delays and increase bureaucracy, or impacts derived from changes in the exchange rate.



*Table 1. Percentage of UK imports by different post-Brexit agreements (using 2019 import data)*

	Imports from the EU (% of total imports)	Imports from non-EU countries (% of total imports)			Imports (% of supply) 2019
		EU FTAs rolled over	EU FTAs not rolled over yet	No FTAs (changing to new MFN tariffs)	
<b>Fruits</b>					
Apples and Pears	64.5%	22.3%	1.0%	12.2%	61%
Bananas	4.5%	88.5%	6.3%	0.8%	100%
Citrus fruit	48.2%	28.9%	18.9%	4.0%	100%
Grapes	28.0%	39.3%	27.3%	5.4%	100%
Other Fruits	46.9%	37.2%	4.6%	11.3%	89%
<b>Vegetables</b>					
Brassica	95.3%	3.4%	1.0%	0.4%	36%
Legumes	23.7%	56.1%	17.2%	3.0%	24%
Lettuce	99.8%	0.0%	0.2%	0.0%	67%
Onions	68.0%	5.4%	14.6%	12.1%	56%
Other vegetables	88.5%	8.4%	1.8%	1.3%	71%
Root vegetables	84.4%	13.1%	2.1%	0.4%	4%
Tomatoes	82.3%	0.2%	17.5%	0.0%	88%

*Table 2. Weighted averages of UK and EU MFN tariffs and their differences*

	EU MFN	UK MFN	Difference
<b>Fruits</b>			
Apples and Pears	8.80%	4.77%	4.02%
Bananas	16.00%	16.00%	0.00%
Citrus fruit	14.58%	11.49%	3.09%
Grapes	11.76%	8.73%	3.03%
Other Fruits	6.49%	6.34%	0.14%
<b>Vegetables</b>			
Brassica	11.24%	8.93%	2.31%
Legumes	10.37%	9.63%	0.74%
Lettuce	10.58%	10.00%	0.58%
Onions	9.63%	8.35%	1.29%
Other vegetables	8.73%	8.23%	0.49%



Root vegetables	13.21%	11.64%	1.58%
Tomatoes	8.80%	10.42%	-1.62%

Table 3. Estimated changes in prices of fruits and vegetables

Scenario	Changes due to tariffs on EU imports	Changes due to EU FTAs not rolled over yet	Changes due to move into new MFN tariffs	Total added costs to imports (%)	Overall effect on price (%)
<b>Fruit</b>					
<b>Bananas</b>					
No deal	0.7%	1.0%	0.0%	1.7%	1.7%
EU FTA	0.0%	1.0%	0.0%	1.0%	1.0%
<b>Citrus</b>					
No deal	5.5%	2.2%	0.1%	7.8%	7.8%
EU FTA	0.0%	2.2%	0.1%	2.3%	2.3%
<b>Grapes</b>					
No deal	2.4%	2.4%	0.2%	5.0%	5.0%
EU FTA	0.0%	2.4%	0.2%	2.5%	2.5%
<b>Apples and Pears</b>					
No deal	3.1%	0.0%	0.5%	3.6%	2.2%
EU FTA	0.0%	0.0%	0.5%	0.5%	0.3%
<b>Other Fruit</b>					
No deal	3.0%	0.3%	0.0%	3.3%	2.9%
EU FTA	0.0%	0.3%	0.0%	0.3%	0.3%
<b>Vegetables</b>					
<b>Tomatoes</b>					
No deal	8.6%	1.8%	0.0%	10.4%	9.1%
EU FTA	0.0%	1.8%	0.0%	1.8%	1.6%
<b>Onions</b>					
No deal	5.7%	1.2%	0.2%	7.0%	3.9%
EU FTA	0.0%	1.2%	0.2%	1.4%	0.8%
<b>Brassica</b>					
No deal	8.5%	0.1%	0.0%	8.6%	3.1%
EU FTA	0.0%	0.1%	0.0%	0.1%	0.0%
<b>Lettuce</b>					
No deal	10.0%	0.0%	0.0%	10.0%	6.7%
EU FTA	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Roots</b>					
No deal	9.8%	0.2%	0.0%	10.1%	0.4%
EU FTA	0.0%	0.2%	0.0%	0.2%	0.0%
<b>Legumes</b>					
No deal	2.3%	1.7%	0.0%	4.0%	1.0%



EU FTA	0.0%	1.7%	0.0%	1.7%	0.4%
Other Veg					
No deal	7.3%	0.1%	0.0%	7.4%	5.3%
EU FTA	0.0%	0.1%	0.0%	0.2%	0.1%

Table 4. Estimated increase in FV expenditure in absolute (pence/person/week) and relative (% of the weekly per person expenditure of fresh FV) terms, overall and by quintile of equivalised income

Scenarios	Overall income	lowest quintile (most deprived)	Quintile 2	Quintile 3	Quintile 4	highest quintile (least deprived)
Added expenditure (pence/person/week) to the overall fresh FV basket						
No deal	15.6	11.0	12.9	16.0	16.8	19.8
EU FTA	2.4	1.79	2.07	2.52	2.49	2.76
Added expenditure (% of the weekly per person expenditure of fresh FV)						
No deal	4.1%	4.1%	4.1%	4.1%	4.1%	4.2%
EU FTA	0.6%	0.7%	0.7%	0.6%	0.6%	0.6%

Table 5. Estimated increase in expenditure for a family of four to maintain current basket and five a day

	Current cost	No deal Brexit	Brexit with EU FTA
<b>Five a day</b>			
Per adult equivalent per year	497.67	518.21	500.78
For a family of four per year	1,592.54	1,658.28	1,602.48
<b>Current fruit and veg basket</b>			
Per adult equivalent per year	200.07	208.33	201.32
For a family of four per year	640.23	666.65	644.22



## References

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**Annex**

Table A1. Classification of FV across different data sources.

	Trade and Tariff data (HS 4-digit classification)	Supply data (DEFRA)	Family Food
<b>Fruits</b>			
Apples and Pears	0808 - Apples, pears and quinces, fresh	Total Dessert Apples; Total Culinary Apples; Total Pears	Fresh apples, Fresh pears
Bananas	0803 - Bananas, incl. plantains, fresh or dried	Bananas	Fresh bananas
Citrus fruit	0805 - Citrus fruit, fresh or dried	Citrus	Fresh oranges, Other fresh citrus fruits
Grapes	0806 - Grapes, fresh or dried	Grapes	Fresh grapes
Other Fruits	0804 - Dates, figs, pineapples, avocados, guavas, mangoes and mangosteens, fresh or dried; 0807 - Melons, incl. watermelons, and papaws "papayas", fresh; 0809 - Apricots, cherries, peaches incl. nectarines, plums and sloes, fresh; 0810 - Fresh strawberries, raspberries, blackberries, black, white or red currants, gooseberries and other edible fruits	Total Plums; Cherries; Others & Mixed; Strawberries; Raspberries; Blackcurrants; Peaches And Nectarines; Other fruit with stones (Apricots, Sloes, Quinces); Other Soft Fruit (Red and Blackcurrants, Berries, Sloes); Avocados; Dates and Figs; Melons; Pineapples; Other Exotic fruit (Pawpaw, Kiwi, Persimmons, Mango); Other fruit not elsewhere classified	Fresh stone fruit, Other fresh soft fruit, Fresh melons, Other fresh fruit
<b>Vegetables</b>			
Brassica	0704 - Cabbages, cauliflowers, kohlrabi, kale and similar edible brassicas, fresh or chilled	Cauliflowers and Broccoli; Cabbages; Brussel Sprouts; Other Brassicas	Fresh cabbages, Fresh brussels sprouts, Fresh cauliflower
Legumes	0708 - Leguminous vegetables, shelled or unshelled, fresh or chilled	Beans, Peas, Broad Beans, Runner and Dwarf Beans, Green for Market	Fresh peas, Fresh beans





		Peas, Green for Processing Peas	
Lettuce	0705 - Lettuce "Lactuca sativa" and chicory "Cichorium spp.", fresh or chilled	Lettuce; Lettuce - protected veg	Leafy salads fresh (Lettuce and leafy salads, Prepared lettuce salads)
Onions	0703 - Onions, shallots, garlic, leeks and other alliaceous vegetables, fresh or chilled	Onions, Dry Bulb; Onions, Spring; Leeks; Garlic; Onions	Fresh onions, leeks and shallots
Other vegetables	0707 - Cucumbers and gherkins, fresh or chilled; 0709 - Other vegetables, fresh or chilled	Asparagus; Baby leaf; Celery; Courgette; Cucumbers; Mushrooms; Others-protected veg; Others; Rhubarb; Self Blanching Celery; Sweet Peppers; Watercress; All Other Fresh Vegetables; Aubergines	Other fresh green vegetables, Fresh cucumbers, Fresh mushrooms, Miscellaneous fresh vegetables
Root vegetables	0706 - Carrots, turnips, salad beetroot, salsify, celeriac, radishes and similar edible roots, fresh or chilled	Beetroot; Carrots; Parsnips; Turnips and Swedes; Carrots and Turnips	Fresh carrots, Fresh turnips and swede, Other fresh root vegetables
Tomatoes	0702 - Tomatoes, fresh or chilled	Tomatoes	Fresh tomatoes