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Morgenroth, Edgar

Dublin City University

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Brexit Impacts: Opportunities for German-Irish Trade

Edgar L. W. Morgenroth

Dublin City University, Business School

Edgar.morgenroth@dcu.ie

Abstract: While there is still uncertainty whether and how the UK will leave the EU, a hard or no-deal Brexit is still a possibility. Under such a scenario the EU will impose most favoured nation tariffs on imports from the UK, which will impact on import prices. This will change the relative attractiveness of imports from other EU countries compared to that for imports from the UK. This means that sourcing from alternative markets. This paper considers imports from the UK to Germany and Ireland and the degree to which these can be replaced by Irish or German goods respectively. The analysis uses detailed 6 digit trade data for 2017 in conjunction with the EU-WTO tariffs, which are assumed to be passed through perfectly. The impact of additional transport costs given the longer transport distance is accounted for. The results suggest that there are significant opportunities for trade reorientation with potential in over half of the all the six digit product groups that are currently imported from the UK.

JEL Code: F14, F13, F17

Key Words: Brexit, trade diversion, market share

1. Introduction

Brexit is widely expected to have significant negative effects. These are likely to arise in a number of areas. Davies and Studnicka (2018) have shown that the Brexit referendum had an immediate effect on the FTSE stock exchange, and in particular, on the share values of firms that are more reliant on EU imports and that have more complicated international supply chain linkages. Another immediate effect of the referendum result was on the Pound Sterling exchange rate with, Sterling depreciating by around 10% immediately in the wake of the referendum.

While Brexit has already had these immediate effects, a significant body of research has highlighted long-run impacts. For example, Brexit will have a significant impact on the EU budget given that the UK is second largest economy in the EU and a net contributor to the EU budget¹. Brexit is also expected to reduce migration to the UK and this could affect other EU Member States such as Ireland. For the UK, analysis shows that reduced immigration is going to have a negative impact on GDP growth (Portes and Forte 2017). It is likely that reduced migration to the UK will result in increased migration to Ireland and/or reduced emigration from Ireland to the UK. This is likely to result in increased unemployment and reduced wages in Ireland (see Barrett et al. 2015).

The most significant impact is however expected to arise through reduced trade, because a UK outside the EU Single Market and Customs Union, will face increased trade frictions for trade with other EU Member States (Morgenroth, 2015). In the case of a no-deal or hard Brexit, the UK will become a third country with respect to trade, with no trade deal in place. This would result in the EU having to levy tariffs on imports from the UK according to the tariff schedule that the EU has registered with the World Trade Organisation (WTO) for most favoured nations (those that are also members of WTO but that do not have a trade agreement in place with the EU).

Increased barriers to trade which any form of Brexit will undoubtedly result in will have a significant impact on Another impact will be on foreign direct investment. FDI (Lawless and Morgenroth, 2016

Overall, Brexit is likely to have significant impacts on the UK economy and a number of EU Member State economies. The macroeconomic effects have been estimated in a large number of studies. The negative impact of Brexit on UK GDP has been estimated to range from 0.2% to 10.5% (see the summary in Bergin et al. 2019). For Ireland Bergin et al. 2017, Bergin et al. 2019 have estimated that GDP could be reduced by as much as 5% relative to a no-Brexit baseline. There are fewer estimates of the macroeconomic effects of Brexit on Germany by Aichele and Felbermayr (2015) estimate a more modest reduction in GDP of 2%, which is consistent with the less intense economic connections between Germany and the UK compared to those between Ireland and the UK.

While the focus of much of the Brexit impacts debate is on exports, Lawless and Morgenroth (2018) have shown that if WTO tariffs are imposed on imports from the UK then this would have the effect to raise consumer prices by up to 3.1%. They did not consider the impact on businesses that import inputs into their production processes, which would add further costs to the economy. Importantly, their analysis and that by other did not consider possible substitution of UK sourced goods by goods sourced in other EU Member States. This is important as substitutions has the potential to reduce the overall negative impact of Brexit, and indeed redirection provides opportunities for individual firms, which might actually benefit from Brexit.

¹ The largest EU economy is Germany, which accounted for 21.1% of EU GDP in 2018, while the UK accounted for 15.1% of GDP, just ahead of France (14.8%). Ireland accounted for 2% of EU GDP.

Given the potential benefits from substitution away from UK goods it is important to identify the possible opportunities. This report aims to contribute to this by assessing the potential for substitution German or Irish goods for UK imports. This should help businesses and policy makers in trying to redirect trade, which will require changes in logistics chains. The analysis in this report is focused on goods as the potential impact can be more precisely measured due to the fact that goods trade is subject to tariffs. In contrast, services trade tends to be more binary in that it is either allowed or not allowed. Under a hard Brexit many services will not be tradable into the EU from the UK.

This report is organised as follows. Section 2 briefly outlines the broad trade patterns over time between the UK, Ireland and Germany. Section 3 shows how Brexit can impact on trade. Section 4 outlines the data and the methodology used in the analysis, Section 5 outlines the results and Section 6 summarises the results and draws conclusions.

2. Goods Trade Trends

It is useful to briefly consider the development of trade patterns over time. Figure 1 and Figure 2 respectively show both the share of total exports that were destined to the UK (exports shares) and the share of imports that was sources in the UK (import share). The graphs show some obvious differences.

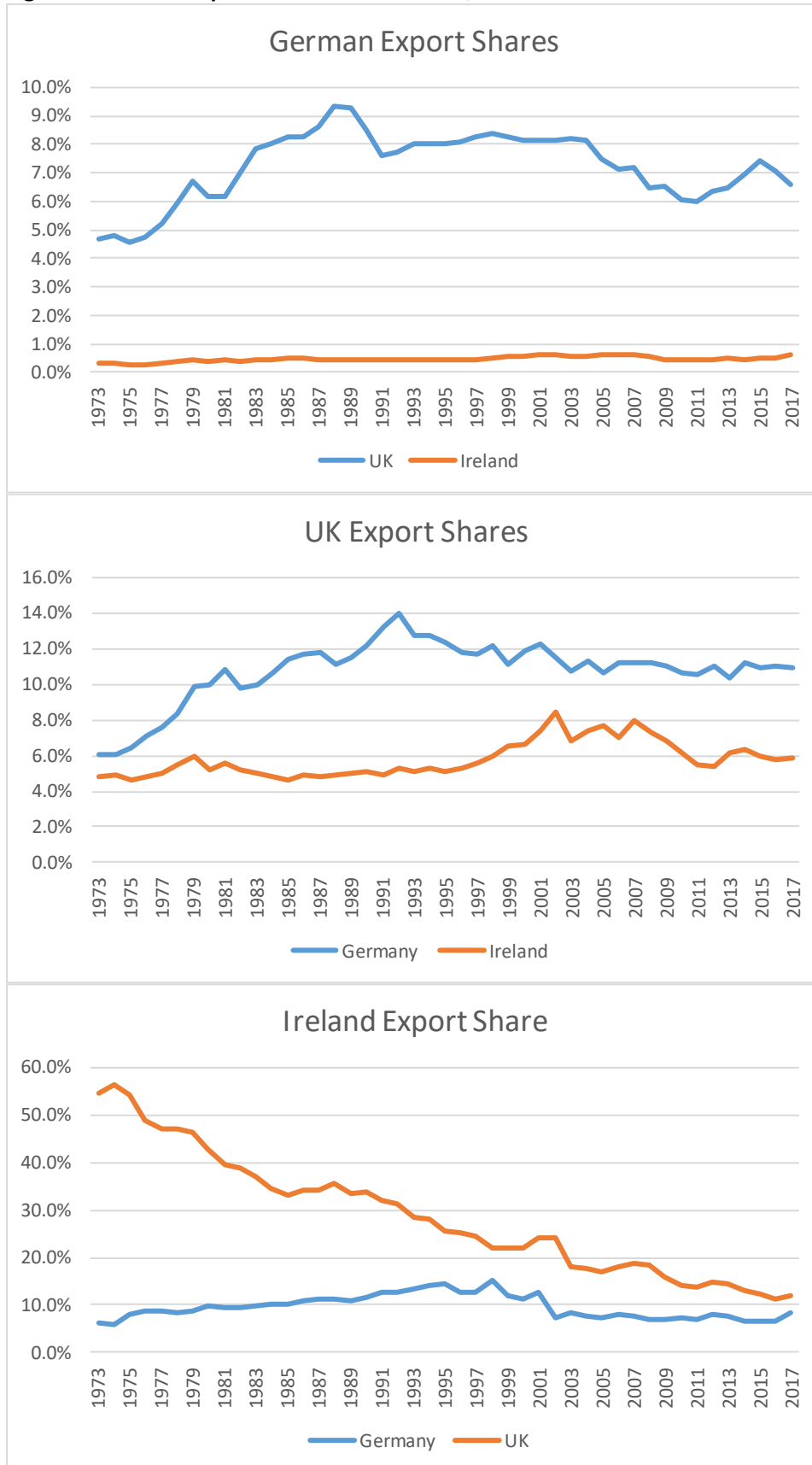
Naturally, the UK accounts for a greater share of German exports than Ireland. The share of German exports destined to the UK peaked in the late 1980's but is still higher than it had been the UK joined the then EEC in 1973. Interesting is the noticeable decline in the share of German exports going to the UK following the Brexit referendum. This could be due to the depreciation of Sterling, which would have made German imports into the UK more expensive. Ireland remains a relatively small export destination for German exporters. Nevertheless the share has doubled since Ireland joined the then EEC.

Exports to the UK accounted for more than 50% of Irish goods exports in 1973, but this share has declined to less than 12% in 2017. The graph for Irish exports to is more difficult to interpret as German unification resulted in a jump that in the series. Overall, Germany is a less important export destination than the UK but unlike the UK, the share of Irish exports destined to Germany continues to grow. Given the size of the German economy, a greater export share should be expected.

The share of UK exports destined to Germany peaked in the late 1980s and has been declining slightly but steadily ever since. In contrast, the share of UK exports accounted for by Ireland has been increasing. Interestingly, while a depreciation of Sterling in the wake of the Brexit referendum should have boosted exports to Euro zone countries such as Ireland and Germany, the data does not show any such effect.

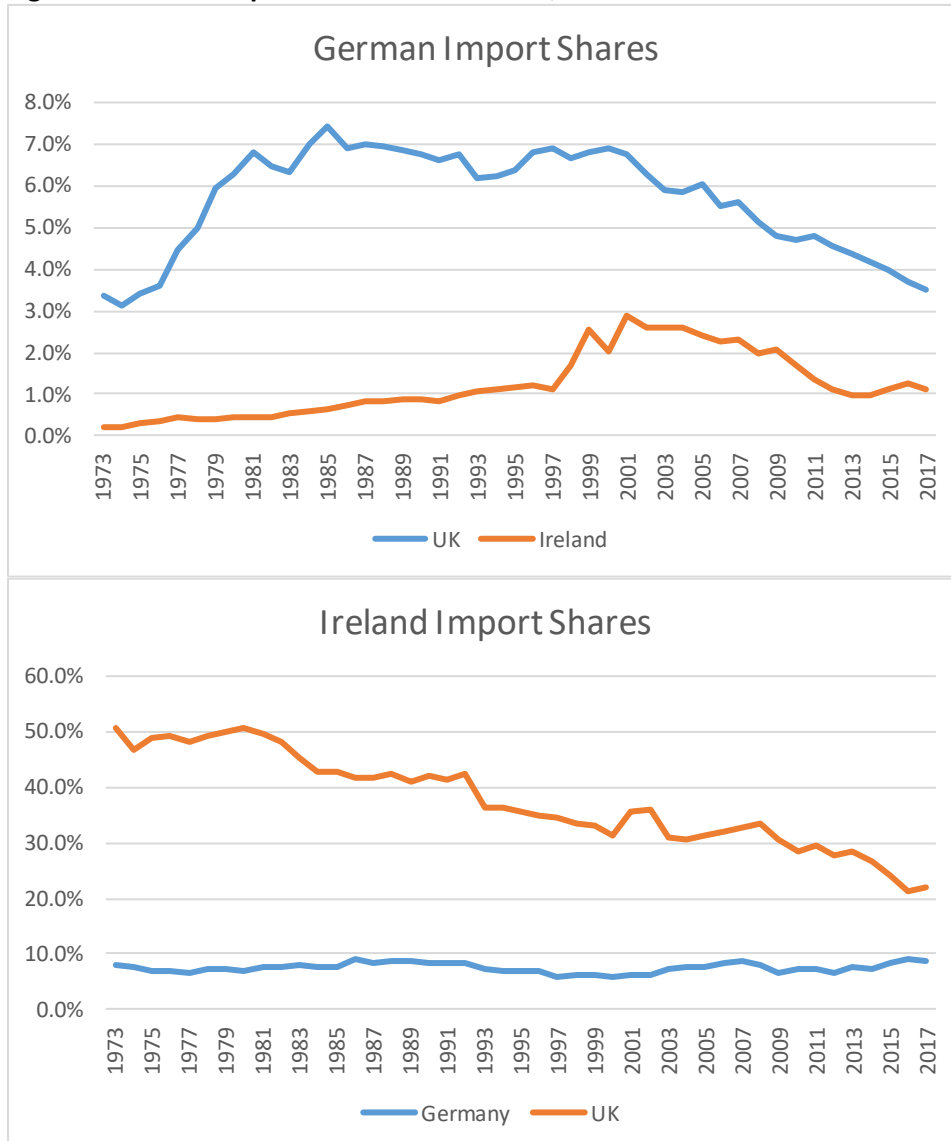
For the purposes of this report, imports from the UK are more important. Figure 2 shows the evolution of the import shares for both Germany and Ireland. Very noticeable is the fact that the share of UK imports to Germany has been falling significantly from over 7% to less than 4%. Imports from Ireland account for just over 1% of imports into Germany. For Ireland, the share of imports from the UK has also fallen but not as rapidly. Nevertheless, the UK still accounts for over 20% of goods imports into Ireland.

Figure 1 Share of Exports Destined to the UK, 1973 to 2017



Source: Own calculations using UN COMTRADE data.

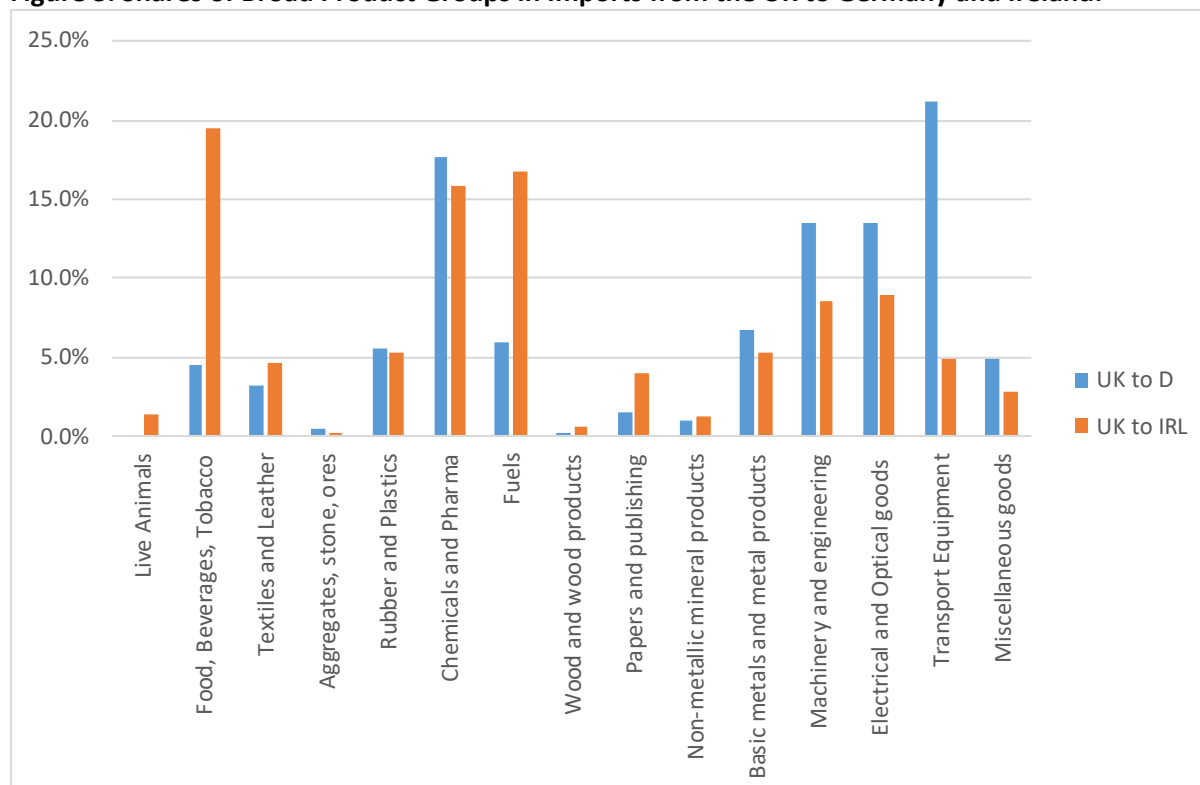
Figure 2 Share of Imports Destined to the UK, 1973 to 2017



Source: Own calculations using UN COMTRADE data.

There are significant differences in the importance of different types of product imported from the UK to Germany and Ireland. As shown in Figure 3, the share of UK imports to Ireland (1.4%) accounted for by live animals was significantly larger than that received in Germany (0.1%). Food, Beverages and Tobacco, Fuels and Chemicals and Pharmaceuticals have the largest share of imports from the UK to Ireland and account for 52% of all imports. For Germany UK imports of Transport Equipment (incl. parts), Chemicals and Pharmaceuticals and Machinery and Engineering accounted for 52.3% in 2017. Overall the correlation coefficient across the two import patterns at the detailed product level is only 0.26.

Figure 3. Shares of Broad Product Groups in Imports from the UK to Germany and Ireland.



Source: Own calculations using UN COMTRADE data.

3. Potential Brexit Impacts on Trade

There are a number of ways in which Brexit can affect trade.

Firstly, under a hard Brexit or a disorderly Brexit, where no Withdrawal Agreement is signed, the UK would become a third country without a Free Trade Agreement. This means that the EU most favoured nation (MFN) tariffs would be applied to imports into the EU from the UK. MFN tariffs apply to third countries which are a member of the World Trade Organisation (WTO) but with which the EU does not have a trade agreement². The EU has registered a full schedule of tariffs and these vary significantly across products.

While tariffs on many goods are either zero or very low, certain goods face high tariffs. For example, for meat products UK imports to Ireland would incur an average tariff of 37%, while those to Germany from the UK would incur an average tariff of 36%. The difference between the two is due to slightly different products being traded. Other product groups with average tariffs of over 10% are cereals, dairy, flour, processed meats & fish, tobacco, flours, dairy & eggs, sugars & confectionary, processed veg & fruit, processed cereals, clothes, cocoa & chocolate, footwear and vegetables.

In addition to tariffs, trade can be impeded by a variety of other barriers such as regulations, customs forms, delays at border etc. Collectively these are known as non-tariff barriers (NTBs). These can be significant and can also hit those products that are not subject to tariffs. For example, pharmaceuticals might require a separate licensing arrangement, which could be costly, or goods need to conform to a certain standard. To be sold in the EU products need to meet the CE standard, which relates to conformity with health, safety, and environmental protection standards for products. After Brexit

² The EU has registered 41 trade agreements with the WTO which is

there is a possibility there will be divergence in standards between the EU and the UK and this would imply that producers might incur additional costs to meet the standards in the other market and also to get their products certified. Border delays, which have been absent for trade between EU member countries, will re-emerge after Brexit for trade between the UK and the EU, if customs forms need to be processed and goods need to be checked. Research by Lawless and Studnicka (2017) suggests that the impact of NTBs on prices could be roughly similar in magnitude as the impact of tariffs.

Exchange rates have already been mentioned. The result of the Brexit referendum led to an almost immediate 10% depreciation of Sterling, which made goods produced in the Euro Zone more expensive and UK produced goods cheaper. Since the referendum, Sterling has been volatile and a no-deal or hard Brexit are likely to lead to a further depreciation, which will make it harder for EU producers to compete in the UK market while UK exports to the EU will become more competitive.

An important dimension of production inside the EU is the fragmented nature of production and consequently the integrated nature of supply chains. Thus, products can pass numerous times between different EU Member during the production process. This does not involve technologically advanced products containing many components such as cars but also products such as relatively basic foods such as cheese. If Brexit results in tariff and non-tariff barriers being implemented then these supply chains will incur significant extra costs and are thus likely to result in changes in the location of production activities. As mentioned above, research expects significant relocation of investment away from the UK.

Ultimately, all the potential effects are likely to impact on prices and/or profit margins. Of course, these effects are biggest in the absence of mitigating actions. Firms could source their inputs from countries other than the UK. Likewise, firms that might lose sales in the UK due to Brexit can try to find alternative markets both within the EU and further afield. If tariffs are applied to UK goods then UK suppliers are likely to lose market share in EU markets and this can be taken up by other EU suppliers, which would reduce the overall negative impact estimated in static scenarios.

4. Data and Methodology

Methodology used here follows that of Lawless and Morgenroth (2019) in determining the effect of tariffs on prices, and this requires detailed product level trade data and corresponding tariff data.

The trade data for this study is taken from the United Nations (UN) COMTRADE database, which can be accessed via the World Integrated Trade Solution website (<https://wits.worldbank.org>). The data is available for different product classifications and nomenclatures. For this study the data used follows the Harmonised System product classification (HS2017) at the 6 digit level of disaggregation. This distinguishes 5468 detailed product groups. There are 34 product groups for live animals, 920 groups for food and agricultural products, and 908 for chemical and pharmaceutical products. For example, the first group (010121) is purebred breeding horses while the second group (10129) is other horses. The classification distinguishes nine types of milk. In 2017 Germany imported 4192 products from the UK while Ireland imported 4404 products. For the analysis, data for 2017 is used as data for 2018 is still subject to possible revisions.

Tariffs can be levied in ad valorem form (a percentage of the value) and/or a per kilogram or per item tariff. For example, sheets of glass are subject to an ad-valorem tariff of 4.4% plus €0.4 per 100 kilograms. Some products do not face a tariff for trade up to a certain value but a tariff if trade exceeds that threshold value. Likewise, for some products tariffs rise as the value of trade increases. For the

analysis, the minimum tariff is used rather than average or maximum, which means that potentially larger tariffs would apply. Of the 5468 products in the HS classification 3743 (68.5%) of the 5468 goods are subject to a tariff while the other will not face any tariff.

The Lawless and Morgenroth (2019) methodology is relatively simple in that it applies the existing tariff schedule to the known trade flows for a particular year and assumes that the tariffs are completely passed through to prices. It is thus possible to identify the average tariff rate that would apply to each product, which would be equal to a possible price increase assuming trade substitution does not take place. It is worth noting that while data for 2017 is used here the results do vary slightly year by year as the underlying data on value, weight and numbers varies across years.

In order to identify the potential for substitution away from UK sourced goods one needs to take account of the fact that transport costs are likely to increase for imports for the Irish market that are sourced from Germany compared to those sources from the UK. Likewise, imports from Ireland into Germany are likely to incur a higher transport cost than those from the UK. It is thus necessary to calculate the possible increase in transport costs that might apply to the substituted goods. If the extra transport costs, expressed as a percentage of the price, is less than the increase in the price due to tariffs then import substitution is possibly worthwhile. It is thus necessary to calculate the transport costs for each product.

Transport costs are calculated using a number of assumptions. Firstly, they are only calculated for products that could potentially be transported in a container, whether that is refrigerated or not. This means that live animals are not considered and some unusual loads are also not considered. This of course does not mean that there might not be a rationale for import substitution for these but rather that the calculations require more in depth knowledge on transport costs than are available for the type of desk study conducted here. Secondly, the calculations are carried out for a standard 40 foot container which would be roughly similar to an articulated trailer. The trade data shows that for UK imports to Germany 95% of trade could be transported in containers while for UK imports to Ireland 85% could be transported in containers. The difference reflects the fact that there is more trade of live animals between the UK and Ireland and that products that require bulk or liquid transport are more likely to be traded between the UK and Ireland.

The standard capacity of this type of container is used to calculate the number of containers needed to transport the volume of the product that was traded in 2017. This calculation utilises a so called freight factor which adjusts the space requirements of each good (see Lawless and Morgenroth, 2017 for more details)³. For example, a tonne of cotton wool would require a larger space than a ton of steel. Thirdly, having calculated the number of containers required the transportation costs are calculated by assuming that the cost of transporting each container is the same and averages €750 for the journey from the UK to Ireland (Dublin-Birmingham) and €700 for the journey from the UK to Germany (Birmingham-Cologne). Fourthly, it is assumed that the cost of shipping from Ireland to Germany is €1100 and is the same in the opposite direction i.e. shipping costs increase by 47% and 57% respectively.

In practice it is difficult to determine ex-ante what the cost of transporting a container or trailer load is as this is dependent on a large number of factors. Factors that play a role are time of the week, speed requirements, whether the load is full or a part load, whether the load is to be transported directly or via other places etc. This implies that in practice actual shipping costs are likely to vary significantly.

³ Freight factors are taken from www.cargohandbook.com and www.tis-gdv.de.

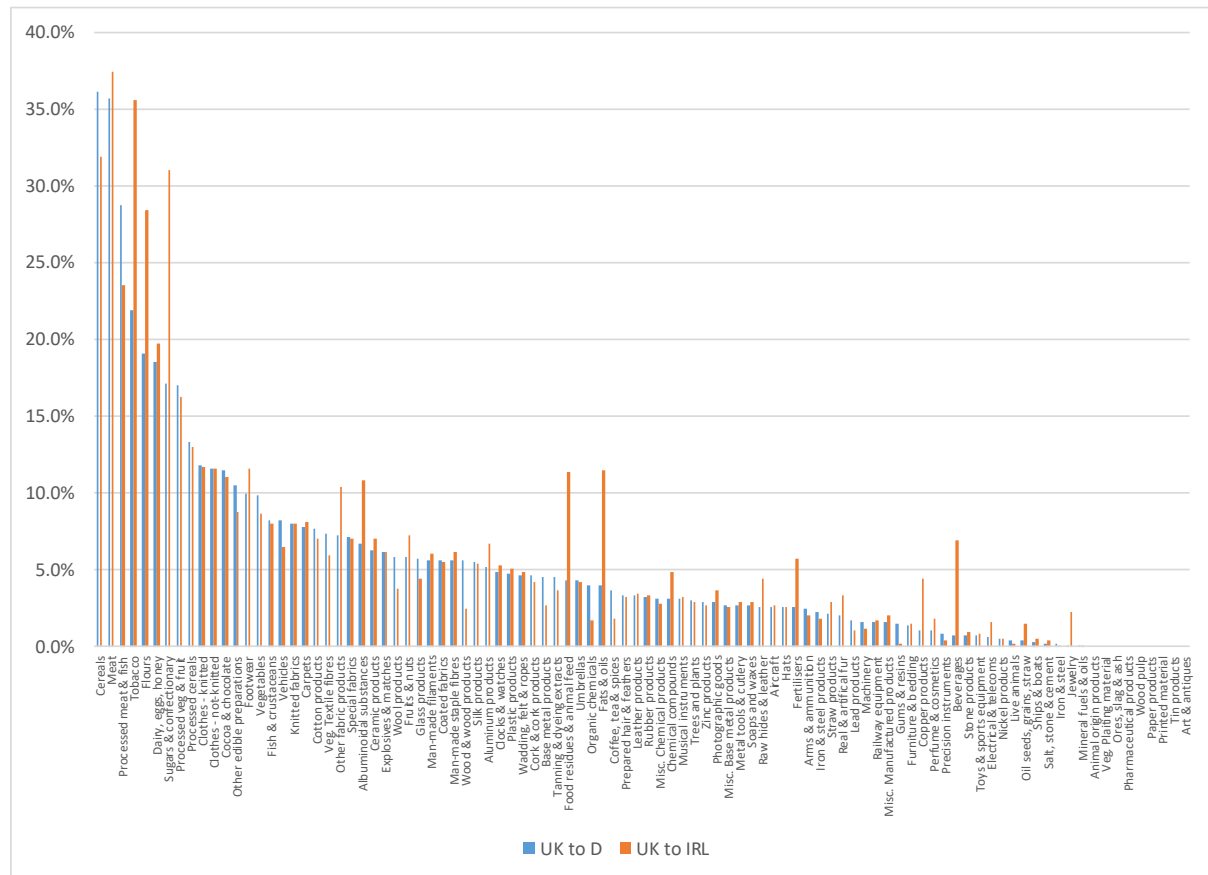
Another important issue is whether goods are transported via land bridge through the UK or shipped directly from Ireland to another EU country like France, Belgium, Netherlands and Germany. Currently the bulk of goods are shipped to the UK go by accompanied tractor and trailer units - so Roll-on Roll-off (Ro/Ro) traffic , and similarly the bulk of goods shipped to other EU Member States transit via the land bridge (see Lawless and Morgenroth, 2017, IMDO, 2018). The key advantage of the land bridge route is that goods can be transported from Ireland to Calais in approximately 20 hours with alternative Ro/Ro journeys taking 40 hours and containerised load-on / load-off (Lo/Lo) taking 60 hours. This is particularly important for fresh products that have a limited shelf life. If Brexit results in border controls then the land bridge will lose at least some of its speed advantage. Furthermore, transit traffic might need to purchase TIR carnets, which add to costs. Consequently other direct routes are likely to become more important, and for the analysis we assume that trade avoids the land bridge.

5. Results

Using the trade data and tariff schedule it is straightforward to calculate the tariffs that would have been due in 2017 if they had applied. The results are summarised in Figure 4, which shows the average tariffs estimated for 2017 for 96 broad product groups, which summarise the tariffs for those goods of the 4568 products for imports from the UK to Germany and Ireland. Of all the goods imported into Germany from the UK, some 509 are estimated to face a tariff in excess of 10%. For Ireland, the respective number of products is estimated to be 570.

The differences in average tariffs for the broad groups of products are due to differences in the importance of individual products within the groups. In some cases a slight change in the specification of the product can make a big difference to the tariff that would be due. For example, while milk with a fat content of less than 1% incurs a minimum tariff of €12.90 per 100kg while that for milk with a fat content of between 1% and 6% is €17.90 per 100kg. While there are differences, the patterns are quite similar and so it is not surprising that the correlation coefficient for 0.93.

Figure 4 Estimated Average Tariff across Product Groups for Imports from the UK to Germany and Ireland



Source: Own calculations using UN COMTRADE and WTO Tariff Schedule.

Having established the tariffs the next task is to calculate the transport costs. As highlighted above, this relies heavily on assumptions and, as before with the tariff data, assumes that the data is correctly reported. On average transport costs amounted 2.7% and 4.7% for UK imports into Germany and Ireland respectively. For UK imports into Germany just 73 products had an estimated transport cost of more than 10% and for UK imports in Ireland this number was 116 products.

The difference in average transport costs is accounted for by the different products that are traded. Thus, Ireland imports some goods with lower value to eight ratios than Germany and this results in higher transport costs. This is partly explained by geographic proximity and in particular the fact that the UK and Ireland share a land-border. The longer sea crossing and smaller Irish market may also play a role in driving transport costs up.

Given the transport costs it is straightforward to calculate the increased transport costs from sourcing imports in Germany or Ireland instead of the UK, and it is then also straightforward to check if this increase is smaller than the increase in price due to tariffs. For any product where this is the case the substitute product might be a viable alternative that is cheaper.

In 2017 Germany imported 4192 product lines from the UK. The analysis suggests that in 2311 cases (55%) an Irish alternative might be available and cheaper after Brexit. In 2017 Ireland imported 4404 product lines from the UK. The analysis suggests that in 2666 cases (61%) a German alternative might be available and cheaper after Brexit. These amount to 52.4% and 44% of the total value of imports from the UK to Germany and Ireland respectively. Of the 100 largest imports from the UK Germany

could potentially replace 46 with Irish products, Ireland could replace 44 of the 100 top UK imports with German ones.

Of the 2311 where an Irish alternative would be cheaper than the UK one after tariffs, 329 are food products and 97 of these are fresh foods. Thus, of the goods for which the Irish alternative might be preferable only 4.2% of the products are fresh and might thus need to be transported via the land bridge in order to maximise shelf life. The other products could potentially be transported via the slower direct route. For imports into Ireland 411 food products might be more cheaply procured in Germany and of these just 122 are fresh products (4.6%).

Some examples include unwrought aluminium alloys, which is imported from the UK by both Germany and Ireland and also produced in both. The tariff for this is 6%, but the additional transport costs amount to about 0.2% to 0.4%. Likewise, wheat imports into Ireland from the UK would incur a tariff of about 45%, whereas transport costs would increase by about 8.2%. Imported bread, pastry, cakes, biscuits from the UK would increase in price due to tariffs by 14%, but transport costs would increase by just 0.5% of the value of the product. There is clearly significant potential for German biscuits to substitute UK ones, given that these have a long shelf life. In contrast, fresh bread might not so easily substituted given its short shelf life.

6. Summary and Conclusions

A Brexit outcome where tariffs apply will have significant impacts on the UK and EU economies. While exports from the EU to the UK are likely to be negatively affected, so will imports from the UK into the EU as these would get more expensive if tariffs are added. Substituting away from UK imports that would be hit by tariffs would reduce the negative impact of Brexit for EU Member States but increase the impact on the UK. This will open up opportunities for individual firms that might take some of the UK market share with the EU. The analysis presented here consider the case of German and Irish imports from the UK and the possibility of substituting German and Irish products for UK products. Clearly, this type of analysis could be extended to the other EU Member States.

Results show that for Ireland 55% of products might potentially be sourced from Germany rather than the UK and for Germany the share of products that might be sourced from Ireland instead of the UK is even higher at 61%. Given this striking result, it is likely that most UK products could potentially be substituted by other EU products, which would greatly reduce the impact of Brexit. This provides an important silver lining for individual firms which may possibly benefit from Brexit.

Whether this substitution will actually happen depends on whether the products are close enough substitutes and of course, buyers and sellers must be able to find each other. For example, while some car parts are produced in Ireland, and may substitute for UK products in the German market, these need to be of the appropriate type to actually be substitutes. A desk analysis such as the one conducted here cannot give definitive answers as to whether a product will actually be substituted. This report aims to contribute to this by identifying products with potential, where agencies can then identify suppliers and purchasers and determine more concretely whether import substitution is possible.

The analysis is based on a set of assumptions and in practice these might not hold fully. For example, the assumption of full pass through might be viewed as unrealistic, but as discussed in Lawless and Morgenroth (2019), previous research has shown that while pass through is typically not perfect studies tend to be very substantial. Another possibility that was not considered in the analysis was the

likely further Sterling depreciation particularly in the wake of a no-deal Brexit which would reduce the price increase. Again, as discussed in Lawless and Morgenroth (2019), the benefit of a depreciation tend to be short-lived (see Morgenroth, 2000). The analysis did not account for non-tariff barriers which as was shown in Lawless and Studnicka (2017) have shown, these can double the tariff effect. The analysis does not take account of different unit costs, which are clearly important when it comes to actually doing deals. As this is ultimately a commercial issue and subject to negotiations it is difficult to assess the precise unit costs for specific products. This could mean that if German or Irish unit costs are higher than UK unit costs then the potential to substitute these for the UK goods is lower.

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