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Cardiff Economics Working Papers



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Understanding UK trade agreements with the EU and other countries

by Patrick Minford (Cardiff Business School)

Abstract:

Recent work has exposed the extent of EU protectionism within the single market Customs Union. If the UK leaves the EU customs union for unilateral free trade, as a small country within the world market, it will therefore make gains according to the standard trade model. Should it do so, trade agreements with other small countries would simply divert UK trade to these markets without affecting UK trade or output overall – hence while harmless they are also pointless. Trade agreements with large countries or country-blocs should be treated with care, since while they might give scope for UK industries to enjoy higher prices on all their output by diverting trade to these markets, they could come at a cost in higher prices for imports as in the case of the EU customs union. If having left the EU the UK finds a large country willing to offer a beneficial free trade agreement, it is likely to be easier to conclude with the UK outside the EU than with it as part of the EU, because of the complex and varied industrial interests of the EU as whole compared with the more limited interests of the UK. Already in services which are in general not governed by EU trade rules UK trade takes place under WTO rules and is also closely integrated with other countries' markets such as the US and most Commonwealth countries.

How often have you heard an establishment commentator intoning that the UK should stay in the EU because of the great benefits we obtain from being admitted to its Single Market and trade through our membership? Too many times to count. It is already one of the clichés of the Brexit debate.

On regulation, the euro, our democracy versus the EU oligarchy, and immigration, the Remain camp are on the back foot. They mount a case on security and foreign policy, which is hard to prove, given that there are so many avenues for foreign policy cooperation. But their strongest card is seen to be trade: Brexit risks the UK being 'out in the cold', unable to trade with the EU, and scrambling around helplessly in search of trade agreements with non-EU countries with whom the EU has already signed copious agreements.

Yet the curious fact is that this card is probably one of their weakest. It relies on the idea that under Brexit the UK would move to being a protected economy with tariffs and barriers against the rest of the world including the EU, much as it was back in the 1970s when it was 'the sick man of Europe'. Yet after three and a half decades of market reforms since those grim times, the UK is now largely a free market economy and Brexit would allow it to join the global market as a free trading nation, able to buy its goods and services from the world market at world prices, and ready to sell its products to the world at those world prices too.

Does anyone really think the British consumer, freed from the Common Agricultural Policy, will put up with high food prices any more, when these were there to placate French farmers? On the contrary, the UK will revert to an agricultural regime of necessary support for UK farmers through 'deficiency payments' from the UK Treasury; this will be designed to help farmers stand on their own two feet, while also maintaining necessary practices that safeguard the rural environment. Not only will these deficiency payments cost the Treasury much less than the CAP; they will also encourage farming efficiency, while keeping food prices at world levels.

Or again, would the UK consumer be willing to pay more for cars or furniture than going world prices after Brexit has eliminated the EU price premium? Surely not. It has been a basic principle for running the UK economy since the 1970s that industries should be subject to competition and pay their way in the marketplace.

If one accepts this basic premise, that after Brexit the UK would treat its industries according to market principles and expect them to trade at world prices under WTO rules, then the analysis of the trade benefits and costs of the EU takes a quite different turn. We then need to analyse the effect of the EU protectionist 'customs union', compared with a UK outside the EU that trades at world prices.

In the rest of this short paper, we consider two things in turn. First, what is the cost/benefit analysis of this trade aspect of Brexit? Second, we go through some of the fears and concerns raised by the Remain camp about the trade Brexit: that we are 'out in the cold', that we cannot sign trade agreements and so on.

The cost/benefit of trade and Brexit

To carry out this analysis we have to make calculations of how things would be with and without Brexit. For this a 'model' is required because we cannot simply read off the effects in any way just by looking at history. As we have seen, the history of our relationship with the EU spans a very different situation from the present one: when we joined the EU in the 1970s and in the following decade of the 1980s, the UK was struggling with huge economic problems and bringing in vital reforms, and meanwhile the Common Market as it then was, was relatively decentralised and emphasising the need for competition within the single market that was being constructed. Then we were a protected economy joining a more competitive European mainland economy.

Now however things are hugely changed. The EU has become highly centralised and is protectionist, while the UK favours market forces. We need a way of computing the effect of eliminating this protection from the UK economy and moving to free trade. Since this has never been observed, we have to do this by using established economic relationships, a model, to see the effects of the change.

In the recent second edition of my book, 'Should Britain leave the EU?' I set out such a model and the resulting calculations, as well as several chapters of relevant background facts. The model I and my coauthors set out there is a 'Computable General equilibrium' (CGE) model of the UK and other main trading economies, viz. the EU, North America and the Rest of the World. It assumes that there are some basic production relationships in each economy, for each of four main sectors: agriculture, manufacturing, services and the non-traded 'domestic' sector. Each economy uses its available inputs which are unskilled labour, skilled labour, land and capital. The first three are subject to

supply conditions domestically- essentially they are fixed but respond somewhat to changing wages/prices. Capital is however traded around the world and is mobile, with a price set in world markets. The output from each of the traded sectors is either imported from or exported to other economies at world prices. However, tariffs and other trade barriers create a wedge between these world prices and what local consumers pay; so in the case of the EU, with the UK inside it, prices inside the EU are raised above world prices by the EU customs union protection, both in agriculture and manufacturing. As for services there is little by way of EU intervention, simply the previously existing national barriers, which the EU has had little if any effect on.

The way this model works when the UK leaves the EU is that the UK abandons this protection and reverts to world prices for both its exports and its imports. Of course the EU still has its protectionist barriers and so by implication its consumers still face the same protected prices; this implies that UK exports to the EU at world prices will have the EU tariff-equivalent added to them so that EU consumers will pay the same for them as before. However, the key point is that UK consumers now pay world prices for imports from all over the world including the EU; while UK producers now get world prices for their output and those that were protected lose that protection.

It is important to realise that to get the gains of this loss of protection the UK must withdraw totally from the EU market and be quite 'outside it'. We discuss later whether this is being 'in the cold'.

Please consult Table 1 which sets out the calculations for the effects of assumed EU protection. The Table assumes that the relevant EU tariff-equivalent protection is 10%. As explained in our book (qv), this number is the result of OECD calculations of agricultural subsidy rates and calculations for manufacturing based on an OECD data-bank of consumer prices in all OECD countries, together with estimates from various sources of transport and distribution costs. In fact current rates of protection for both sectors are close to 20%; but we assume that by 2020, our benchmark year, this has been eroded to 10% by pressure from consumers. This may well be an optimistic assumption, but we make it in order not to get exaggerated results.

It might seem on the face of it that 10% protection in agriculture and manufacturing is not a very large or significant amount. It raises prices in these two sectors by 10% over the world price, while leaving service prices at world levels. For those used to macro models of short to medium run behaviour relative price movements of different sectors of this order occur regularly; for example world raw material prices can double or triple and greatly affect retail prices of sectors using those materials. Yet we do not observe huge sectoral output swings in the economy.

The difference here is that we are computing the long run effect of permanent relative price changes of these sectors. The sectors with higher prices pay higher wages, both skilled and unskilled, for the workers they need; they pay more for land and they use more capital whose price is fixed in world markets. What our CGE model shows in Table 1 is that resources are heavily attracted out of the service sector into agriculture and manufacturing. In fact we assume that output in agriculture is capped (effectively by control on the land that can be used in this sector) in our model by government policy; so that the attraction into this sector is frustrated by rising land prices. However for manufacturing no such limit is placed and the result is a substantial boost to manufacturing at the expense of services.

Table 1 Effects of UK and EU tariff of 10% on Agriculture and Manufacturing: percentage changes from Base

% changes	UK	EU	NAFTA	RoW
Y	-3.71	-3.39	0.22	0.16
Y _A	0.00	0.00	0.00	0.00
Y _M	93.33	49.07	-18.42	-12.22
Y _S	-27.02	-30.91	6.97	8.20
Y _D	-3.62	-3.47	0.21	0.16
E _A	-11.16	-4.29	0.47	0.76
E _M	-0.56	-0.57	0.03	0.19
E _S	-5.00	-4.76	0.30	0.06
w	13.25	13.25	-1.16	-1.16
h	-8.00	-8.00	4.11	4.11
l	48.37	48.37	0.92	0.92
N	1.25	1.25	-0.12	-0.12
H	-2.06	-2.06	0.52	0.52
L	-28.30	-28.00	-0.18	-0.28
K	7.08	7.75	0.50	0.37
CPI	8.18	8.15	0.79	0.76
P _A	10.48	10.48	0.43	0.43
P _M	10.00	10.00	0.00	0.00
P _S	1.89	1.89	1.89	1.89
PW _A	0.43	0.43	0.43	0.43
PW _S	1.89	1.89	1.89	1.89
Welfare	-3.39	-3.00	0.07	-0.03

Glossary: y= output; E=expenditure; w= wages of unskilled; h=wages of skilled; l= rent on land; N=unskilled labour; H= skilled labour; L= land; K= capital; CPI=consumer prices; P=price of commodity; suffixes: A=agriculture;M=manufacturing;S=services;W=world

Table 1 goes on to show that the effect of raising prices for these two sectors by 10% is first a substantial, 7.5%, rise in the cost of living. Wages of unskilled workers go up more than this, 14%, because they are disproportionately used in manufacturing. But skilled workers' wages fall by 11%, being disproportionately used in service industries. Landowners do well, with land prices soaring 47%. We see in these figures how the politics of vested interests works; unions representing unskilled workers, farmers and other landowners, as well as manufacturing businesses, will clearly support being inside the EU.

Yet the effect of shifting output into sectors where their productivity is less than the price paid by consumers is an overall loss of welfare for UK citizens; these citizens would value more the output lost in services whose production contracts 32%. The loss of welfare, measured by the loss of potential consumption by UK households, is 3.3%. This potential consumption change is measured as the change in the value of all output deflated by its consumer price cost (i.e. the change in [nominal GDP/CPI]), minus the change in the value of resources used to generate it). In other words the welfare effect is the percentage change in the resources available for consumption to UK households.

This cost is computed as if the protective measure is a tariff. However the customs union acts as a tariff in its effect on outputs and consumption; but the equivalent of the 'tariff revenue' (i.e. the

extra cost of imports due to the protection) is disposed of differently. There is revenue on imports from outside the EU; this revenue (paid by UK consumers) accrues to the EU itself but it is already counted in the UK's net contribution (after rebate and EU spending on UK projects). There is also 'revenue' accruing to EU businesses that sell protected goods to the UK because they can charge higher prices: this revenue is not counted elsewhere and is a cost to UK consumers. Our businesses also gain more from other EU consumers on their exports; so the 'net revenue' paid by UK consumers to EU consumers is the tariff times the net imports by the UK. For manufacturing where we have large net imports (about 8% of GDP) this net revenue transfer amounts to 0.8% of GDP on the 10% tariff-equivalent we have assumed. This amount is not included in our Table 1 calculation and so has to be added to it. For agriculture the workings of the CAP on transfers between countries for agriculture are complex and are already counted in the net UK contribution. So in sum the total cost to the UK of the protection of agriculture and manufacturing is 4.1% of GDP.

Some politicians attach totemic significance to manufacturing; we have heard quite a few arguments since the 2010 election that the economy should be 'rebalanced' towards manufacturing. One can see why the vested interests listed above would want this; it is no doubt to appeal to these interests that politicians make these arguments. But there is no economic case for encouraging output in sectors which market forces would contract. For such a case there would have to be some disparity between social and market values; yet there is no such disparity. Similar arguments were made two centuries ago for preserving agriculture with a similar lack of basis.

Leaving the EU and eliminating this protection would, according to these figures, raise service output and effectively eliminate manufacturing in the long run. The reason for this is fairly simple: as the UK has developed in the decades since the economy began to be liberalised in 1979, there has been a big rise in the share of skilled labour in the workforce. By now approximately 50% of university-age people go to some form of higher education or equivalent. This has favoured the expansion of skill-intensive industries of which the service industries are the principal examples. We can also include in these industries the design element of manufacturing, which is a service industry; 'manufacturing' in the national accounts includes this, inside the manufacturing firms it comprises. So to the extent that service activity is currently included in manufacturing, this part would not be eliminated but just reclassified. These workers are engaged in jobs that require the use of their brainpower and associated skills. The actual making of things, manufacturing in the original sense, has contracted hugely in the UK. What the CGE model tells us is that in the absence of EU protection this actual making would largely disappear.

This result should not be regarded as very shocking. The strongly declining share of manufacturing in GDP has been an unremitting trend feature of the UK since the 1980s; it would be intensified by leaving the EU, and eventually we would be left only with those parts of manufacturing that involve design and hi-tech skills, as one would expect in a relatively small country heavily endowed with skilled and educated labour.

We can note that there is a good demand for unskilled workers in the non-traded service sector (distribution, construction, utilities and so on) which cannot be substituted for by bringing in cheaper substitutes from abroad. As this non-traded sector is around half of the economy, one can see that if roughly half the labour force is unskilled it will be fully employed in the non-traded sector and there will be little of it left over for the manufacturing sector. Plainly EU protection as we have seen raises the wages of unskilled workers; but if there was a case for redistribution to these workers because they were poor, then this would already be done by public redistribution policy. This policy area is extremely active in the UK, as evidenced by the high progressivity of the tax-benefit system. There is no case for using protection to help carry out this policy since it is clumsily directed at the issue and so as we have seen creates a big cost for the economy as a whole.

It turns out that the costs to EU citizens of the EU tariff on agriculture and manufacturing are roughly the same as those for the UK. Thus when the 10% tariff is levied EU-wide including in the UK, the Table of effects shown below more or less replicates in the rest of the EU what happens in the UK. The only difference for the rest of the EU is that there is a small net revenue gain due to the net revenue transfer from UK to Rest of EU consumers; but as a percent of the much larger RoEU GDP total it is only 0.15% of their GDP. Thus the total welfare cost to RoEU is just under 3% of GDP.

So what our CGE model implies is that on Brexit, UK consumer prices would fall 8%, resources would shift out of manufacturing into services, and the UK economy would be about 4% better off.

There is some work, mainly at LSE (Ottaviano et al, 2014), which finds different results- unfavourable to Brexit. It does so for two main reasons. First, it does not assume that the UK will move to free trade, which alone would of course create a large negative effect since withdrawing from regional free trade within the EU while maintaining the same protection globally must reduce welfare for obvious reasons. Second, it uses a 'gravity' model of trade, which assumes trade in a product is purely related to the size of importing and exporting economies, distance and trade barriers on the product itself; thus it bypasses all the complicated relationships embedded in our CGE model and puts great emphasis on having good estimates of the direct effects ('elasticities') on each product's trade. Both these reasons must cause grave doubts about the conclusions of this work. We discuss both at some length in our book. There are also related views about other effects flowing from these calculated negative effects of Brexit, on such things as GDP, foreign investment, and growth. However, these effects are as insecure as the trade results to which they are related. Indeed, in some recent work Open Europe (2015) look at a variety of assumptions, within a model of trade (the GTAP model) that lies somewhere between the CGE model we use and the gravity model of Ottaviano et al, and they find that if the UK moves in a free market direction the effects are positive on Brexit, while if not they are negative.

One does not need to accept our exact calculations to agree with the direction of our results on grounds of pure (Econ 101) economic theory. It is not rocket science to find that protection reduces welfare. By Brexit the UK eliminates protection, moving to full unilateral free trade; this would raise welfare in any ordinary trade analysis and should not be surprising at all. All we have done is quantify the order of magnitude and also some details of the effects.

We now turn to some of the scare stories the Remain camp have spread around about Brexit and trade, as we mentioned at the start of this paper.

Brexit, world trade and trade agreements

The ability of the UK to trade and conclude trade agreements if it leaves the EU has become a central argument of the debate. In this section we discuss what is at stake.

World trade, B2B and the WTO

To analyse the question we require a clear theory of how trade works. For this we adopt a standard trade model, such as we have used in chapter 3 of 'Should we leave the EU?'. In this model the UK produces traded goods in a competitive world market, where world prices for these goods are set by world supply and demand. It is also a relatively small supplier in any particular world market, since

the UK has under 3% of world GDP; as a result it is a 'price-taker', that is whatever it sells or buys on the world market has no effect on the world price. This world market can be thought of as a business-to-business market for goods and services at the border or ex-factory. For example a laptop computer of a certain power and with a bundle of typical characteristics would be priced in this market at a certain value, set so that world demand equals world supply; if the UK produces such a machine it would get the same price for it as one produced by say S Korea.

Notice that this B2B market is not really familiar at all to ordinary people who think in terms of shops or online markets where they buy products that have been made into marketed, branded objects that they have seen on advertisements and so on. For a product-making business this is the result of a whole distribution effort, usually made by specialist firms to whom they sell the product they make.

We need also to think about service products, whether it is shipping, tourism, banking, currency trading, or education. Here again we need to distinguish the B2B general unbranded product – whether it be a container ship or a transportation outfit or a currency hedging team- from what the retail customer is sold – such as a parcel service, a package holiday, or a currency transfer service for family abroad.

In much of this B2B market government is barely involved. Often a whole series of B2B product operations- e.g. down a supply chain- are done within a single multinational company. Usually trade barriers can be avoided by careful siting of parts of the supply chain so that only untaxed products get sold on. Trade agreements are often not involved at all. For example there has been an explosion in supply chains around East Asia and yet few East Asian countries have comprehensive trade agreements with each other.

The orders of magnitude for UK trade are as follows: 43% of our trade is in services where the EU has essentially no commercial policy (i.e. there are no tariffs, nor any rules for trade, simply national regulations), and about 50% of our goods trade is outside the EU. All this services trade and non-EU trade is conducted under WTO rules, whether for services where there is the GATS (General Agreement on Trade in Services; see chapter 7 of Minford et al, 2015) or for goods where there is the MFN rule preventing a country from applying a discriminative tariff on any country. This implies that nearly three quarters of UK trade ($43\% + 0.50 \times 57\% = 71.5\%$) is already conducted under WTO rules without any intervention from the EU. Notice that all those trade agreements the EU has signed on our behalf cover hardly any of our non-EU trade (see below); mostly they are simply continuations of old colonial agreements.

As explained in chapter 7 of Minford et al., the EU has made some efforts since 2009 to open up a Single Market in services across the EU. However, UK services trade has mainly bypassed the EU because the long-standing national barriers have not been removed; even these Single Market efforts have had little effect because exemptions are freely permitted on the grounds of public interest- a reason that is easily invoked for services provided by nationals. Hence there is little scope for free market entry in services across the EU. The City of London provides financial services to EU nationals and firms that wish to issue financial assets there. This has nothing to do with the UK being in the EU, since these transactions are all offshore, just like issues of dollar bonds. It would of course be possible for the EU to forbid its nationals from using UK markets, if the UK left the EU. But it

would trample on free capital movements between EU countries and all other ones, which is a guiding principle of the Maastricht Treaty.

What this means is that services are traded under standard WTO rules wherever there are opportunities in the world. Noting once again the importance of being small, the UK is an effective supplier of many financial and other services to many different countries' firms and citizens. If any one or any one group of them decides to stop trading with the UK there are many others with whom the UK can do business. So far the UK has managed to do good service business around the world without any help from the EU.

Distribution and the retail market

From this market 'distributive businesses' (consisting of wholesaler-retailer-marketer firms in a country) buy a product and then put it on sale in their country's shops. These businesses specialise in the intricate processes of getting products and services to market. These processes include getting government permits, paying tariffs and taxes, advertising locally, finding the right retail outlets and so on. Once in this shopping market a UK product will become a distinct product with some branding attached. Its retail price will equal the world price at border plus the competitive distribution margin including local taxes plus any tariff-equivalent charged by the country. Its sales in the country will rise or fall, in competition with other locally branded goods of similar type, with changing prices; there will be some elasticity of demand in response to these price changes, depending on the closeness of this competition.

To this set-up we now add two further assumptions: that UK products are produced within competitive UK industries and that the output of any UK product is small relative to the size of the world market for that product. Since our economy is under 3% of world GDP, the last assumption must be generally accurate. As for internal competition we have an active Monopolies and cartel office dedicated to ensuring it; industries that fail to be competitive are regularly referred to this office and action taken to make them competitive if they are not. So again, this seems to be a reasonable assumption.

a) the case of a single small country setting a tariff or giving a trade preference

These assumptions give rise to what is known in trade theory as 'the importance of being unimportant'. This can be seen as follows. Any small country levying a tariff on our products cannot influence their world price. Consider how this happens; we will make the usual assumption that the tariff revenue is handed back to taxpayers in some way, so their income remains the same, and they buy as much in total as before.

First, the retail price of our product would go up in that country, call it Ruritania, and so less would be sold there. Other competing countries would sell more, replacing our sales. Our UK industry would then seek to sell its unsold output elsewhere. It would find that its competitors' sales elsewhere have fallen and so it supplies more to those other markets. The extra amount in each market is small and so virtually no change in retail price is required for the extra sales. What we notice is that neither the world supply nor the world demand for this product have changed and so nor has the world price: the only change is in the distribution of products. UK output is diverted from the tariff-levying country elsewhere, and vice versa for other countries' output.

Let us go over this again carefully, by asking whether if the world price remains the same everything we have claimed will happen:

- a) at this (same) price UK suppliers' total supply will be the same. Hence as it supplies less to Ruritania it must sell more product to other countries.
- b) In these countries non-UK suppliers will find a decrease in demand for their product because UK supply has risen. They then divert their unused supply to Ruritania. Consequently Ruritanian customers for the product have their demands satisfied by extra supply from non-UK producers.
- c) Hence supplies to all countries remain the same. So do supplies from all countries.
- d) Demands from all countries for the product also remain the same.
- e) Hence there is no need for the world price to change.

What one can see from the explanation is that the tariff has not affected the UK in any way; it has merely redistributed the product it makes between demanding countries. Similarly for other supplying countries, they see a redistribution of their product.

Why is this important to the UK? It means that no country has any incentive to levy tariffs on UK products, since they do not affect the world price they pay for them. A major reason for tariffs is to force down the prices paid for them.

Another reason for tariffs is to increase the sales of your domestic industry. But again if that industry could have sold its output at the world price, then any extra sales it makes will be at the expense of sales abroad. So it will sell no more in total.

Now if we apply this model to a trade agreement between the UK and a tariff-levying country what we find is that too makes no difference to UK welfare, since by the same argument when the tariff is taken off, the UK simply sells more into that country and less elsewhere.

So this model implies that, as a small world supplier, we have no national interest in trade agreements with any particular country

Commentary

Of course this is pure theory. No doubt there will be numerous ways in which actual markets differ in detailed effects. However the point of the theory is to explain how 'zero effect' can occur. Even if there are some detailed differences in practice they are likely to be of second order. The force of the point lies in looking at 'general equilibrium' (i.e. all markets when all effects have worked out), rather than at one market on its own, 'partial equilibrium', where the effects may be strong but quite misleading for the overall effect. Unfortunately many policy commentators are ignorant of this general equilibrium analysis.

Some will argue that competition is not so intense as assumed in this theory. But there are two points about this. First, in the long run, which is relevant here for a long-term change in trade policy, competition does tend to be intense as pockets of inefficiency and imperfection are discovered over time by new or old competitors. Second, even under imperfect competition much the same sort of effect goes through in general equilibrium: a country's firms may benefit from the trade preference but they are limited in their capacity to supply and hence their higher supplies to the preferential

market allow other suppliers to replace it in other markets. Overall, the main effects are of product displacement. Consumers in all markets are little affected since they have access to substitute product from other suppliers.

The essential 'take-away' point is that trade agreements are, from the national point of view, of limited relevance. At most they are of second order importance. Nevertheless particular firms will not see matters like this; for a particular firm a market may be crucial to it as its main selling area and hence it will lobby intensely for a trade agreement in that market. But an implication of the take-away point is that we should not confuse corporate interests and lobbying with the national interest.

This point only fails if we are dealing with a national monopoly in the world market. In this case the firm and its country have the power to alter world prices. Two large countries with substantial monopoly power on each side will then be engaged in an effort to widen world trade in the interests of their domestic consumers and they will each try to gain overall in terms of the world prices they charge and pay for. But as noted at the start this is not the case for a small country without monopoly power such as the UK. The UK enjoys 'the importance of being unimportant'. It is from this that the essential irrelevance of trade agreements arises for its national interest.

(b) the (rare) case of a large country offering preferential trade that absorbs whole industries' output

However, let us turn to the situation where the UK, a small country, is dealing with a large country like the US or China or a large country-block like the EU. Here the offer of a preferential agreement may require different analysis.

So now suppose a large country, the US say, offers a tariff elimination on a UK product. This country being large it is quite possible that the UK industry's supply could be wholly demanded in this country's market. If the country's market is still too small for this, then the analysis of a) above still applies. And indeed even large countries will usually not have large enough markets to totally absorb another country's supply. It is important to realise that even the largest market will not absorb the whole of one country's product in practice- usually because there will be limitations on the suitability of the UK product for the market, so that only a part of the industry is involved. If this is so then the only effect of the trade agreement is the across-country displacement analysed under a).

But suppose that it is indeed large enough to absorb the whole UK industry's supply. Let us assume that the UK supplies its output to the US at a price now higher because there is no tariff and so the UK suppliers can sell at the ex-tariff price. Because of the extra UK output and so the extra competition the US price of the product falls a bit. But plainly the UK industry gains, selling its output now at this higher price than it could obtain before.

If this were all that happened we could say that this improved the prices the UK enjoys. Effectively on this one product the UK enjoys a higher export price and this can continue indefinitely. We say the UK's terms of trade have improved. As far as the UK is concerned this product's price now joins the relevant set of available trading prices.

However such an offer is rare to the point of non-existence. The reason is that the home industry will complain vigorously to the US government about the damage it will suffer from the lower prices

induced by extra UK competition. They will wish to be compensated and trade negotiations are a general balancing act by governments to assure industrial support for the trade agreement. The 'balance' to the gain offered to the UK in better prices on this product will come in the form of the UK offering a preference to US industries on other products. To do this the UK must a) have an 'mfn' tariff on these products for other countries b) give US producers a zero, preferential, tariff on them. Compared with no trade agreement for the UK and a zero tariff on all its imports, this is likely to be costly. Its consumers and firms will now pay higher prices for certain products in which the US wants an agreement, and this will be a cost to set against the gain to its industry that acquires US trade preference.

To take a recent example of this, in the TPP in Asia negotiated recently Vietnam stands to gain from preferential access to the US market for its textiles; however it must also source its imports of a variety of products from other TPP partners in return, at possibly higher than world prices, and for this it will have to place tariffs on its normal world import sources.

Effectively these trade agreements with large countries are similar to customs unions. A network of tariffs is set up on third parties while the signing partners agree to zero tariffs for each other. As we have seen with the UK's joining of the EU customs union, this is not necessarily a good agreement for the joining country; and for the world as a whole it is damaging because it restricts global free trade.

The rule of thumb for a country joining a customs union is that it will only gain if it sells quite a lot more than it buys from the union partners. For the large country offering the agreement, there is only a potential national gain if it involves another large country. Then again it can only gain if on all the products with all the other countries it sells more to them at higher prices (due to the preference) than it buys from them at higher prices. Yet from the world's viewpoint at large these agreements are damaging compared with general free trade.

Should by chance a large country such as the US offer the UK a higher price for some products via tariff reductions at a low cost that makes the deal attractive, then what is the relative likelihood of the UK getting such a deal if it is in the EU compared with if it is outside the EU? The usual view is that there is more chance inside the EU. However as the endless struggle over TTIP illustrates, the EU is so large and complex that concessions to it can be seen as highly expensive by the US. The UK on its own however is far less threatening; an agreement may be much easier. We see this already in the numerous ways in which UK service industries, such as banking, finance and law, are closely integrated into the US market and vice versa. But this is without any help from trade agreements! These links have arisen naturally through the B2B markets in services, where firms have found that they can usefully link their businesses to provide a US-UK service- for example in advising on takeovers, where US-UK deals are commonplace.

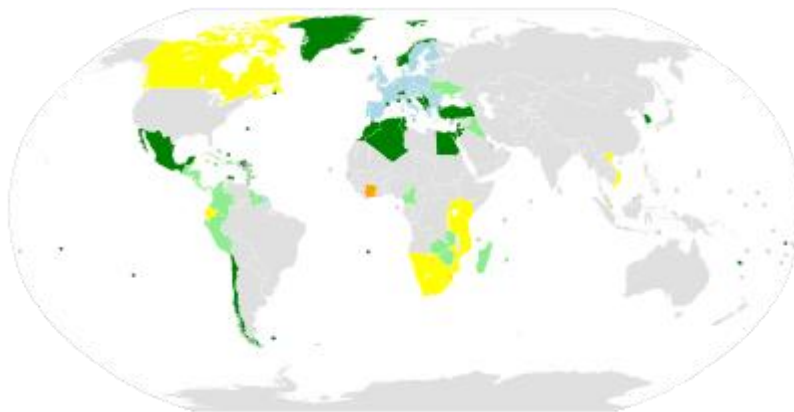
What we see in this discussion of trade agreements of a small country like the UK and a large country like the US or the EU, is that they are not necessarily beneficial. The UK's agreement with the EU is an example: the UK is quite a lot worse off because of this trade agreement. By contrast, the UK's integration in services with the US has grown over the years through a process of shared industries and multinationals, to generate a high degree of beneficial integration, without any assistance from trade agreements.

(c) Could there be a ‘blizzard’ of countries raising tariffs on the UK on Brexit?

One ‘nightmare scenario’ is conjured up by some opponents of Brexit that when the UK leaves the EU all countries with which we currently have trade agreements via the EU would rip them up and levy the mfn tariff on us.

There are two points to make about this. One is that in fact the EU has only a very limited number of trade agreements. With some countries of importance to us such as China and Commonwealth countries of Asia it does not have one. (It is negotiating the TTIP with the US but this agreement is a long way from becoming reality as it is under attack both in Europe and the US.) Hence the effect on the world prices of our products would be quite small. Essentially a rise in tariffs on our share of world trade in all these products would have a tiny effect on the world demand for these products and so also on their world price.

*This map, taken from the Wikipedia page on EU trade agreements and based on the Agreements database of the EU, shows the limited extent of EU trade agreements. There are none for Asia; a few in Latin America; and most are in parts of Europe where the EU is acquiring new members.



EU Free trade agreements

- European Union
- Agreement in force
- Agreement provisionally applied
- Agreement signed, but not applied
- Agreement initialled, not signed

Notice that the agreements with Canada and South Africa are extremely recent and so UK trade has been conducted with them both under WTO rules. It can be seen that the coverage of EU trade agreements is largely confined to Central and South-West America and parts of Africa. Many of them continue old colonial agreements.

Second, as we have seen, from the importance of being unimportant, no country has an incentive to do this to us, as we are small. In practice we would simply take these agreements over as they stand.

So this nightmare scenario is just that – a nightmare.

(d) If we leave the EU and the EU will not sign a trade agreement with us will the UK be badly injured?

This is a frequent argument from the anti-Brexit camp: that the UK will be 'out in the cold' outside the EU tariff wall. However, as argued in my book 'Should Britain leave the EU?' the whole point of leaving the EU is to get outside the EU's tariff-equivalent wall so that we can trade at world prices. Plainly if we are outside the EU tariff wall, then we sell to the EU, like anyone else, at world prices. We gain by being in this way exposed to world prices both on exports and imports, because the EU's protected prices cause our consumers loss and distort the structure of our production.

As I also noted in the book it is quite likely that the EU will wish to sign a free trade agreement with the UK of some sort since they sell so much to the UK, much more than we sell to them. What form might this take? Probably it would involve modifying the Brexit so that for certain products we just keep going with the same EU customs union, presumably for a transitional period. The logic of my calculations then implies that this FTA *reduces* the trade gains of Brexit, because in effect it waters it down.

Nevertheless it would serve the useful purpose of cushioning the blow for 'big loser' industries.

In any renegotiation or Breset treaty, the UK needs to aim for world prices as the benchmark for post-EU trade across the board. It should be a matter of indifference whether the EU places its existing external barriers on the UK or not. As we have seen any deal whereby these barriers are removed for us but maintained for all other countries actively damages the UK! This is because we then have to buy from these other countries at tariff-inflated prices.

There is the faint possibility that the EU would simply levy on us the external tariff (on average around 4% in 2013 for manufactures, chapter 6, Minford et al, 2015). This compares with our estimate based on our most recent data of 21% on manufactures for the total tariff-equivalent on the lowest-price suppliers in world markets; the non-tariff element is due to quantitative restrictions, anti-dumping duties or the threat of them, and residual regulatory barriers. It might be considered difficult for the EU to use such barriers against the UK. If so, then on Breset UK exporters would be close to tariff-free anyway in its EU trade. However, by their very nature non-tariff barriers are non-transparent and if they are diluted by the EU, the protection they are intended to supply would be eroded by lower-priced UK entry. So it is reasonable to assume that the barriers would somehow be maintained at a similar level.

Therefore the answer to the question heading this paragraph is no: we would be better off, but very likely we will indeed sign an agreement continuing the current set-up for some sensitive industries, such as volume cars. This would make us not as well off from Brexit as we would have been with a clean break but it would help to cushion the transition for some losing sectors.

It is worth pausing here to consider various sectors that would lose from Brexit measurably and how their losses could be dealt with politically. As it is, these sectors are already campaigning vigorously against leaving the EU; in the immortal words of Mandy Rice-Davies 'they would, wouldn't they!'

Table 2 sets out the higher EU protection rates we have found apply to various sectors.

Table 2: UK industries where the EU protection rate exceeds 10% according to 2000s data on prices and margins

Industry	EU protection (%)	Share of UK GDP (%)	Possible UK government action
Agriculture	18	0.6	Treasury deficiency payments
Textiles	12	0.3	transitional continuation
Machinery- all types	25	1.8	transitional continuation
Transport equipment (excl aircraft)	22	0.9	transitional continuation
Furniture and other	54	0.7	transitional continuation
Aerospace	na	0.4	government-government nc
Pharmaceuticals	na	0.8	mainly govt procurement nc

Table 2 reveals that the sectors receiving EU protection are actually small enough to be assisted over Brexit with limited cost to either the Treasury or the economy: they come to around 5% of GDP.

Agriculture is the sector most publicised because of the vociferous National Farmers Union. Much of UK agriculture is highly efficient- especially arable- and needs no help. But some- dairy and hill farming for example- is vulnerable outside the CAP. Most CAP funds go to foreign farmers, including the UK's own contributions, whether from the taxpayer or the UK consumer. These are a pure cost to the UK and would be eliminated. Paying support to home farmers with difficulties meeting world market prices can be done via deficiency payments (direct Treasury support, as used prior to EU entry). These can be made conditional on various environmental objectives for farmers; and they do not constitute a cost to the UK, since they are in effect payment for certain desired objectives. As for the cost to the Treasury this is likely to be quite small (£3 billion has been suggested as a benchmark figure), certainly relative to the fiscal contributions made to the EU in general (net cost £8 billion) and also specifically for the CAP (much of that net cost).

Transport equipment is heavily protected and includes the volume car industry. This is where I would expect huge pressure to maintain exactly the current trade barriers, because that would keep prices up in the UK to protect this huge industry. However of course this could only be a transitional arrangement to allow volume car producers time to adjust. In the long run UK car prices will fall to world levels, and sales of cars to the EU would attract the mfn tariff rate plus whatever non-tariff barriers the EU levied; these last would potentially be as high as on the lowest-price world producers, in which our car producers would also only get world prices on their EU sales. In the end there is really no mid-point between being and out of a customs union.

It remains to be seen whether the other protected manufacturing industries will also put up a big fuss. Probably they will, in which case we should expect the same transitional solution. However, some industries are smaller, nimbler and more easily adapted than others; textiles, furniture and parts of machinery (such as JCB). Transitional arrangements may well be shorter and more market-related for them.

With aerospace we are dealing with government-to-government deals and little would change. As for pharmaceuticals, their margins largely also depend on government arrangements, here with the NHS; again one should expect little change.

The essential point about these transitional arrangements is that they will reduce the gains we make in the short run but not in the long run. Realistic market liberalisation- and leaving the EU is a huge liberalising reform- requires pragmatism in dealing with losers for it to be politically possible. This does dilute short-term reform gains but preserves them in the long run which is the key part as the reforms will deliver these same gains for as long as they are left in place.

Conclusion

Many commentators have failed to understand that the UK is already a major participant in world markets without any involvement of the EU. Nearly three quarters of our trade already takes place under WTO rules in a world in which there are many and diverse barriers to trade but limited to what is permissible under the WTO rules; EU trade agreements for our third country trade are of quite trivial extent, mainly continuing old colonial arrangements. However our trade in agriculture and manufactures with the EU is heavily protected by the EU customs union and the associated Common Agricultural Policy; this protection is seriously damaging to the UK's economic interests because it raises consumer prices and expands sectors in which we have no comparative advantage at the expense of sectors where we do. By leaving the EU customs union we get rid of this protection on one quarter of our trade, with gains that we have quantified, and we restore these sectors to the world market under the WTO, like the other three quarters of our trade.

Once outside the EU these sectors will not need to sign trade agreements in order to thrive, any more than our existing trade has required many such agreements. For a typical small country, like the UK, trade agreements with other small countries are, taken singly, of no real relevance, though plainly harmless. Furthermore, no other small country would have any incentive to put a tariff on the UK where none previously existed; hence after Brexit any existing trade agreements the UK had via the EU (a small number with small economies in the main) would be likely to continue by default. Even if none of them continued, there would be minimal effect on the world prices the UK would face, simply because these countries are small and also UK supply is a small fraction of world demand; so the reduction in market demand for UK products would mainly result in diverting UK supplies to other countries' markets.

By contrast trade agreements with large countries may seem attractive because a whole industry's output could be absorbed into the large country's market and enjoy a privileged price. However these agreements may involve a network of new restrictive tariffs on third countries, and therefore act like a customs union, creating more damage than this benefit. The latter indeed we have seen is the case for the UK trade agreement with the EU.

Our default position as a small trading nation should be that we should supply and demand goods and services on world markets and at world prices, asking for no special privileges for any of our industries since such privileges can usually only be bought at a cost to our national interest. Our aim should be to buy from the best-value world sources and to have industries whose products are efficiently made, consist of what we are best at making and compete on world markets with all comers. We can achieve this by turning over the remaining quarter of our trade away from protectionist EU rules to the rules of the world market under the WTO.

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